STRATEGIC MESSAGES FOR HEALTH PROFESSIONALS AND NEGLECTED TECHNICAL AREAS NECESSITATING ATTENTION

BY

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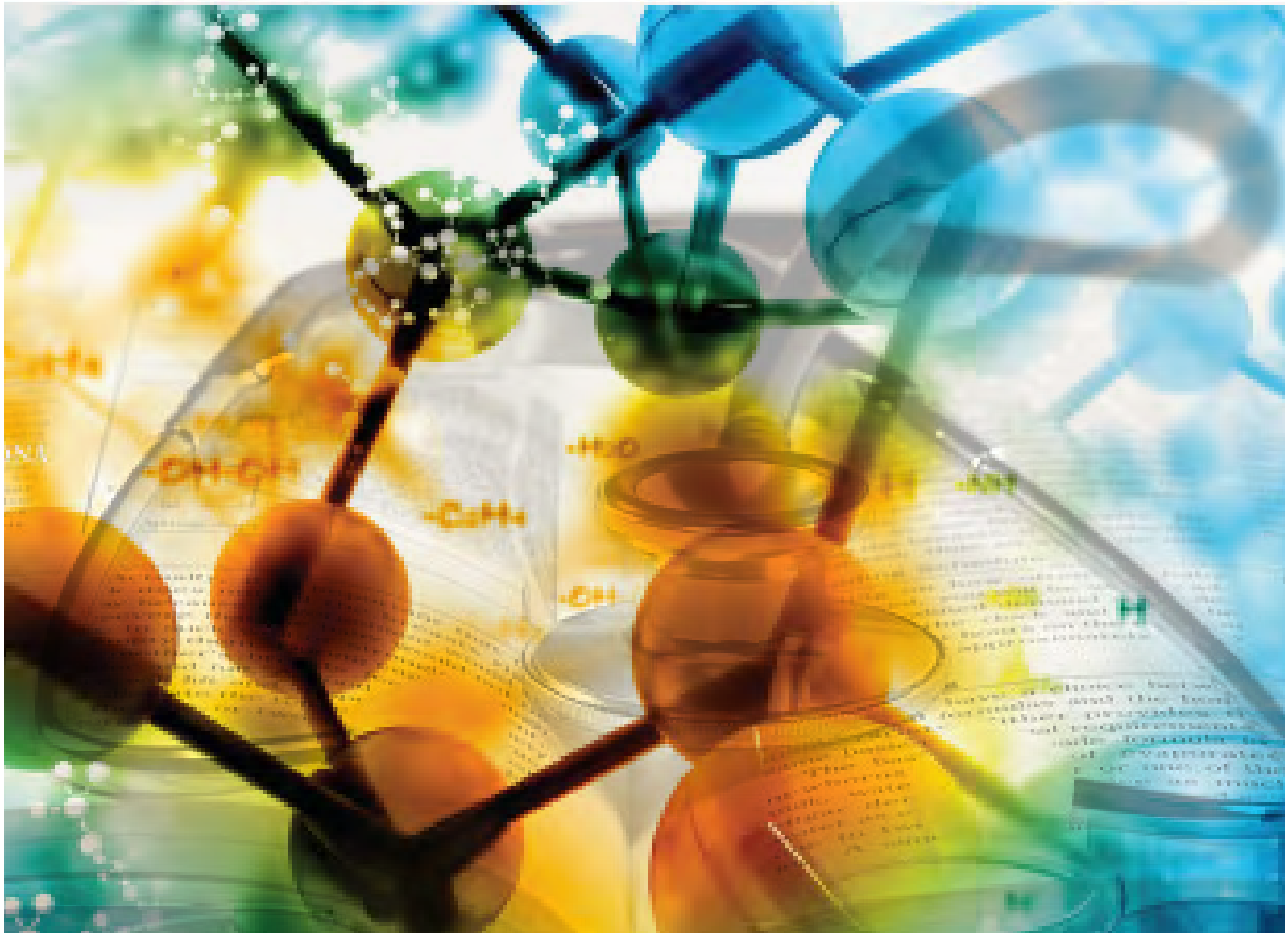

Strategic Messages for Health Professionals
&
Neglected Technical Areas Necessitating Attention

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How to read this book to maximize its utility

Part A contains 41 different topics under 6 broad areas. The broad areas are: (i) Health policy and systems (ii) Human resources for health (iii) Buttressing the effectiveness and efficiency of health programs (iv) Emerging and urgent matters (v) Neglecting these entities will be costly, (vi) Forward-looking entities. **Part B contains 15 neglected technical areas** of importance that deserve attention in light of the evolving scenarios happening in developing countries.

It would yield useful information for **realistic actions** to be taken if the topics/articles are reviewed and critically dissected by respective program directors and their staff. It could also serve as topics **for generating new ideas** in platforms such as debates, lunchtime talks, and seminars conducted at schools of public health, community health, nursing, medicine, and affiliated schools. By doing so, **it could enhance the analytical, critical, and epidemiological thinking skills of students attending these schools. It could also expand their knowledge horizon and reinforce the knowledge base.** You will note that the primary intention of the author is to impart several strategic messages inherent in the field of public health and healthcare delivery system. Each strategic message is self-contained and self-sufficient for further in-depth discussion.

About this book

Part A is **"Strategic Messages for Health Professionals."** The strategic messages are extracted from 103 articles in the *books I recently authored, are subsumed under 41 headings. As the contents are generic in nature, it will be valid for many years. **Part B is "Neglected Technical Areas Necessitating Attention.**" It addresses some 15 neglected technical areas in the health domain that need additional attention. Generally, these areas are not noticed in the priority activities of the Ministry of Health.

*These books are:

Reflections of a Public Health Professional [Second Edition, 2021] [https://mbdsnet.org/wp-content/uploads/2022/08/reflection-of-a-public-health-professional.pdf]**[30 articles]**

Health System Challenges: A Developing Country Perspective [December 2021] [https://mbdsnet.org/wp-content/uploads/2022/08/health-system-challenges-a-developing-countrys-perspective.pdf] **[21 articles]**

Tackling the Challenges of the Healthcare Delivery System in Developing Countries [September 2022] [https://mbdsnet.org/wp-content/uploads/2022/12/BOOK-3-MBDS.pdf] **[30 articles]**

Cross-Cutting Health Issues in Countries with Limited Resources [April 2023] [https://mbdsnet.org/publication/cross-cutting-health-issues-in-countries-with-limited-resources/] **[21 articles]**

Three Books on Healthcare Delivery Systems in a Nutshell [October 2022] [https://mbdsnet.org/publication/three-books-on-healthcare-delivery-system-in-a-nutshell-2]

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PREFACE

This is the fifth in a series of books on public health and the healthcare delivery system to share my experience with my fellow health professionals. The health and disease situation scenarios in developing countries are quite different from those in developed countries. The ideas put forward and points elicited here are from the perspective of a developing country, taking into consideration all the characteristics prevailing in resource-limited settings.

The majority of the strategic messages or strategic points in color-shaded paragraphs in this book are **extracts from my previous books** and are in line with the context of a developing country's situation. Promoting the public health domain by way of fielding various interventions in a resource-limited setting is quite different from those interventions that would be fielded in developed countries.

The main purpose of putting these strategic messages in one place is to make it a lot easier for health professionals to peruse them within a short period of time. **Just fifteen minutes of reading** will yield a plethora of knowledge and information on the actions that could be taken into account to improve the health domain and strengthen the effectiveness and efficiency of the healthcare delivery system. In case the readers desire to delve deeper, they can effortlessly refer to the article number of a particular book indicated. **After reading the strategic messages in color-shaded paragraphs, we must ask ourselves, "If that is the case, what should we do?".**

These **strategic messages can shape our thought processes** to a significant extent. They can foster and nurture the game-changing ideas in their respective technical areas. They will set the tone and also serve as backgrounds, fundamental tenets, or strategic directions that can initiate or facilitate the development of new *modus operandi* and innovative activities, modifications of existing strategies, reformulation of policies, etc. Depending on the demands of the circumstances, each strategic message can also serve as the foundation upon which many additional building blocks or innovative ideas might be evolved.

Senior policymakers and operational officers of health programs might use some of the pertinent strategic messages to inform their staff about further improving the situation. **Each strategic message should be critically reviewed in light of the existing situation in the concerned technical area, and the necessary line of actions can be spelt out.**

The questions mentioned in the article titled **"Questions Requiring Educated Responses: For Generating Ingenious Ideas"** can also serve as debate topics for lunchtime talks for a group of public health professionals, epidemiologists, policymakers, operational officers of various health programs, research scientists, social scientists, health economists, budget and finance officers, faculty members of health institutions, postgraduate public health students, and other pertinent professionals as per the selected question. Many new ideas, initiatives, and approaches to improving a particular situation can be evolved. These debates and lunchtime talks are, in fact, training grounds for health staff **to improve their critical, analytical, epidemiological, futuristic, and out-of-the-box thinking skills.** These five skills are minimal requirements for becoming a competent health professional.

The main purpose of putting the neglected technical areas in Part B of the book is to emphasize the fact that the ministries of health are paying less attention to these areas for a variety of reasons. It is easier to deal with these issues early on, before they become deeply rooted in the community or population. In actuality, these technical areas complement one another and work as catalysts to improve the overall quality of healthcare provided to the general public. Encouraging and strengthening these technical areas can result in **health system services that are efficient, responsive, and all-encompassing.** The Ministry of Health's relevant personnel handle multiple technical areas that operate in an integrated manner. Similar to jigsaw puzzle pieces or mosaics, they are also connected to one another. The deficiencies of one technical area may have an adverse effect on another. As a result, we also need to fairly improve and advance the technical areas that have been knowingly or unknowingly ignored.

All in all, in addition to the various elements mentioned in color-shaded paragraphs, the **country's socioeconomic status and political atmosphere** have a considerable impact on the health sector's progressive development and population health. As health professionals, we must make every effort to ensure that the public is secure in their health.

The ultimate goal of writing this book is to enhance the performance of healthcare delivery systems, especially in resource-limited countries. As the **discussion and proposed action points are generic in nature,** they can easily be adapted as per the requirements of individual countries. All in all, incorporating the ideas of professionals already working in these areas will be a huge benefit and an extra advantage for the country. Together, let's improve the effectiveness and efficiency of the healthcare delivery system.

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Acknowledgement

Dr. Myint Htwe is a public health expert with a wealth of knowledge in the national and international health fields. The MBDS would like to thank him for his important work on the publication of this book. This book is the fifth in a series of books produced by him. All the books complement each other. This fifth book contains a synopsis of strategic messages under 41 headings extracted from the previous four books. It also contains 15 neglected technical areas needing added attention in the healthcare sector. These technical areas are typically not high on the agenda of the Ministry of Health.

The previous books were written based on the experience he acquired while working at the Ministry of Health from 1976 to 1994, at the WHO Regional Office for South-east Asia from 1994 to 2010, and as Union Minister for Health and Sports in Myanmar from April 1, 2016 to January 31, 2021.

The intention is that the messages indicated in the color-shaded paragraphs will act as a stimulant or catalyst for public health professionals to generate further creative ideas that are relevant to the healthcare situations in their individual countries. The MBDS is appreciative of this.

Dr. Moe Ko Oo
Secretariat
Mekong Basin Disease Surveillance (MBDS)
27 May 2025

Disclaimer

The views expressed in this book are those of Dr. Myint Htwe and do not necessarily reflect the views, opinions, or policies of Myanmar's Ministry of Health and Sports, the World Health Organization, or various organizations, associations, and committees with which the author has been associated for many years. The author alone is responsible for the ideas and opinions expressed. The articles or contents of the book can be freely reviewed, abstracted, reproduced, or translated in part or in whole, but not for sale or use in conjunction with commercial purposes. In no event shall the author be liable for inconveniences or damages arising from the use of facts and information contained in the book and web page.

Appreciation

I want to express my appreciation to the editor, Dr. Soe Kyaw, of MEDIAART, an academic publishing consultancy, for the book's distinctive publication design, as well as to Dr. Moe Ko Oo and his team from the MBDS Secretariat for their insightful ideas to enhance the book's overall aspect.

Gratitude

Through this book, I want to express my respect and gratitude to my late parents, U Shwe Tha Htwe (then the head of the Department of Agriculture, Burma) and Daw Aye Yee, who enrolled me in St. Patrick's Catholic Primary School and St. Paul's High School in Rangoon, Burma. I want to express my sincere gratitude to my early teachers from the two schools. I gained a solid foundation from a variety of perspectives, particularly moral and ethical perspectives.

I would personally appreciate and thank the professionals and staff of all fields and disciplines working in 14 states and regions and the Nay Pyi Taw region, Myanmar, under the umbrella of the Departments of Public Health, Medical Services, Human Resources for Health, Medical Research, Food and Drug Administration, Traditional Medicine, Sports and Physical Education, 16 medical and paramedical universities, 52 nursing and midwifery schools, and staff of the office of the Ministry of Health, who supported, collaborated, and worked with me as a solid team from April 1, 2016, to January 31, 2021. I gained unique experiences while interacting and working with them for nearly five solid years. I also learned many valuable lessons from them, for which I will always be grateful.

I would also like to convey a special thanks to my wife, Dr. Nang Kham Mai, retired training team leader for the Department of Health, Rangoon Division, Burma, for her unflinching support throughout the writing of this book.

PART A

STRATEGIC MESSAGES FOR HEALTH PROFESSIONALS

A.1.
HEALTH POLICY AND SYSTEMS

1.1 Health Policies, Strategies, Plans, and Programs: Ultimate Predictors for Streamlining the Health Domain

General comments. Health policies, strategies, and plans serve as the **gatekeepers or lifelines for the entire range of tasks performed by health professionals.** In that vein, we ought to make every effort to render these entities highly logical, current, practical, feasible, useful, integrated, and methodical. These three entities should also be well integrated and linked to each other. Health strategies are dynamic. Modifications, reinforcements, fine-tunings, and adjustments are necessary, depending on the nation's evolving health policy, political climate, and changing epidemiological scenarios. [**B4-A1].** We should aim for the national health plan to be like **a deeply rooted big tree** with a strong trunk, healthy branches, twigs, fruits, cones, flowers, buds, and leaves where program managers of various health programs, collaborators, development partners, and stakeholders can nurture each part, which represents the activities of various health programs. **[B1-PartA-A14]**. Health policies, strategies, and plans should be harmonious from various perspectives.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

National health policy, national health plan, and its strategies should be **formulated at least based on:**

- A solid foundation of science;
- Reliable data and information arising out of robust health and hospital information systems;
- Ethical principles, especially public health ethics;
- The health rights of the population, with the overall aim of achieving social and economic well-being. **[B1-Part A-A6]**.

We need to have **healthy public policies** in the country. The government should ensure that the policies of all ministries are healthy public policies. The social determinants of health (social, environmental, cultural, and physical) are influencing the health of the population. The role of the Ministry of Health is only one part of it, but it plays a key and catalytic role. **[B2-A21]**.

The government's overall development policy, national health policy, national health research policy, the availability of human resources for health, the performance and mode of operations of the healthcare delivery system, the available budget, and collaborative efforts by UN agencies, organizations, foundations, societies, INGOs, and local NGOs, among other factors, should all be taken into account when choosing the **final strategic plan. [B1-Part A-A14]**.

National health research policy must also be forward-looking, responsive, dynamic, and broad enough to cater to the contemporary and future needs of the country, especially in areas of health promotion, prevention, treatment, and rehabilitation. **[B1-Part B-A4].**

For public health professionals, we need to heed the definition of health as pronounced in the preamble of the WHO constitution, i.e., **Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.** However, for psychological well-being, strategies are different, and it is much more difficult to implement them. The causes of this psychological well-being are beyond the purview of the Ministry of Health. Therefore, these strategies should be formulated jointly with other relevant ministries. **[B3-A18].**

When senior officials of the Ministry of Health formulate the health policies and strategies of the country, they should consider the definition of **"health**" as given in the preamble of the WHO constitution. To achieve a healthy state of the population, the Ministry of Health and development partners should work together to **formulate long-term strategies for promoting the health of the population. [B3-A18].**

Generally, national health policies and strategies were formulated several years ago in any country. It may have been quite logical and valid at the time it was formulated. However, given present political, economic, and social conditions and changing epidemiological conditions, as well as a number of other reasons, it might not be the most appropriate one at this time. It, therefore, calls for an **initial policy review and analysis. [B3-A23] [B4-A16].**

We should try to incorporate at least the following **basic characteristics into the national health plan:**

- Relevant to the current needs of the country in terms of problems, issues, and priorities already accorded to specific population groups affected;
- Capable of achieving its goals and objectives within the specified time frame;
- Cost-effective and cost-efficient;
- Specific and concrete;
- Implementation feasibility, given the human resources that are available in the country. **[B1-Part A-A14].**

The following **four basic tenets** should be applied when reviewing the national health plan:

- The national health plan and national health policy must be closely linked;
- The spectrum of the national health plan must be within the framework of national health policy and other relevant policies of the country;
- The national health plan must be cohesive by itself and comprehensive enough to cover the demands of the population;
- The needs of the country's contemporary health situation. **[B1-Part A-A14].**

Before we initiate the process of reviewing the national health plan, it would be advisable to do a **quick review of the national health policy** itself. The national health policy was generally formulated many years ago in many countries. Since that time, the following scenarios might have occurred:

- Changing epidemiological conditions of diseases and situations;
- Changing patterns of human resources for health;
- Increasing quantum of external aid and changing funding scenario;
- Increasing involvement of UN agencies, foundations, organizations, international and national NGOs, civil society organizations, community-based organizations, and the private sector in the field of health;
- Directional changes in the overall policy of the country;
- Increasing demand for health from the people;
- Changing disease patterns and population structure;
- Emergence of state-of-the-art clinical management and diagnostic techniques;
- Research findings are pointing towards "change;"
- The increasing importance of border area health work and the high momentum of inter-country collaboration.

In that context, reformulation of the national health policy is required. **[B1-Part A-A14].**

The national health plan should be reviewed in the context of the following:

- Relevant to the current needs of the country (in terms of magnitude of the problem, specific population groups affected, urgency, severity, imbalanced priority, etc.);
- Be able to achieve its intended objectives within the stipulated time frame;
- Cost effectiveness;
- Specificity, concreteness, and completeness;
- Feasibility in terms of capacity to implement it with the available human resources for health, time frame, etc. **[B1-Part A-A14].**

Implementing public health initiatives or interventions mentioned in the national health plan is the most effective way to improve the overall health status of the population. Increasing the number of hospitals is very costly and not the right approach to improving the overall health status of the population. Therefore, our aim is to have **a robust public health system through the application of sound public health initiatives. [B1-Part A-A10]**

The national health plan should be reviewed in a very systematic and careful manner. **The technical review team** should represent a wide spectrum of professionals consisting of broad-minded health planners, health administrators, senior researchers, senior epidemiologists, health economists, sociologists, policy researchers, policy analysts, public health ethicists, biostatisticians, program managers, and possibly collaborating partners and stakeholders. For ground reality checks and to elicit the *modus operandi* at the peripheral level, it is worthwhile to include senior and experienced basic health care service workers and representatives of community-based organizations. **[B1-Part A-A14].**

The **revised national health plan** should have the following basic characteristics:

- Rational and forward-looking;
- Activities are concrete and implementable with available resources (especially budget and human resources);
- Activities in the national health plan are conducive to ease of implementation;
- Absence of duplication of work for different programs in the national health plan;
- Absence of duplication of work with stakeholders' workplans;
- The work plans of different stakeholders are complementary and in synergy with the national health plan activities;
- Monitoring and evaluation processes are simple, robust, responsive, and have provisions for action or follow-up;
- Compact and well-integrated activities to tackle contemporary health situations and the needs of the country. **[B1-Part A-A14].**

After the review and analysis of the national health plan, the **toughest decisions faced by decision-makers** are:

- Should we prioritize programs, and how should we **prioritize health programs** in the national health plan?
- Should we prioritize activities, and how should we **prioritize activities** for each program?
- How should we **allocate budgets** among different programs? **[B1-Part A-A14].**

The **program managers** play a very crucial role in running the health programs effectively and efficiently. The following characteristics, if possible, should be present to effectively and efficiently manage a health program for the Ministry of Health:

- The program manager should have **good epidemiological thinking skills** and know the principles of public health and public health ethics thoroughly.
- The program manager should have certain **basic leadership skills**, especially for creating a team spirit among the staff. Additional characteristics are possessing an attitude of fact-finding rather than fault-finding, a compromising attitude but being decisive in taking action on irresponsible acts, and gross negligence of staff in performing their duties under him.
- The program manager must be able to **network** with various UN agencies, organizations, international NGOs, local NGOs, foundations, and development partners to explore funding and technical support through a proper channel.
- The essential **job description** of different categories of staff working under the program manager must be available and modified as per the requirements of program delivery status and staff availability.
- The program must be **linked to and well-integrated with allied programs** in the Ministry of Health and those in relevant ministries.
- The program should have a **simple and practical monitoring system** for the timely detection of important lapses and deficiencies in terms of technical, administrative, logistics, and management aspects.
- **Ready-made quick checklists** to know the (i) staff performance; (ii) program delivery status in terms of meeting the objectives and targets; (iii) fund utilization aspects; and (iv) knowledge, attitude and practice of different categories of staff working in the program must be available.
- Brief **six-monthly evaluation meetings** and full-fledged yearly evaluation meetings must be in place. The format and *modus operandi* for discussion during evaluation meetings must be developed in advance, involving all key staff of the program. This is essential to achieving the desired objective of evaluation meetings.
- The **annual report of the program**, including the analytic part and future directions, must be produced regularly, and the format for the report must be developed, taking into consideration various reports of other programs in the country.
- The **format for recording staff duty travels,** both in-country and outside the country, must be made available, and mechanisms for reviewing them to take necessary supportive action must be in place.
- The program should have **regular staff capacity-building programs**, both built-in and outside the program and outside the country.

- The program manager should organize **monthly technical talks** for concerned staff working in the program on generic topics such as monitoring, evaluation, indicators, surveillance, outbreak investigations, analysis of data, and data presentation methods. This can benefit the staff even if he or she has been transferred to another program. If all programs are doing this activity, it can exert tremendous positive impacts for the country.
- The program should have **feedback presentation sessions** by staff who have attended a workshop, meeting, seminar, or conference, especially outside the country.
- **Mechanisms for anticipating and planning action** regarding expected funding availability, staff turnover, and human resources for the health situation must be embedded in the program. The program must have a mechanism for monitoring budget utilization, especially for funds received from outside the ministry of health. This can facilitate resource mobilization for the program.
- The goals, objectives, strategies, interventions or activities, targets, and indicators must be **rational and practical.** The program should not hesitate to change or modify the strategies and interventions as required. **[B1-Part A-A16].**

The following **eight basic probes** should be considered before initiating or strengthening a program. The program on water and sanitation is given as an example. These eight probes are:

1. To what extent are "Program X" activities reflected in our national health policy, national health research policy, national health plan, and strategies?
2. To what extent are "Program X" activities reflected in the collaborative programs of WHO, UNICEF, UNFPA, UNOPS, UNDP, and other relevant INGOs, agencies, and entities?
3. To what extent are "Program X" activities included in the curricula of undergraduate medical and postgraduate courses such as MPH?
4. To what extent is "Program X" actually given preferential importance by the health education and environmental health sections of the Department of Public Health?
5. To what extent is research on "Program X" issues being conducted and the research findings utilized?
6. To what extent are data and information available on issues related to "Program X"?
7. To what extent is budgetary allocation made to carry out activities related to "Program X" in the budget sheets of the Ministry of Health, other relevant ministries, and the Municipal Development Corporation?
8. What is the quantum of the health workforce that can deal with "Program X" activities? **[B1-Part A-A17].**

It is the inherent duty of public health professionals, clinicians, epidemiologists, social scientists, and researchers to work collectively to identify the **best possible health interventions** suitable for a particular health program in a country. It is only through efficient health interventions that we can improve the overall health status of the population in the country. **[B3-A2].**

The **success of the health program** depends, to a significant extent, on the quality of the program director. Some of the characteristics that lead to this are: (listed randomly and not in order of importance)

- The ability to instill a **sense of ownership** in his or her staff regarding the health program activities they are in charge of;
- The **capability to streamline** the health program activities into something compact, integrated, and responsive using clear-cut indicators and parameters;
- **Research-minded** and the ability to incorporate built-in implementation research into the health program itself;
- As needed, **a keen sense** for conducting checklist-type monitoring and evaluation;
- Capable of **setting up regular discussion platforms** among the concerned staff;
- Keen to **conduct an annual evaluation** of the health program involving all categories of staff;
- **Receptive to listening** to the voices of the staff and the populace through various channels;
- Possessing **epidemiological reasoning skills**, making rational inferences, and initiating feedback mechanisms from the staff;
- The ability to **create a conducive work environment** in the program;
- Eager to provide **social support** to the staff in need;
- **A fact-finding approach** rather than a fault-finding approach;
- Committed to **leading and conducting** capacity-building initiatives;
- Recognizing the **value of information systems** and the reliability and validity of data;
- The capacity to **collaborate effectively** with similar health programs and other stakeholders;
- Always be heedful of the **principles of medical ethics, public health ethics, and research ethics;**
- The ability to **think holistically, futuristically, and epidemiologically. [B4-A4].**

The below-mentioned strategies need to be formulated by the Ministry of Health, involving all partners, such as like-minded organizations; INGOs, local NGOs, community-based organizations, medical, nursing, public health, and paramedical associations, UN agencies, and organizations working in the country. Of the many health strategies that we can think of, it is felt that the following eighteen strategies are noteworthy: These strategies are overarching and encompass many aspects, and they have several long-term benefits. A **strategy will bear fruit** only if it is systematically and collectively implemented, monitored, and evaluated. **[B3-A18].**

The following **eighteen key strategie**s are worth considering to be implemented in a country:

1. "Promoting **Health Literacy** in the Population"
2. "Strengthening **Information Systems** in the Clinical Domain and the Public Health Domain"
3. "Reinforcing **Human Resources for Health**"
4. "Improving the **Performance of Hospitals**"
5. "Achieving a **Resilient and Responsive Public Health Domain**"
6. "Refining Communicable and Noncommunicable Disease **Surveillance and Sentinel Disease Surveillance Systems**"
7. "Bending the Trajectory Curve of **Morbidity and Mortality Rates** of Communicable and Noncommunicable Diseases"
8. "Fulfilling the Requirements of the **International Health Regulations (2005)**"
9. "Expanding **Universal Health Coverage** Through Primary Health Care"
10. "Launching **Health-Promoting Schools**"
11. "Reinforcing the **Expanded Program for Immunization**"
12. "Strengthening the **Food and Drug Domain**"
13. "Streamlining the **Health Supply Chain Management Syste**m"
14. "Fostering the Motto **"Exercise is Medicine"** Throughout the Country"
15. "Promoting the **Research Domain**"
16. "Refining the **Indicators** of the Healthcare Delivery System"
17. "Establishing a **National Health Insurance System**"
18. "**Establishing National Centers of Excellence**" [For example: "National Center of Excellence for **Cardiovascular and Respiratory Diseases;"** "National Center of Excellence for **Blood Diseases**;""National Center of Excellence for **Neurological Diseases;**" "National Center of Excellence for **Genitourinary Diseases**;" "National Center of Excellence for **Rehabilitation**;" "National Center of Excellence for **Communicable Disease Prevention and Control**;" "National Center of Excellence for **Environmental Health**;" "National Center of Excellence for **Zoonotic Diseases**;"

"National Center of Excellence for R**esearch Promotion and Development**;" "National Center of Excellence for **Gastrointestinal and Liver Diseases**;" "National Center of Excellence for **Diagnostic Laboratories**;" "National Center of Excellence for **Treatment of Cancers**;" "National Center of Excellence for **Diagnostic Radiology;**" "National Center of Excellence for **Endocrine Diseases;**" "National Center of Excellence for **Innovative Public Health Interventions;**" etc. **[B3-A28].**

It is high time that the policy on the **involvement of general practitioners** in the Ministry of Health activities be revisited because of the limited number of health workers in the country. **[B1-A9] [B1-A15]**

1.2 The Healthcare Delivery System: Safeguarding Population Health

General comments. The true workhorses of the nation's health sector are its health programs and systems. It is vast and includes a wide spectrum of programs. There are many stakeholders. A systematic and realistic framework and strategies should be developed and improved for the performance of pArograms and systems. A sufficient number of **quality human resources** must be made available. The most important issue is whether the strategic directions and major initiatives are in compliance with the national health policy of the country.

The availability of **technically proficient, morally upright, futuristic, optimistic, and team-oriented personnel** may be the answer to overcoming the many issues and challenges confronting the healthcare delivery system. To improve the overall healthcare delivery system, a plethora of activities are required, which are listed below in the boxes. A dynamic, robust, responsive, and efficient health information system is a basic prerequisite for the effective functioning of the healthcare delivery system. **[B1-Part A-A12].** The analogy is that the data and information emanating from the health information system are like neurotransmitters for the nervous system of the human body. Without reliable data and information, the performance and direction of the healthcare delivery system will be like **a ship sailing without a rudder**. **[B2-A8].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

We should **not lose sight** of the following entities that are happening all around the world: These entities have an impact on the performance of the healthcare delivery system in any country. These entities are:

- Evolving innovative public health initiatives and approaches;
- Emerging innovative strategies in the health domain;
- Application of artificial intelligence in health matters;
- Emergence of new vaccines;
- More knowledge on the genetic basis of disease occurrence;
- Availability of newer concepts for the treatment of diseases from stem cell research;
- Findings from basic biological research;
- Availability of newer techniques for organ transplants;

- The occurrence of novel or unexpected diseases;
- Increasing transmission of infectious diseases due to very high population mobility;
- Cutting-edge clinical treatment methods;
- Availability of robotic surgical techniques;
- Novel medications;
- Sophisticated diagnostic tools and methodologies;
- Novel radio-imaging methods;
- Novel radiotherapy techniques;
- Novel chemotherapy drug combinations and approaches;
- Innovative epidemiological approaches for the prevention and control of communicable and noncommunicable diseases; etc. **[B4-A5]**.

In any healthcare delivery system, we should aim for the **cohesiveness and collaborative work of the tripartite,** i.e., clinicians, including general practitioners, public health professionals, and health institutions. Their collaborative action is synergistic and could lead to achieving multi-faceted benefits in geometric progression. **[B3-A3].**

Some important determinants influencing the **effectiveness and efficiency of the healthcare delivery system** are:

- The technical, administrative, ethical, and quality of human resources for health;
- The robustness and responsiveness of various health information systems and sub-systems;
- The availability of a relatively sufficient budget;
- The efficiency of the national health supply chain and logistics management system;
- A strong research culture among the health staff;
- A promising career ladder for all categories of staff;
- The level of epidemiological thinking skills possessed by the health staff. **[B3-A6].**

The healthcare delivery system's **responsiveness will be sluggish**, and it may collapse sooner rather than later in the absence of an effective and efficient national health supply chain and logistics management system. This system is the driving force behind making the healthcare delivery system robust and responsive. **[B2-A7].**

Always try to **elicit viewpoints** on healthcare delivery system performance not only from health staff but also from the population through the conduct of seminars, key informant interviews, focus group discussions, and people's health assemblies. **[B3-A2].**

There are **numerous overarching strategies** and activities currently being implemented in the field of health in many developing countries. Some activities are donor-driven, and some are just the routine continuation of ongoing activities. Many activities appear to be redundant, and some are similar. It is a sheer waste of scarce resources if we continue to let it go. It could even be said that the conduct of these activities is unethical. **[B1-A5].**

The majority of the time, health professionals typically pay little attention to the **decision-making process** while running health projects and programs. We also need to review how policy and strategy-related issues are decided in the Ministry of Health. We need to improve it as much as possible. **[B3-A4].**

Some of the **principles** that we need to apply if we want to improve the effectiveness and efficiency of the healthcare delivery system are:

- Think globally and act locally;
- Apply a systems approach and systems thinking;
- Always see a scenario from a holistic point of view and be critical of factors influencing the current situation;
- Apply epidemiologic thinking and a re-analysis of the situation from technical, ethical, social, and economic perspectives;
- Always assess and check the situation in question and act accordingly;
- No hesitancy to make adjustments and modifications to the interventions if the health situation has changed (good or bad) due to evolving epidemiological conditions;
- There is always room for improvement;
- Always think of capacity building for different categories of staff;
- The final strength of the system is the strength of the weakest part of the system;
- Improve the administrative, logistics, and management aspects of the healthcare delivery system by conducting implementation research;
- Cutting unnecessary administrative procedures;
- Apply the planning cycle approach;
- Always think within the loop of the planning cycle. **[B2-A8].**

The performance of the healthcare delivery system depends much on the **ability and capacity of the staff** running the system. Every effort must be made to conduct capacity-building training workshops or short courses for specific groups (disciplines) of staff. All training programs must be centrally monitored and recorded properly. The certificates given at these training workshops should be used in the promotion and transfer of staff in the country. The quality of these workshops and short courses must be ensured. **[B2-A8].**

In order to promote the public health domain in the country, the **selection of a health program director** is crucial. It should be neutral, devoid of bias, and based on the candidate's level of technical expertise, administrative prowess, management ability, and working style. Selecting an appropriate and competent program director should be taken very seriously. **[B4-A4]**

The performance of the healthcare delivery system is also associated with the organogram and infrastructure of the Ministry of Health. The organogram of the health ministry should not be static, especially in developing countries. The organogram may be a perfect one at the time of development. However, **organogram reviews are needed every five years** or so because of the following conditions:

- Due to changes in disease epidemiology;
- Transformation of social fabrics;
- Directional changes in overall government policy;
- Shifting in the economic conditions of the country, either good or bad;
- Changing patterns of demand and supply of human resources for health;
- Increasing health demand from the population;
- Rapid population growth and shifting population structure;
- New developments in the field of public health;
- Rapid sophistication in many aspects of the clinical domain;
- Outbreaks of new diseases, the occurrence of emerging and re-emerging diseases, and pandemics of novel viruses of uncertain natural history;
- The emergence of advanced diagnostics and state-of-the-art treatment modalities. **[B2-A8].**

There are at least **22 key predictors or elements** that can support the good performance of the healthcare delivery system. The availability of these key predictors will guarantee that the population receives quality healthcare services. These are:

1. Realistic and contemporary strategies for priority entities in the health domain;
2. A population-friendly health literacy promotion strategy;
3. Dedicated, competent, and ethically minded human resources for health;
4. Updated SOPs and GLs on priority technical matters;
5. Well-established continuing professional development programs for various categories of health staff;
6. Dynamic and robust health information systems for various entities;
7. Updated teaching curriculums, teaching aids, and teaching methods in teaching institutions;
8. Regular capacity-building programs for faculty members of teaching institutions;
9. Dynamic, responsive, and quality research institutions;
10. A realistic, well-integrated, and doable national health plan, national health policy, and national health research policy;
11. Down-to-earth monitoring and evaluation systems for various entities;
12. Patient-centered and patient-friendly hospital system;
13. Efficient and resilient national health supply chain logistics management system;
14. A policy and strategy analysis group or think tank for the health domain;
15. Responsive public health surveillance system;
16. A balanced and equitable career ladder system for all categories of staff:
17. A good social welfare system for the staff;
18. Rational resource allocation and budgetary monitoring systems;
19. Programs for enhancing the analytical capabilities of staff;
20. Platforms for sharing information and actions;
21. Opportunities for practicing beyond-the-box thinking for the staff;
22. Staff performance assessment systems. [B4-A14].

We need to develop a well-integrated healthcare delivery system based on primary health care and principles of public health. The **role of the hospital domain is crucial** to buttressing the healthcare delivery system in the country. **[B3-A3].**

Common platforms should be created to exchange diverse experiences among health program managers, and they should be encouraged to use them on a regular basis. This could improve the effectiveness and efficiency of the healthcare delivery system. **[B3-A6].**

How many of our health programs in the healthcare delivery system are **redundant, ineffective, inefficient, or duplicative** in nature? This is the one difficult subject we need to address. In light of the current epidemiological scenario, it is important to discontinue certain health programs. **[B3-A5].**

A new approach such as **"Healthcare Delivery System Challenges Scouting Teams"** might be used to identify and address **surveillance of challenges** within the nation's healthcare delivery system on a real-time basis and be taken care of accordingly. **[B3-A1].**

The **generic key actions** to take when tackling the issues, problems, and challenges of the healthcare delivery system are:

- Identifying the issues, problems, and challenges;
- Using a set of criteria to prioritize the issues, problems, and challenges;
- Considering the cost-effectiveness of each solution or action identified;
- Conducting rapid implementation research;
- Making objective and logical decisions;
- Exploring and selecting the best possible solution or action and implementing it;
- Reviewing the performance of the healthcare delivery system after some time. **[B3 Preface].**

It is imperative that we do not undervalue the s**ignificance of creating precise job descriptions** for healthcare professionals working for the healthcare delivery system in order to effectively provide healthcare services to the general public. It has far-reaching implications in the long run, and we need to take it seriously. **[B3-A4].**

1.3 The Public Health System: A Necessity for the Advancement of Population Health

General comments. Promoting the general public health domain entails many efforts that need proactive collaboration among various stakeholders apart from the Ministry of Health. It will take time to achieve it, but it is our ultimate goal, and we have to go for it. People thought that public health was an easy subject and that anybody could handle it. As a matter of fact, it is a highly technical subject. It follows **a set of principles of public health and epidemiology**, has a very wide spectrum of activities, follows the tenets of public health ethics, and is based on strong technical rationality.

Public health experts are always at the backstage, and people do not realize the genuine and enormous power that public health experts can exert in advancing population health in the country. Many challenges in the healthcare delivery system could be overcome if we could improve the work of the public health infrastructure and domain. The public domain could be aptly called the prime mover of the whole healthcare delivery system. It is also complementary to the clinical domain. **The public health system and population health are highly correlated. [B1-Part A-A1] [B3-A5].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Public health is not a simple and straight-forward domain. It is reciprocally connected with several socio-behavioral activities, which are different not only from one population group to another but also in different geographical areas. These socio-behavioral activities are also influenced by the socioeconomic conditions of the country, which are beyond the control of the Ministry of Health. Therefore, when a particular health situation is observed, every aspect leading to that situation should be scrutinized from all angles and analyzed deeply before a public health decision is made. **[B2-A2].**

A public health program, once established, will be there for many years. Each program, therefore, needs to be **reviewed and readjusted** depending on the quantum, severity, and trend of the epidemiological situation of health problems or issues dealt with by that program. The most effective public health interventions that work well at one time might not be suitable every time. **[B3-A5].**

To become a **well-rounded public health professional**, we need to be well versed in the basic principles of public health and epidemiology, the social and cultural aspects of public health issues, and various epidemiological methods, issues, and challenges in public health in the context of public health ethics. A well-rounded public health professional is essential to leading each public health program. **[B1-Part A-A13].**

Public health professionals in developing countries need to be **forward-looking, innovative, and futuristic-thinking** all the time. They should not continue doing business as usual because socio-ecological perspectives, patterns of illness occurrence, and societal values and lifestyles are constantly evolving. **[B3-A5].**

Most people believe that the clinical domain—where many diseases are treated and cured—is more significant and important than the public health domain. Thus, it is imperative to effectively disseminate the idea of the **genuine potential of public health** to every employee of the Ministry of Health and beyond. **[B1-Part A-A2].**

The clinical domain, where many diseases are treated and cured, is generally regarded as more important than the public health domain by the general public. The **impact of the work of public health** could be seen after some time, but it is sustainable in the long run. The notion of the genuine power of public health needs to be effectively propagated to the population at large. **[B3-A5].**

Clinicians need to be put on board to **propagate public health views** on various illnesses and ailments. They need to be encouraged to discuss or educate about public health aspects of illnesses and ailments, even during bedside teachings and ward rounds. Clinicians should be actively involved in several public health initiatives. **[B3-A12].**

While public health experts work at the population level, clinicians interact with patients on an individual basis. An ounce of preventive work by public health professionals is worth several pounds of benefit. In essence, it is only through promoting the public health domain that we can achieve our goal of **a healthy population in the country.** Improvement in the field of public health is a gradual process that necessitates the methodical execution of public health initiatives in a phased and sequential fashion, involving multiple stakeholders. **[B1-Part A-A2].**

The public health domain and clinical domain are complementary. The public health domain could be aptly called the **prime mover of the entire healthcare delivery system.** A realistic and effective *modus operandi* ought to be developed so that clinicians, public health professionals, research scientists, paramedical personnel, social scientists, parliamentarians, and politicians can work together on health-related issues and general healthcare delivery system challenges nationwide on an equal footing. **[B3-A5].**

In the field of public health, the **non-uniformity of challenges itself is a challenge** to all of us. The challenges are like jigsaw puzzle pieces. They are all interconnected and related. Improving the epidemiological thinking skills and epidemiologic analysis capabilities of health professionals is one of the key prerequisites to overcoming the challenges of the healthcare delivery system. Epidemiological thinking means perceiving a scenario from different perspectives, angles, or planes and comparing it with different or similar scenarios, noting various controlling factors that contributed to the current situation. **[B3 Message to My Fellow Health Professionals] [B1-Part A-A2] [B1-Part A-A10].**

The health status of the population can only be improved if **public health interventions are realistic and up-to-date.** Therefore, a strong public health system with a good public health infrastructure should be the ultimate aim of the health ministries. A strong public health system should always be coupled with a robust and dynamic monitoring and evaluation framework based on a responsive and adaptable health information system. The importance of public health cannot be overemphasized. **[B2-Preface].**

The spectrum of public health subjects is very wide. The epidemiological situation of a disease or condition observed is the result of the interaction of several factors. Some of the factors are beyond the control of the Ministry of Health. Many social factors related to public health are also linked to the economic situation of the country concerned. In order to expose these social factors vividly, more interactions or platforms for discussions are required between health program directors, postgraduate public health students, experienced public health professionals, social scientists, senior researchers, representatives from community-based organizations, prominent local NGOs, etc. These platforms must be made available widely and regularly. **[B2-A11].**

The **culture of working together** among health institutions and entities is generally not the order of the day. They usually consider other health institutions or entities not as their counterparts but as their competitors. In the field of public health, we all need to work together to remove this notion once and for all. **[B3-A11].**

If we would really like to have **quality public health professionals,** we need to improve the teaching of public health in institutions. For a lecture session lasting an hour, didactic lectures should take 50 minutes. Ten minutes must be reserved for questions and clarifications. This is the period where postgraduate public health students can think of the following points:

- The gaps in the technical contents of the lecture topic;
- The weaknesses of the reasons given by the lecturer;
- The disjointed nature of the contents of the lecture topic, if any;
- The areas where further clarification and elaboration are required;
- The points were not clearly explained by the lecturer;
- Not raising or emphasizing the contemporary situation of importance, ground reality, etc.

The **clarification or question-and-answer sessions** can lead to a greater understanding of the topic under discussion and could also improve the lecturing ability of the lecturer. It is mutually beneficial for postgraduate public health students and faculty members. **[B2-A11].**

When it comes to carrying out public health initiatives, **synchronized coordination** is more important than a simple partnership. Even if it is easier said than done, it is something we should all aim toward. **[B3-A5].**

All public health interventions must have **built-in implementation research**. An intervention without accompanying implementation research is incomplete. **[B2-A1].**

One caveat is that we **cannot implement developed countries' tactics** in their entirety to improve the public health landscape of developing countries. It is important to consider the unique features of a country, including its overall administrative and available health infrastructure, human resources for health situations, national health policy, national health research policy, political environment, socioeconomic conditions, and customs, cultures, and habits of the people. **[B3-A25].**

We need to conduct capacity-building workshops for relevant staff to **enhance public health acumen** by way of possessing the following characteristics, i.e.,

- One must have excellent epidemiological thinking skills;
- The ability to generate futuristic or forward-looking ideas;
- Possessing an analytical and critical mindset;
- Always viewing things from holistic perspectives;
- Capable of explaining or transforming complex problems or matters into simple ones;
- Always view things from the population's perspective;
- Practicing the spirit of compromise, not dogmatism;
- Balanced and ethical decision-making;
- **Mutual respect** and understanding towards the views of other professionals;
- Genuinely showing the spirit of cooperation, etc. **[B2-A11].**

More debates and panel discussions on contemporary public health topics of interest should be conducted. These are very desirable platforms where many hidden issues, sensitive matters, and the complicated nature of the scenario can be further elaborated and noticeable. The **expansion of the knowledge horizon in the field of public health** can be effectively enhanced. This is the platform where topics for postgraduate public health dissertations or theses could be generated. The nature of the thesis topic could become realistic, contemporary, and appropriate. It will be beneficial not only to the domain of public health but also to the country. **[B2-A11].**

In order to improve the public health domain and also to **open up the intrinsic knowledge base and expose the thoughtful ideas** of postgraduate public health students, we can do many things. One of the effective approaches is the submission of **"reflection papers"** by postgraduate public health students to the concerned faculty once a month. There is no right or wrong answer to the contents of the reflection papers. So long as they can give rational and sound reasons for the ideas put forward, it is acceptable. This is an excellent platform for generating new ideas for consideration by policymakers and health program directors. The outside-the-box thinking skills of postgraduate public health students could be effectively improved. Some exemplary headings for reflection papers are:

- "If you are appointed as program manager for the expanded program for immunization, how are you going to manage and lead the program?"
- You received a message: "There was a measles outbreak last week in township "X" in Yangon Region. How are you going to investigate and control it?".
- You received a letter: "You have been promoted as Dean of the School of Public Health in a country. Outline the action points that you are going to take to improve the image as well as the quality of teaching at the School of Public Health."
- "What should be the role of the population in controlling the COVID-19 pandemic?"
- "Nurses are essential staff in hospitals." Do you agree with this statement?
- "There is an increasing trend of noncommunicable diseases occurring in the country. How would you bend the increasing trend curve?"
- Prepare talking points on "Reducing the incidence of non-communicable diseases in a developing country." **[B2-A11].**

The basic health services staff, or basic public health professionals, are the first point of contact between sick people and the healthcare delivery system. By providing quality health services to the population, we can **create confidence-building** between the population and the health staff. We, therefore, need to seriously enhance the technical acumen of basic health services staff, or basic public health professionals, as a priority. This is very desirable for strengthening future collaborative public health initiatives to be carried out in their respective geographical areas. Once we carry out successful public health initiatives in the community, the overall health status of the population could be improved, which might have a positive domino effect. **[B2-A12].**

The ultimate aim of the public health domain is to have a healthy population in the country. Every country should, therefore, try to strategize to have **a very large cohort of a healthy population**. It is not an easy task, but it is not impossible. A healthy population means a happy population, i.e., attainment of physiological, psychological, physical, and spiritual wellbeing. **[B2-A21].**

Getting a very large cohort of a healthy population in the country cannot be obtained by the actions of the Ministry of Health alone. It needs **combined and integrated efforts** by many partners, like-minded organizations, and associations. Cooperation from the population is absolutely crucial. **[B2-A21].**

Public health associations can be considered the **arms and legs of the Ministry of Health** for promoting the health status of the population in the country. They are the most significant entities in the country for advancing public health. **[B4-A13].**

The Ministry of Health should try to get **support from the public health associations** in terms of the following entities:

- Promoting general public health;
- Improving the general health of the populace;
- Reducing the frequency of disease outbreaks;
- Protecting environmental hazards;
- Preventing occupational hazards;
- Preventing and managing man-made disasters;
- Promoting healthy lifestyles;
- Enhancing the health literacy level of the population;
- Detecting an impending outbreak of communicable and zoonotic diseases;
- Reducing the incidence and prevalence of noncommunicable and chronic diseases;
- Reducing the incidence and prevalence of communicable diseases;
- Strengthening public health surveillance systems;
- Reducing the incidence of vaccine-preventable diseases;
- Supporting postgraduate teaching courses in schools of public health;
- Involving in capacity-building programs of the Ministry of Health;
- Improving quality-adjusted life years;
- Extending life expectancy at birth; etc. **[B4-A13].**

Public health approaches and epidemiologic reasoning are complementary. Practicing public health approaches without applying sound epidemiologic reasoning is doomed to fail. The program costs will be high, the impact will be less, and the sustainability of the plan or program is questionable. **[B1-Part A-A10].**

1.4. The Hospital System: Constantly Evolving

General comments. The hospital system, both private and public, plays a significant role in any healthcare delivery system. In that context, it is desirable that a composite analysis of the whole hospital system in the country be reviewed, necessary strategies formulated, and action taken accordingly. As a quick start, **assessment checklist** questions should be framed to collect the required information. Key informant interviews and focus group discussions ought to be conducted to get the required information. These are the quickest ways to know the overall scenario of the hospital system in the country.

The challenges of the hospital generally arise due to weak logistics and supply chain systems, a patchy hospital information system, and the less than desirable ethical behavior of the staff. **[B3-A17]**. The WHO and UNICEF launched the **"Baby-Friendly Hospital Initiative" (BFHI)** in 1991 to encourage breastfeeding, and we might consider doing the same with the **"Patient-Friendly Hospital Initiative" (PFHI)**. **[B4-A2].** Hospitals must also be ready to handle patients in emergency situations, such as powerful earthquakes, significant floods, and large-scale fires. All concerned medical personnel and individuals must receive training on all aspects of mass casualty management. All in all, the administrative and management acumen of the medical superintendent is key to successfully running the hospital. **[B2-A13].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

We need to be aware of the fact that **hospital management** in a developing country is quite different from hospital management in a developed country. Common issues and problems that could not be seen or thought of in the hospitals of a developed country are present in many hospitals in developing countries. Hospital directors

or medical superintendents must look forward to dealing with such a scenario. Solutions to overcome these challenges could be sought through regular meetings between hospital directors, members of the hospital management committee, hospital staff, including doctors, nurses, para-medical, and administrative staff. **Many problems arise from weaknesses in administration, management, logistics issues, and insufficient human resources. [B2-A13].**

Each hospital should have a well-functioning **"Hospital Oversight Committee"** to help solve the problems. The scenarios seen in hospitals in developing countries generally do not appear in hospital management textbooks. The solutions given in these books are also not fully applicable to solving problems in hospitals in developing countries. Hospitals at different hierarchical levels have different sets of problems. Some problems are unique to certain geographical locations. Hands-on experience is better than a textbook experience for managing hospitals in developing countries. Many **commonsense approaches** need to be applied to solve the problems faced in hospitals. **[B2-A13].**

Medical superintendents should have good management, logistics, and administrative skills, along with some technical skills on supplies and equipment and supply chain management issues, as well as knowledge of basic public health principles. It is not that easy to acquire all these skills in one go. In view of the similar nature of issues, problems, and challenges encountered in hospitals, it is highly desirable that, from time to time, we conduct **"Hospital Medical Superintendents Experience Sharing Meetings."** Collective thinking is necessary to solve problems and overcome challenges. **[B2-A13].**

There are several interventions that can reduce the number of patients admitted to hospitals as well as the number of patients coming to outpatient departments of hospitals. One of the most cost-effective interventions is to **promote the health literacy level of the population**. The level of health literacy of the population has a direct linkage with the health status of the population and also with the number of patients coming to outpatient departments and the number of inpatients. We should, therefore, accord top priority to promoting the health literacy of the population through various avenues and approaches. **[B3-A13] [B3-A12**].

To achieve patient-friendly hospitals, the **"National Strategy to Improve Patient Satisfaction"** is a necessary precondition. This national strategy must be implemented in all the hospitals in the country. This strategy is not commonly available in many developing countries. The final outcome of implementing this strategy is that patients are generally satisfied with the treatment they receive at hospitals. **[B4-A2].**

Several elements contribute to patient satisfaction with the care they receive. To the greatest extent possible, we ought to maintain, strengthen, and improve these elements. The underlying e**nabling elements for patient satisfaction as well as good hospital performance** are typically:

- Good clinical acumen, decent interpersonal communication skills, and ethical performance of the medical doctors;
- Good nursing care, decent interpersonal communication skills, and the ethical performance of the nurses and paramedical staff;
- The responsiveness of the healthcare staff towards the needs of the patients;
- Proper briefing sessions for preoperative patients;
- Good communication, management style, and administrative skills oft he hospital administrative staff;
- The presence of a welcoming hospital setting;
- Efficient electronic hospital information systems;
- Efficient health supply chain management systems for hospitals;
- A properly managed medical store depot in the hospital;
- An efficient hospital laboratory system;
- A properly staffed intensive care unit;
- A properly managed hospital blood bank;
- A properly managed hospital mortuary system;
- The level of health knowledge possessed by patients;
- The availability of updated SOPs and GLs on clinical, administrative, logistical, and management aspects of the hospital;
- Regular fumigation of operating rooms and sterilization of hospital wards;
- Correctly done sterilizing processes for medical devices and other items;
- A good and enabling environment for patients inside and outside the hospital;
- The presence of directional signs and the proper location of various wards and rooms in the hospital;
- A good waste disposal system (general, biological, radiological, laboratory, and sewage) in the hospital;

- The availability of a good laundry system, sanitary toilets, and bath facilities for patients and hospital staff;
- The availability of competent medico-social welfare personnel;
- The availability of the **"Hippocratic Oath"** banner posted in strategic locations in the hospital;
- The existence of a well-functioning hospital management committee;
- Friendly interactions between hospital staff and patients;
- The availability and accessibility of a reliable patient referral system;
- Properly managed intra-hospital ward transfer and inter-hospital transfer of patients;
- A well-organized system for patient discharge;
- Availability of an efficient ambulance system at the hospital;
- Existence of a subsidized hospital canteen and medicine shop located inside the hospital compound;
- Quick availability of hospital engineers (civil, mechanical, electrical,and electronics) and electricians for minor repair works in the hospital. **[B4-A2].**

Conducting **time and motion studies** and **implementation research on hospital administration and management systems** in crowded hospitals would yield many innovative ideas for easing the flow of patients in hospitals and improving administrative and other logistics issues. The improvements could increase patient satisfaction significantly. **[B3-A17].**

Studies on **"hospital patient satisfaction," "hospital staff satisfaction,"** and **"hospital performance assessment,"** using a checklist of questions and key informant interviews for issues of importance will yield much strategic information for overall improvements in the hospital system. **[B3-A17].**

The duty of the medical superintendent in a developing country is to **anticipate and overcome the challenges** through close consultation with the staff of the hospital in a collective way. In fact, medical superintendents should be all-rounders. They have to handle the below-mentioned points to the best of their capacity and capability.

- Hospitals are not constructed as per the **standard hospital blueprint for a particular type of hospital**, resulting in disruption of the normal flow pattern of patients. The location of service units in the hospital is not in proper order

and negatively affects the smooth movement of patients. There is an unnecessary delay in giving emergency treatment to patients, creating stressful conditions for the patients and attendants. It takes more time to reach the radio-imaging, laboratory, radiotherapy, radiography, physiotherapy, ultrasound units, etc.

- Hospitals are generally not run by full staff strength. Hospital workers are overworked, which could lead to clinical errors and unnecessary stress for them.
- Hospital environmental sanitation is not properly maintained to revent the spread of many gastrointestinal diseases, rodent-borne diseases, and mosquito-borne diseases. It could result in disease outbreaks and overwhelm hospital beds.
- Hospital building codes are not properly followed. Wear and tear can happen prematurely. Approval to repair the damaged parts of the hospital building may take months.
- There is no strict control over the number of attendants allowed for each patient. It could result in many unwanted situations, such as the spread of infectious diseases, including respiratory tract infections and nosocomial infections. Patient attendants are not abiding by the set time to see patients.
- The water supply system, garbage disposal system, hospital waste disposal system, and sewage disposal system are not functioning perfectly. Blockages of pipelines are commonly seen. This could result in unbearable conditions and disease outbreaks. Improper or sub-standard hospital waste disposal is a very serious matter with unacceptable consequences. There is no fire alarm or water sprinkler system, even in big hospitals.
- The electricity supply in many hospitals is erratic. The voltage is also fluctuating widely, resulting in frequent breakdowns of electrical equipment. Some breakdowns could result in catastrophic consequences. The lighting system is generally not optimized.
- Very few hospitals have complete hospital management information systems. The hospital record section is generally understaffed. An unnecessary delay in the management of patients could happen. It would be difficult to know the trend of morbidity and mortality of the diseases and the trend of cases taken care of by the hospital. The planning process for the hospital domain will be badly affected.
- Blood transfusion services are not up to par. It could result in unnecessary suffering for the patients.
- There is always a shortage of medicine, laboratory equipment, consumable items, supplies, equipment, etc.
- Frequent breakdowns of laboratory equipment, radiology, radiotherapy, and physical therapy machines are due to voltage fluctuations. The clinical course of the patient may be negatively affected.

- SOPs and GLs on administrative and treatment protocols are not up-to-date and sometimes not available. Patient safety may be badly affected.
- Proper arrow signs for the location of various wards and service units are not always seen. Unnecessary confusion for the patient is not good.
- Rooms for resting hospital staff are not enough. This could create unnecessary stress and strain on the hospital staff. The work efficiency of the staff could be decreased.
- The number of patients admitted is higher than the sanctioned beds. This could result in an increasing number of nosocomial infections and overburden the hospital staff.
- Disinfection of the hospitals is not commonly practiced due to a lack of funds. Serious disease outbreaks can happen.
- Patients do not bother with the cleanliness inside the hospital, and they never follow the responsibilities of patients or their attendance posted on the walls of the hospital. More nosocomial infections can happen.
- Not all hospitals have medicine and supply shops. A lot of inconveniences can happen, especially during the night.
- Complaints from patients are very common. Suggestion letter boxes from patients are not available in most hospitals.
- The ambulance cars are not properly maintained, and there are no logbooks on their use, etc. Frequent breakdowns are not uncommon. Resuscitation equipment sets are not complete. Staff to handle resuscitation equipment inside the ambulance are not available or are not properly trained. **[B2-A13].**

The following **stopgap measures** should be considered to ease the challenges and improve the hospital system in a developing country: (The list is not in order of priority and is also not exhaustive.)

- Promoting public-private hospital partnerships;
- Conducting capacity-building training workshops and courses for all professionals working in clinical disciplines;
- Promoting high-impact public health interventions for common diseases;
- Reviewing and streamlining the career ladder of hospital staff;
- Reviewing and improving the job descriptions of hospital staff;
- Providing the required medical and diagnostic equipment to hospitals;

- Strengthening the hospital supply chain management system;
- Streamlining the duty roster of hospital staff;
- Awarding prizes or recognition for outstanding performers in the hospital;
- Improving the overall working atmosphere for staff in the hospital;
- Improving various waste disposal systems in the hospital;
- Improving the bath and toilet facilities in the hospital;
- Improving and streamlining the canteen and drug dispensary systems in the hospital;
- Fulfilling the social requirements or welfare of the hospital staff;
- Enhancing the role of medico-social workers and counselors;
- Reducing the price of medicines, diagnostics, and machines for treating common diseases;
- Establishing a consultation committee for medical tourism;
- Enhancing the hospitals' appearance, hygiene, and cleanliness;
- Establishing pay rooms and wards in large hospitals;
- Strengthening the hospital management committee. **[B3-A24].**

It is advisable to appoint a medical doctor holding an MPH degree, or a**n epidemiologist in every large hospital**, to manage and analyze all data available in the hospital management information system. **[B4-A12].**

Large hospitals or medical centers should set up **"On Discharge Information Dissemination Units"** where clinicians can conduct group discussions and distribute pre-made printed discharge information pamphlets on common medical conditions. Given that the patients are in a receptive mode, it will be the best moment to provide health education. **[B4 A2].**

We need to give undivided attention to the challenges emanating from the hospital domain, as hospitals are dealing with the lives of patients. Here, the **time factor is critical.** It is worthwhile to have a small team in each hospital to monitor the challenges, if any. The challenges should be reported directly to the hospital director or medical superintendent of the hospital for urgent attention and action. **[B3-A17].**

To improve the hospital system holistically or reduce the challenges encountered in hospitals, we must **review and improve hospital sub-systems,** including: outpatient department system; emergency or casualty department system; laboratory system; information and patient record system; imaging system; chemotherapy and radiotherapy system; blood transfusion and blood safety system; physical medicine and physiotherapy system; patient education giving or health literacy promotion system; on discharge information dissemination system to patients and their attendants; paging system for hospital staff; operation room system and its affiliated system; post-op and rehabilitation system; sewage and biological waste disposal system including biohazard waste disposal system; water supply system; laundry system; in-house catering system for staff, patients, and visitors; hospital environmental sanitation system; referral and discharge system; building management and maintenance system; information communication system; logistics and supply management system; drug warehouse management system; car parking system for staff and patients; security system; duty roster system for all categories of staff; medicine shop system in the hospital; social welfare system for staff; mortuary management; patient reception system; patient complaint system; etc. Each system should be dealt with by the **"Hospital Management Committee."** It is better to review these systems **using a checklist of questions** so that the existing situation can be elicited in a short time. **[B3-A17].**

1.5. The Disease Control System: Always Needing Epidemiological Adjustment

General comments. The strength of the disease control system depends on the **resilience and responsiveness of the disease surveillance system,** including the sentinel disease surveillance system. Public health surveillance systems, which are more comprehensive, are complementary to disease surveillance systems. Frequent outbreaks and epidemics of diseases throughout the country are indicative of shortcomings in the country's disease surveillance system. The disease control system is dichotomized into communicable and noncommunicable diseases. The strategies for each domain are different, as is the time of impact obtained.

A communicable disease control system should be highly responsive and robust, as the spread of communicable diseases is far faster than that of noncommunicable diseases. As several players are involved in noncommunicable disease prevention and control, multisectoral, multifaceted, multidisciplinary, multidimensional, and multipronged approaches are therefore required. The presence of **"National Strategy for Noncommunicable Disease Prevention and Control"** that are practical, attainable, and feasible affects the effectiveness of noncommunicable disease prevention and control. It is preferable that strategies allow for the proactive participation of each player. It is epidemiologically significant from a control standpoint that noncommunicable disease epidemics may linger longer, and several coordinated efforts are needed to unearth hidden cases and halt the momentum of the spread or trajectory of NCD epidemics in the country. The ministries of health, education, and information must work closely together to improve health literacy in terms of awareness of communicable and noncommunicable disease prevention and control interventions. **[B4-A3].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

We should try to look for a **full-fledged epidemiologist** to serve as Director of Communicable Diseases, which is part of the overall disease control system. That person should have at least the following characteristics, as much as possible:

- Possessing holistic and forward-looking viewpoints;
- Exercising balanced reasoning;

- Being capable of making logical and unbiased decisions on program management;
- Having a sense of team-building spirit;
- Having a positive and optimistic attitude;
- Possessing administrative and management skills;
- Being conversant in the complex epidemiology of communicable diseases;
- Being research-minded;
- Following the principles of public health ethics. **[B3-A27]**.

It is essential that the director of communicable disease control be capable of giving **sound technical guidance** to the staff to deal with issues and challenges that can arise in the prevention and management of communicable diseases. The director must cleverly plan to achieve the following:

- Lowering the incidence and prevalence of disease "X" in question;
- Bending disease "X" morbidity and mortality trend curves to an acceptable level;
- Controlling and containing disease "X" outbreaks;
- Raising the population's disease "X" literacy level using a variety of interventions;
- Collaborating closely with other disease control program directors;
- Sharing data and information about the disease "X" control program with other pertinent programs;
- Conducting various types of training courses for disease "X" program staff working at all levels of the healthcare delivery system;
- Doing planning and budgeting for the program for subsequent years;
- Ensuring that all decisions are ethical in nature and adhere to the principles of public health ethics, medical ethics, and other relevant ethical standards;
- Consideration for the social welfare and career ladder of the staff as much as possible;
- Conducting annual evaluation meetings or workshops for the disease "X" program;
- Ensuring that the program's information system is technically sound, robust, integrated, and responsive;
- Adjusting and fine-tuning the program's parameters and indicators;
- Issuing a regular newsletter so that the staff are up-to-date about disease "X";
- Making the disease "X" surveillance system effective and efficient;
- Reviewing the policy and strategy for the program as and when necessary;
- Conducting staff satisfaction surveys as well as population satisfaction surveys;
- Regular communication with like-minded UN agencies, organizations, community-based associations, INGOs, and NGOs;

- Encouraging teamwork and a collaborative approach among the staff;
- Doing research projects related to the work of the program;
- Striving to be a capable and impartial leader for the program;
- Exploring external funding support for the program;
- Analyzing the program's resource flow;
- Reviewing and improving the job descriptions of the staff, etc. **[B3-A27]**

In many countries, noncommunicable diseases contribute significantly to both overall morbidity and mortality and premature mortality. Noncommunicable diseases have a negative impact on the population's **"Quality-Adjusted Life Years" (QALYs)**. Therefore, a highly qualified, experienced, and knowledgeable individual must be in charge of the nation's noncommunicable disease prevention and control program. Since there are numerous stakeholders involved in noncommunicable disease prevention and control, the individual in charge should be very good at coordinating and working as a team. **[B4-A3].**

It is worth noting that the director of noncommunicable disease prevention and control has considerably different responsibilities than the director of communicable disease prevention and control from several perspectives. The **importance of collaborative networks** in noncommunicable disease prevention and control is enormous. The networks' coordinated efforts are crucial for lowering noncommunicable disease incidence and prevalence. In addition to spreading more slowly than epidemics of communicable diseases, epidemics of noncommunicable diseases frequently include a sizable number of unreported or hidden cases. All these points need to be considered when running disease control programs. **[B4-A3].**

Apart from technical and management savviness, the degree of **spirit of collaboration** exhibited by the director for noncommunicable diseases largely determines the success of the program. **[B4-A3].**

The **"National Strategy for Prevention and Control of Noncommunicable Diseases"** ought to go hand in hand with the **"National Strategy for Promoting the Health Literacy Level of the Population." [B4-A3].**

Noncommunicable diseases are **complex in their occurrence.** We need to work collaboratively with many entities for noncommunicable disease prevention and control. **Partnerships** with the following departments, associations, institutions, and organizations should be established firmly. These are: ministries of education and information, including radio and television stations; food and drug administration agency; department of customs; department of internal revenue; border control authorities; restaurant and hotel associations; department of trade and commerce; consumer unions and the department of consumer affairs; wholesale markets and large supermarkets; nutrition division, the food safety division, and the health literacy promotion division of the department of health; health program directors of the Ministry of Health; department of medical research and research institutions; teaching institutions such as the schools of public health, community health, pharmacy, traditional medicine, medical technology, nursing, dental medicine, and medicine; community-based organizations; local non-governmental organizations; local sports and physical associations; tinned food, general food, and beverage production industries; local elderly groups; association of journalists and writers; medical, nursing, and midwifery associations; etc. **[B4-A3].**

The participation of the populace is essential to lowering the incidence and prevalence of noncommunicable diseases. It is essential to review the existing **"National Strategy for Noncommunicable Disease Prevention and Control"** to ensure that they are consistent with the existing scenarios. The strategies should be realistic and cost-effective. It is to be noted that **strategies are not static**. Depending on the changing epidemiological situation of noncommunicable diseases, modification, reinforcement, or adjustment of the existing noncommunicable disease control strategies, together with interventions, is necessary. **[B4-A3].**

Sound public policies or health public policy from other ministries are also essential. It could facilitate and make it much easier to carry out the health ministry's NCD prevention and control initiatives.

The **national NCD strategies** must at least mention and address the following issues:

1. In order to promote and practice healthy lifestyles and engage in physical exercise at a young age, close collaboration between the ministries of sports, education, and youth affairs, regional organizations, and local groups participating in sports activities is essential. Sports activities can only be held at schools, colleges, and universities with the cooperation of the ministry of education and the aforementioned institutions;
2. The ministries of health, education, and information must work closely together to improve health literacy in terms of awareness of NCD preventative and control interventions;
3. Effective collaboration with relevant ministries and industry is vital when discussing issues with tobacco, tobacco products, and alcohol;
4. School health teams should be reinforced to effectively carry out school health education initiatives and health examinations of students. It is advisable to institutionalize early detection of NCDs in schools, colleges, and universities;
5. Addressing the underlying causes of NCDs by lowering risk factors for NCDs, particularly (i) habitual consumption of unhealthy diets, (ii) taking excessively sweetened beverages, (iii) regular consumption of salty foods frequently, (iv) excessive alcohol drinking, (v) habitual cigarette smoking, (vi) regular tobacco leaf chewing, and (vii) physical inactivity. These activities can be facilitated by reducing or restricting the marketing or importing of unhealthy food, beverages, etc., and by increasing taxation on tobacco products, alcohol, and unhealthy beverages;
6. Workable solutions to deal with behavioral, social, and environmental factors leading to NCDs should be incorporated into the strategy;
7. Clearly defined, realistic strategies for effective stakeholder engagement in the prevention and control of NCDs are required;
8. If there are strong indications, provisions should be made for screening some of the NCDs in certain geographical locations;
9. Diagnosis and primary care for NCDs (diabetes and cardiovascular diseases, including hypertension) should be made available at the lowest level of health institutions in rural areas;
10. Updating the health ministry's websites with information about NCD prevention, early detection, and risks;
11. Conducting capacity-building training courses for staff working in the NCD prevention and control program;
12. Mechanisms for enhancing data analysis skills for staff of the NCD prevention and control program;
13. *Modus operandi* for fine-tuning the information systems for NCDs;

14. Country-wide systems and mechanisms for early detection of NCDs;
15. Expected role of private practitioners and private hospitals for prevention and control of NCDs;
16. Strengthening rehabilitation programs in hospitals and national rehabilitation facilities for patients with NCDs;
17. Strengthening the national registry systems for cancer, diabetes, and other chronic diseases;
18. Establishing a firm system for conducting implementationresearch concerning NCDs;
19. Establishing practical mechanisms for effective collaboration with external entities, especially INGOs dealing with NCD;
20. Establishing mechanisms for effective collaboration between the NCD prevention and control program and other relevant health programs in the health ministry.

The health ministry should provide the noncommunicable disease prevention and control program with the **highest funding** possible because:

- It will have long-term favorable impacts on the population;
- It has a high cost-benefit ratio;
- It is possible to significantly lessen the social and financial burden on the families of patients suffering from noncommunicable diseases;
- It might lead to a rise in seniors' **QALYs**, which would have a lot of advantageous impacts. **[B4-A3].**

The **following health programs should be promoted** to supplement the main noncommunicable disease prevention and control program:

- Preventive Cardiology Program;
- Health Literacy Promotion Program;
- Health Promoting Schools Program;
- Elderly Healthcare Program;
- Cancer Cervix Screening Program;
- Diabetes Screening Program;
- Occupational Hazards Reduction Program;
- Mental Health Promotion Program;
- Community Health Clinics for Early Detection of Noncommunicable Diseases. **[B4-A3].**

The **behavior of friends and family members** has a big impact on a person's healthy lifestyle. The reduction of the incidence of noncommunicable and chronic diseases in older age groups should be our aim. In order to promote and practice healthy lifestyles and engage in physical exercise at a young age, close collaboration between the ministries of sports, education, and youth affairs, regional organizations, and local groups participating in sports activities is essential. Sports activities can only be held at schools, colleges, and universities with the cooperation of the Ministry of Education and the aforementioned institutions. **[B4-A3].**

NB. The issues pertaining to the disease control system are numerous. Please see the discussion points related to the disease control system in (i) Enhancing the Work Efficiency of the Director of Communicable Disease Control **[B3-A27];** (ii) Be Prepared to Tackle Future Pandemics **[B3-A14];** (iii) Enhancing the Performance of the Noncommunicable Disease Control Director **[B3-A3];** (iv) Principles and Steps for Managing an Epidemic/Pandemic **[B2-A4];** (v) Preparedness for Future Waves of COVID-19 **[B2-A5];** (vi) Viewpoint: Disease Surveillance System **[B2-A18].**

1.6. The Health Information System: The Gatekeepers

General comments. Health information system networks are analogous to the central nervous system of the human body. The central nervous system that exists in humans allows for excellent synchronization and coordination of bodily operations. In a similar vein, the optimal performance of the health information system can significantly improve the effectiveness and efficiency of the healthcare delivery system. As such, it is imperative that we **constantly improve the resilience and responsiveness of our health information system.** We must use every resource possible to strengthen the health information system, which is the backbone of healthcare delivery. **[B3-A8]**.

In this **data-driven society**, all of our judgements should be founded on solid and trustworthy data. Modern data science is developing very quickly, and we need to keep up with the pace of development. **[B4-A11]**. Data as such has no utility unless it is transformed into information for action. It is crucial that we carefully consider how to best use this vast amount of data to our benefit. **[B4-A12]**. Data culture among staff working for the healthcare delivery system needs to be inculcated very strongly by way of applying various approaches.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

In general, transforming data into information is not encouraged and is not regarded as a top priority. We are like sailors navigating a ship without a rudder if we do not convert data into information. The use of a **two-way information feedback mechanism** is uncommon. Having a functional two-way data flow and feedback mechanism is the most desirable feature of the health information system. A similar line of thinking can be applied in the disease surveillance system. **[B3-A8].**

Information is power. We need to translate available data into information for use for multiple purposes. Certificated **"Training Courses on Transforming Data into Information"** should be regularly conducted for different categories of health workers. **[B1-Part A-A20].**

The sharing of relevant data and information among various public health programs is not commonly practiced. The **creation of innovative platforms** to achieve this effect would be a great advantage to all public health programs. **[B3-A5].**

The health information system of the country can be equated to the **nervous system of the human body.** The human body cannot function properly unless the nervous system is transmitting appropriate electrical impulses through the medium of different chemicals and enzymes in the human body. Likewise, the proper and systematic functioning of the health information system requires good linkages and coordination of its components, starting from data collection forms and data gatherers at the peripheral level of the health system to strategic decision-makers of the Ministry of Health. **[B1-Part A-A12]**. Data flow to the central level is commonly there, but feedback down to the implementation level is not very strong and regular. The information nodal points of the health information systems are not well connected and are sometimes disjointed. **[B3-A8].**

The health information system has **several sub-systems**. As much as possible and also depending on resource availability, we need to improve the following hospital information management system and its sub-systems in a step-by-step manner. These are (The utility of each sub-system is discussed in detail in **[B4-A12]**):

- Emergency Room Management Information System **(ER-MIS);**
- Patient Registry Information System **(PR-MIS);**
- Hospital Research Information Management System **(HR-MIS);**
- Laboratory Management Information System **(L-MIS);**
- Morbidity and Mortality Management Information System **(MM-MIS);**
- Human Resources Management Information System **(HR-MIS);**
- Operating Room Management Information System **(OR-MIS);**
- Supplies and Equipment Maintenance and Management Information System **(SEM-MIS);**
- Health Supply Chain Management Information System **(HSC-MIS);**
- Budget and Financial Management Information System **(BF-MIS);**
- Diagnostic and Radio-Imaging Management Information System **(DR-MIS);**
- Rehabilitation and Physiotherapy Management Information System **(RP-MIS);**
- Cancer Registry Management Information System **(CR-MIS);**
- Hospital Building Maintenance Management Information System **(HBM-MIS);**
- Staff Social Welfare Management Information System **(SSW-MIS);**
- Mortuary Information Management Information System **(MI-MIS).**

We should promote quick health information dissemination sessions in **outreach immunization services.** Health knowledge enhancement talks should be given on topics such as common childhood diseases, multiple benefits of immunization, dangers of vaccine hesitancy, malnutrition, nutrition information, the normal growth pattern of children, personal hygiene, environmental sanitation, worm infestation, infectious disease transmission, etc. **[B2-A9].**

Public health-related data and hospital-related data are the two main categories of data in the health domain. There are several key data sources channeled into the health information system of the health domain. The data base is so huge that we need to have many staff (epidemiologists, public health professionals, and biostatisticians) who could be able to analyze it for appropriate feedback to respective program directors. If we can have this work done effectively and efficiently, our healthcare delivery system can serve the population effectively. The data are coming from the following entities:

- Research information system;
- Routine health information system;
- Hospital system;
- Disease registry system;
- Routine and sentinel surveillance systems;
- Epidemic and pandemic event data monitoring system;
- Food and drug administration system;
- Traditional medicine system;
- Occupational health promotion system;
- Human resources for the health domain;
- Teaching institutions;
- Health systems;
- Disease prevention and control programs;
- Natural and man-made disaster prevention and control programs;
- Surveys and studies; etc. **[B4-A12]**

An **efficient health information system per se is not sufficient** unless data sets are appropriately transformed into information by competent staff and actions are taken by concerned program managers. Generated information must be utilized for decision-making in the technical, administrative, logistics, and management aspects of health program at different levels of the healthcare delivery system. **[B1-Part A-A12]**

The following topics should be discussed in a variety of forums or platforms to aid health professionals in better **understanding the value of data** and honing their analytical skills:

- "The need for valid, timely, and dependable data for outbreak control"
- "How can we extract information from the massive amounts of data we have?"
- "Creating information for decision-making from hospital data"
- "Developing cognitive abilities in epidemiology"
- "Thinking creatively beyond the box"
- "Turning data into intelligence"
- "Rational decision-making in the public health and clinical domains"
- "Enhancing data presentation skills"
- "Becoming a good epidemiologist"
- "Public health ethics and informed decision-making"
- "Is there a limit to beyond-the-box thinking?"
- "Management techniques for solving administrative issues"
- "Utilization of data for health planning and policy making"
- "Data: an ultimate input for logical decision-making" **[B4-A11]**

Generally, there is plenty of data, or even **data overflow,** in many health information systems in developing countries. However, the analytical capacity and inference-drawing capability of staff are not up to par. **[B3-A8]**.

The use of data in the formulation of strategies for health programs is not commonly practiced and emphasized. Many similar health management information sub-systems are also not tightly linked. As the information systems are using different types of software, there is an issue with doing **composite analysis on a real-time basis. [B3-A8].**

Health information systems are the **lifeline of the healthcare delivery system**, and we have to invigorate them as a matter of priority. This notion must be ingrained in the minds of the directors of health programs in the country. The healthcare delivery system will be robust, dynamic, and responsive if the health information systems are well consolidated and functioning smoothly. **[B3-A8].**

The following are considered **priority information systems:**

- Hospital information system;
- Hospital laboratory information system;
- Research information system;
- Immunization information system;
- A communicable and noncommunicable disease information system;
- Health supply chain management information system;
- Cancer registry information system;
- Information system for promoting health literacy;
- Information systems for public health surveillance, disease surveillance,and sentinel disease surveillance;
- Information system for the food and drug administration;
- Information system for human resources for health;
- Information system for the national health account;
- Resource flow information system;
- Information system for undergraduate and postgraduate medical, nursing, and paramedical students' admission and graduation;
- Information system for health institutions;
- Information system for epidemic outbreaks;
- Information system for case studies and the thesis registry. **[B3-A8].**

The health information system in developing countries has a **huge amount of data**. If these data are not transformed into information in time, it can be justifiably equated to an absence of data. The utility of data can be dramatically increased, and the value of data becomes very high if we know how to appropriately transform it into information. **[B1-Part A-A20].**

Data and information sharing among relevant units, divisions, or departments should be promoted. Many challenges can be resolved with this data- and information-sharing culture. We need to define the connotation of **data culture** as that of **research culture.** A technical session on how to promote data and information culture should be conducted, and the outcome of the session should be widely disseminated and promoted on a continuous basis. **[B3-A6].**

Due to several reasons, the use of **computerized information systems** is not widespread in the healthcare delivery systems of developing countries. In the curriculum of degree courses run by health institutions, schools, and universities, the teaching of basic computer skills and the utility of different data software should be included. We should educate health staff on the utility of computerized information systems by conducting workshops and seminars. **[B3-A21].**

The **establishment of computerized health information systems** can facilitate the following areas:

- Predicting disease outbreaks and man-made disasters;
- Identification and projection of the trajectory of an epidemic;
- Timely and correct procurement of needed supplies and equipment for health institutions;
- Timely transfer or posting of staff in vacant posts;
- Estimation of the number of postgraduates in different disciplines;
- Estimation of the number of medical doctors, dental surgeons,nurses, paramedical staff, and basic health services staff;
- Yearly estimation of the quantity of various vaccines required for the expanded program of immunization;
- Computation of the morbidity and mortality rates of different diseases for proper planning and resource allocation;
- Rational budget allocation for different health programs;
- Elicitation of a geographical distribution pattern of diseases for planning and resource allocation;
- How overall health planning for the country and individual health programs can be made rationally and objectively;
- How effectively can we deal with UN agencies, organizations, INGOs, and development partners?
- Preparation of reports and returns;
- Reduction in the workload of staff. **[B3-A21]**.

1.7. The Health Finance and Budget System: Extensive Scrutiny Required

General comments. The management of health finances and budgets plays a significant role in determining how well health programs operate and meet their individual goals. It is important to do the resource flow analysis on a regular basis to ensure that programs that require additional funding will receive it. It is common to observe that certain health programs that are prioritized above others do not receive the necessary funding. Health professionals are typically **less knowledgeable about financial and budgetary issues** because they are more likely to be interested in technical matters. It should be routine

practice to provide some of the relevant health personnel with in-service orientation training on budgetary matters. It is also necessary to update and thoroughly review the national health account.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

We need to do **resource flow analysis** for different health programs in order to highlight the rational or irrational distribution of resources to different health programs. In order to have a notion of **value for money**, there is a need to always update the national health account, which could serve as an important input to the health planning process in the country. **[B3-A16].**

Rational resource allocation, effective resource utilization, and resource monitoring are not seriously taken care of by senior officials of the health ministry. The resource flow analysis of various health programs is rarely conducted. A critical analysis of the budgetary aspects of health programs will expose many beneficial effects as well as several weak points in health programs. Responsible health staff need training on the general perspective of budgetary review and analysis of health programs. The **principles of public health ethics** are generally not applied in resource allocation. **[B3-A5].**

Are we properly, rationally, and appropriately allocating our limited resources to various health programs? The **composite review** of all program evaluation reports for the previous three or four years will reveal critical and contentious issues regarding resource allocation. [**B3-A16].**

The staff of the health ministry are not realizing the fact that **budgetary issues are equally as important as the implementation of program activities.** When we develop health programs, serious discussions are generally held to identify program activities and formulate the objectives of the program. However, less attention was given to the funding aspects of the program activities. This notion must be changed. **[B3-A16].**

There should be a **mandatory annual review of the budget** allocated to different health programs in the clinical domain and the public health domain. The challenges of the healthcare delivery system may arise because programs that need more budget are receiving less, and programs that need less budget are getting more. **[B3-A16].**

An ethical dimension is involved in budget allocation. There is always a tug-of-war between the budget requirements of various health programs. There is a contentious ethical issue to consider, i.e., **the benefit to the population and the benefit to the individual patient**, when we are allocating budgets to health programs. Therefore, although it is difficult, we have to abide by the principles of public health ethics when allocating budgets to health programs. **[B3-A16].**

The technical professionals are **more interested in the technical aspects** of their programs. We need to promote the importance of budgetary allocation and utilization issues by conducting several workshops, meetings, or seminars so that more attention will be given by health staff to issues relevant to budget or monetary aspects. Many small challenges could disappear through proper budget allocation. **[B3-A16].**

It would be a great advantage if **"Health Budget Utilization Monitoring Groups"** were formed at various levels of the healthcare delivery system with specific terms of reference. Many budgetary wastes can be exposed, and appropriate improvements can be made. **[B3-A16].**

1.8. The Surveillance System: Crucial for Prompt Interventions

General comments. The performance efficiency or effectiveness of the disease control system in the country is as strong as the disease surveillance system in the country. The disease surveillance systems act as the **health ministry's eyes and ear**s. Both the eyes and ears should be functioning normally and must be totally unobstructed. Depending on our eyesight, we may need to wear spectacles (hyperopia or myopia), and sometimes we may need to use binoculars. The analogy is that the disease surveillance system may need added support and fine-tuning as the system and disease occurrence patterns are constantly evolving. **[B2-A18].** Nowadays, apart from the specific disease surveillance system, public health surveillance and an event-based surveillance system are becoming popular.

The success of the disease surveillance systems is also dependent on the **health literacy level of the population**. The people should be aware of common signs and symptoms of diseases prevailing in the area. Every effort should be exercised to increase the health literacy level of the population. **[B3-A26].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

If we want to increase the **efficiency and efficacy of the disease surveillance system** (communicable as well as noncommunicable), we need to take into account the following factors:

- Capacity and capabilities of data gatherers;
- Data collection forms currently in use;
- The data transmission system;
- Data collection, data collation, and data analysis system;
- Data analytical capacity and capability of staff working at the district, provisional, regional, and central levels;
- A two-way feedback system downstream to the health centers and upstream to the central level;
- User-friendly computerized information system;
- Proactive interest and involvement of the responsible staff of the concerned programs. **[B3-A26].**

Noncommunicable disease surveillance is generally not fully developed in most countries. It is equally important, if not more, than communicable disease surveillance, as their negative impact on population health is long-term and sometimes irreversible. They will also reduce the **"Quality-Adjusted Life Years" (QALY) of the populace. [B3-A26].**

We should aim for having a **solid and responsive disease surveillance system** to obtain the following benefits:

- Prevent or reduce the frequency of disease outbreaks;
- Be able to control epidemics of diseases at an early stage;
- Save thousands of dollars in the health budget;
- The social fabric or social life of the communities would not be disrupted;
- The population's morbidity and mortality would decrease;
- The financial aspects of the families would not be affected;
- Children's education and adults' work would not be disturbed;
- The long-term general effects of diseases, if any, would not be felt;
- Rational planning for the prevention and control of communicable and noncommunicable diseases can be properly done. **[B3-A26].**

The stronger the **public health surveillance systems**, the better will be the performance of the healthcare delivery systems. It includes at least surveillance systems for communicable and noncommunicable diseases; uncommon and emerging public health problems; zoonotic diseases; man-made and natural disasters; occupational hazards and diseases; accidents; health staff performance; hospital performance; population viewpoints on health and healthcare delivery systems; human resources in health; teaching institutions; interactions between the health ministry and external partners, including INGOs and UN agencies, etc. **[B4-A15]**

The disease surveillance system will expose **potential threats to population health** in advance, and remedial actions could be taken in time by responsible health authorities. The stronger the disease surveillance system, the higher the chance of detecting impending outbreaks. It will also show the trend of the disease under surveillance so that we can take the necessary preparatory actions to reduce the quantum and spread of the disease under surveillance. It, therefore, follows the public health principle that **prevention is better than cure. [B2-A18].**

The work of the disease surveillance system must always be monitored by an **oversight team** to make the system responsive, robust, and useful to the disease control and public health domains of the country. The oversight team should at least be composed of epidemiologists, public health professionals, health information specialists, computer programmers, social scientists, anthropologists, ecologists, ethicists, microbiologists, virologists, laboratory scientists, research scientists, data analysts, biostatisticians, administrators, basic health service professionals, representatives from the public health association and general practitioner society, etc. The oversight team should meet at least once every six months. **[B2-A18].**

In the domain of communicable disease prevention and control, surveillance is the **core activity** to which we need to give priority. Without a proper and well-functioning disease surveillance system, we will never achieve our goal of preventing and controlling disease, condition, event, or outbreak. **[B2-A18].**

The main challenge for developing countries is how to get **data and information from private clinics and private hospitals.** This is very critical. We cannot afford to miss that component. Provisions should be made to get the surveillance data from them. **[B2-A18].**

If we use the term **"public health surveillance,"** the domain will even become much wider. Before we set up the public health surveillance system, we need to have thorough brainstorming sessions among public health professionals, policymakers, clinicians, laboratory technicians, epidemiologists, social scientists, anthropologists, politicians, program managers of various health programs, and health administrators to work out the objectives, framework of the system, and modus operandi. Officials from relevant ministries such as hotel and tourism, immigration and border affairs, religion, education, industries, home affairs, etc. should be involved. It would be a **very big undertaking**, but we should go for it in a **step-wise and phase-wise way. [B2-A18].**

There are several definitions of public health surveillance. The WHO (2012) defined public health surveillance as follows: **"Public health surveillance is the continuous, systematic collection, analysis, and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice." [B4-A15].**

We should review and improve the overall framework, infrastructure, method of operation, networking, and monitoring portions of the various surveillance systems in the country. Information obtained from the review requires special consideration. **A technical team with broad authority** should be established to provide overall policy and strategic direction for the improvement of the surveillance systems in the country. **[B4-A15]**

There are various types of surveillance systems existing in the country. Depending on its importance in the context of the health scenario in the country, we need to give special attention to improving it. The **commonly available surveillance systems** are:

- Surveillance systems for communicable and noncommunicable diseases;
- Surveillance systems for uncommon and emerging public health problems;
- Surveillance systems for zoonotic diseases;
- Surveillance systems for man-made and natural disasters;
- Surveillance systems for occupational hazards and diseases;
- Surveillance systems for accidents;
- Surveillance systems for health staff performance;
- Surveillance systems for hospital performance;
- Surveillance systems for population viewpoints on health and healthcare delivery systems;
- Surveillance systems for human resources in health;
- Surveillance systems for teaching institutions;
- Surveillance systems for interactions between the health ministry and external partners, including INGOs and UN agencies, etc. **[B4-A15]**

As long as the data and information generated by the surveillance systems are properly analyzed and used, our healthcare delivery system will be strong. It is **impossible to design flawless surveillance systems all at once**. The system's components need to be adjusted and changed to reflect shifting epidemiological conditions and other relevant factors. **The systems are continuously in a dynamic state**. Be that as it may, we should make an effort to have surveillance systems that are at least **functionally adequate** for the country. **[B4-A15].**

Each surveillance system should have a **sentinel surveillance system**. In order to receive early warning information, a **"Multidisciplinary Technical Support Group for Surveillance Systems"** made up of public health experts, epidemiologists, social scientists, physicians, veterinarians, nurses, human resource specialists or educationists, environmental health specialists, laboratorians, ecologists, information communication specialists, biostatisticians, microbiologists, virologists, occupational medicine physicians, occupational health psychologists, industrial hygienists, research scientists, etc., should be formed. The group should create a fundamental, and generic framework for a surveillance system in order to make it more effective and efficient. The personnel in the respective specific technical area of work should make additional fine-tuning and modifications. **[B4-A15].**

The population's degree of health literacy is one of the key determinants of having a robust, sustainable, and dynamic disease surveillance system in the country. The weak disease surveillance system in the country will also result in repeated outbreaks of diseases. Last but not least, it is safe to draw the following conclusions: **Information is power** and **available data should be translated into information for use for multiple purposes.** Strong and responsive disease surveillance systems are necessary for strong healthcare delivery systems. Therefore, we need to enhance the effectiveness of the disease surveillance system. **[B3-A26]**

1.9. The National Health Supply Chain Management System: The Lifeline of the Healthcare Delivery System

General comments: The national health supply chain management system **(NHSCMS)** is like a vertebra column of the human body. The weak bony structure of the vertebra column can make the human body collapse. Likewise, the **functional capacity** of the healthcare delivery system **(HCDS)** will come to a standstill if the **NHSCMS** is not functioning well. This could affect not only the domain of public health but also other domains and disciplines of medical care and the hospital system. **[B2-A7].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The initial investment to have a **fully computerized NHSCMS** may be high, but the long-term dividend for the efficient performance of the **HCDS** far outweighs the initial investment. The whole distribution network must be closely monitored electronically by a group of professionals, who must take immediate reporting to higher levels for urgent issues and take immediate actions for change or improvement. **[B2-A7].**

We should not underestimate the importance of even a small supply chain management system in a small hospital. Every supply chain system (for medicine, equipment, and spare parts, laboratory reagents, hospital linen, etc.) in the **HCDS** is essential and important. All supply chain systems, irrespective of size, are equally important. A disjointed and uncoordinated performance of the **NHSCMS** may have **unthinkable consequences** for the efficiency of the **HCDS. [B2-A7].**

The **NHSCMS** in developing countries is not fully developed. Even the existing systems are not properly managed and are not satisfactorily functioning. The degree of **resilience is low**. There is a dearth of professionals who could provide training on the **NHSCMS**. **[B3-A10].**

The **inefficiency in NHSCMS** could lead to an increase in the duration of stay of patients in hospitals, high bed occupancy rates, and high nosocomial infection rates, let alone the high mortality rates for various diseases and conditions. It can also negatively affect the psychological well-being and job satisfaction of staff working in hospitals. This could have serious consequences, not only for the staff but also for the hospital care system. There will be a plethora of untoward incidences if the **NSCMS** is not functioning smoothly. **[B2-A7].**

In general, the Ministry of Health did not regard the **NHSCMS** as a priority activity. Many staff are not fully aware of the crucial role that proper management of the health supply chain could play in significantly improving the performance of the **HCDS.** We need to **improve it slowly, but on a broad front. [B3-A10].**

The following action is proposed in order to have a well-coordinated and efficient **NSCMS**. The **"National Health Supply Chain Task Force"** should first be formed with specific terms of reference. The general aims of establishing **NSCMS** are:

- To have an efficient, cost-effective, and transparent health supply chain that ensures the timely availability of quality, efficacious medicines, medical supplies, and equipment at all levels of the **HCDS**;
- To improve health outcomes and integrate existing multiple health supply chains to reduce complexity and cost and increase their efficiencies;

Under the guidance of the Task Force, **"National Health Supply Chain Strategies for Medicines, Medical Supplies, and Equipment"** should be formulated. It needs technical and financial support from development partners such as USAID (Now no more), UN agencies (UNOPS, UNFPA, WHO, UNICEF), and collaborating partners such as CHAI, JSI, etc. **[B2-A7].**

We need to do a **quick assessment** of the existing situation of **NHSCMS** using a checklist of questions and key informant interviews. **[B3-A10]**.

Every effort should be made to make the supply chain system work smoothly. The whole system must be **fully computerized and strongly networked.** The whole distribution network must be closely monitored electronically by a group of professionals, who must take immediate reporting to higher levels for urgent issues and take immediate actions for change or improvement. The algorithm should be made available. It is complicated and challenging work, but also very interesting. The dividends gained will be immense for the Ministry of Health. **[B3-A10].**

We should pay special attention to the supply chain system of the **expanded program for immunization.** It could slow down or even come to a halt if the supply chain system is not working properly. This could result in the emergence or resurgence of vaccine-preventable diseases in various parts of the country and even outbreaks of vaccine-preventable diseases, leading to the unnecessary deaths of children. **[B3-A10].**

It is worthwhile to explore partner UN agencies, organizations, and INGOs who would like to collaborate in this **gargantuan task of streamlining and strengthening the NHSCMS** in a phase-wise and step-wise manner. We may then conduct meetings aimed at having a tentative framework and roadmap of activities to improve the **NHSCMS**. **[B3-A10].**

We may consider **sending a team of officials,** who are currently working in different areas of the **NHSCMS,** to some countries that are implementing the work satisfactorily in their **NHSCMS.** The study teams should be serious in their travels, and proper preparatory work should be done before embarking on the trip. **[B3-A10].**

Capacity-building workshops on enhancing **basic computer skills** relevant to the health supply chain system should be conducted all over the country. A comprehensive set of SOPs and GLs for different functions of the **NHSCMS** should be developed and strictly adhered to. **[B3-A10].**

The following activities are envisaged before we have a full-fledged **NHSCMS**: Depending on resource availability, we may determine the size and sophistication of the **NHSCMS**. A **phase-wise approach** may also be considered. (The activities mentioned below are not in order of priority or importance.)

- In-depth evaluation of the existing health supply chain from all perspectives using checklist-type questions and key informant interviews;
- Ensure an optimal number of tiers in the **NHSCMS;**
- Establish appropriately sized and suitably located storage facilities based on the demand and geography of the country;
- Develop a management information strategy and health supply chain system architecture to facilitate automation and ensure interoperability;
- Enhance efficient management and service delivery through a public-private partnership;
- Align supply chain financing structures, commodity acquisition, changed implementation, and resource allocation that can sustain anintegrated **NHSCMS;**
- Ensure that policies, regulations, and legislation governing health supply chain components are complementary and create an enabling environment for the smooth operation of health supply chains;

- Develop formal and standardized forecasting and supply planning procedures, tools, and processes to decide the future needs of medicines, medical supplies, and equipment and to support effective medium- and long-term planning;
- Establish an efficient and effective procurement system based on the principles of fairness and transparency, enabling suppliers to respond to government needs to meet value for money with quality products;
- Develop an optimally designed, modern, efficient, and appropriately financed warehousing and distribution system that supports the delivery of health services across the country;
- Design and build inter-operable electronic management information and control systems for medicines, medical supplies, and equipment;
- Conduct a series of **"National Health Supply Chain Planning and Strategy Formulation Workshops."** During these workshops, the following topics may be discussed: (e.g., Procurement Technical Support Plan, National Health Supply Chain Baseline Assessment, Warehouse Rapid Assessment, Procurement Options Analysis, Logistics Management Information System, Management Information System Harmonization and Mapping, International and National Level Training on Procurement for Central Medical Store Depot Staff, Procurement for Generic Medicine Specification, International Training on Procurement for Senior Staff of the Ministry of Health, Regional Supply Chain Strengthening, Warehouse Management System Assessment, Procurement Capacity Building Training, Procurement Regulations, Strategic Investment Plan for Pharmaceutical and Technological Sector, Forecasting Training for Concerned Staff of Hospitals, Quick Survey on Supply Chain Stakeholders' Feedback on Health Supply Chain;
- Conduct a national-level workshop on **"Finalization of National Health Supply Chain Strategies for Medicines, Medical Supplies, and Equipment"** and finalize the **"Implementation Activities Framework for National Health Supply Chain,"** which could serve as a road map for the development of **NHSCMS**.

The above activities will take more than one year to complete it and every effort must be made to be successful. The efficiency of the **HCDS** can be greatly improved if we have realistic **"National Health Supply Chain Strategies for Medicines, Medical Supplies, and Equipment."** Proper planning of activities should be done using a Gantt chart. The role of the **"National Health Supply Chain Task Force"** is crucial. Proper division of labor among the responsible staff is essential. It is important to emphasize that **NHSCMS** is not static but dynamic and growing. It is not a one-time affair. It has to be fine-tuned as we go along. **[B2-A7]**

*(*Presentation made by Dr. Myint Htwe at the workshop on **"Development of a Master Plan for the National Health Supply Chain Strategy for Medicines, Medical Supplies & Equipment (2015-2020),"** SCMS, PFSCM, JSI, Kempinski Hotel, Nay Pyi Taw, 2nd – 3rd December 2015, and working documents of the workshop.)*

A.2. HUMAN RESOURCES FOR HEALTH

2.1. Teaching Institutions: Producing an Ethical and Quality Health Workforce

General comments. Health ministries in various countries constantly deal with challenges related to human resources for health. We also need to find ways to **effectively utilize the human resources for health** that are available in conjunction with in-service capacity-building training programs. The career ladder of staff working in different disciplines should also be reviewed and improved in a balanced and impartial way.

We should aim to get **ethically minded and competent health professionals** from our teaching institutions. Faculty development is directly related to effective teaching and learning methods. We need to continuously support this faculty development aspect without fail. In that context, we need to render all-out support to our teaching institutions. **[B2-A3].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Generally, human resources for health issues are not given particular attention as a top priority domain to be taken care of by the health ministry. Many are not noticing the **analogy between the car and the driver**. Health professionals **(drivers)** are steering and driving the healthcare delivery system **(car)** to achieve its objectives. We need to strengthen our health workforce **(drivers)** by all means in order to ensure that they are fully capable (technical, administrative, management, logistical, and ethical) of providing quality healthcare services to the population. **[B3-A4].**

It is critical that we produce **ethically minded, technically savvy, future-oriented, administratively competent, and team-spirited health professionals. [B3-A4]**.

For long-term dividends, the crucial role of teaching institutions in producing public health-minded graduates must not be forgotten. To achieve this, the **public health curriculum in teaching institutions** must not only be dynamic but also attractive and contemporary. The curriculum for clinical subjects should include contemporary information available in developed countries as well as the latest research findings in the clinical field. **[B2-A3].**

It is imperative to establish **dynamic and productive medical education units** in teaching institutions while enabling autonomous decision-making to advance the nation's medical education landscape. These medical education units in teaching institutions play a crucial role in advancing the teaching system in the country. **[B2-A3].**

Promoting a research culture in teaching institutions can lead to multiple benefits for graduate and postgraduate students because critical and analytical thinking skills are significantly improved by conducting research. Research methods, research ethics, research monitoring, and research integrity should be part of the curriculum in teaching institutions. **[B2-A3].**

To improve the overall **ethical perspectives of health professionals,** principles of bioethics, medical ethics, nursing and midwifery ethics, public health ethics, paramedical ethics, institutional ethics, workplace ethics, and research ethics should be taught and discussed in teaching institutions all over the country. **[B3-A4].**

Given their widespread distribution across the country, general practitioners represent a **significant subset of the healthcare workforce.** Developing a realistic plan to increase general practitioners' participation in the public health initiatives of the Ministry of Health is essential. We need to get support from the general practitioner society or medical association. The health institutions in the country can lend a helping hand to achieve this end. **[B1-Part A-A9].**

The **"National Strategic Plan for Human Resources for Health"** is the cornerstone of the healthcare delivery system. A strong health workforce is an essential prerequisite for having a strong healthcare delivery system. The health institutions in the country should be fully aware of this plan and work accordingly. **[B3-A4].**

General practitioners have **strong ties to the community and interact closely with the populace.** They can participate in health promotion initiatives, disease outbreak containment, management of disasters, reporting of unusual illness occurrences, reporting of notifiable diseases, and special events like World Health Day, National Health Day, National Immunization Day, Breast Feeding Week, Blood Donor Day, World AIDS Day, World Malaria Day, etc. We need to seriously consider how to harness the support of general practitioners for several public health initiatives of the health ministry. The health institutions in the country can lend a helping hand to achieve this end. **[B1-Part A-A9].**

A good, cost-effective, and dynamic **"National Strategic Plan for Human Resources for Health"** could help solve many challenges in the healthcare delivery system. The plans are available in all the developing countries but are not implemented seriously and fully. It is also important that the plans be reviewed and updated as and when necessary because the requirement for human resources for health scenarios could be altered by many factors. **[B3-A4].**

The **career ladders of the staff** of various disciplines are not properly worked out, and there is some imbalanced growth among the disciplines. This has led to internal brain drain as well as external brain drain. The career ladders should be good enough to attract health workers to stick to government services. Fringe benefits and respectable retirement settlements for government health staff are important attractants. **[B3-A4].**

We should not underestimate the **importance of job descriptions** in successfully delivering health services to the population. The job descriptions are generally not reviewed and updated regularly, although the health situation and workload of staff have changed over the years. The job descriptions should be divided into compulsory duties and other general duties. A **"Committee for Reviewing the Job Descriptions of Staff"** of the Ministry of Health should be formed. **[B3-A4].**

For capacity-building activities of health staff, many training programs are there, but they are **not properly evaluated in terms of quality** or the number of training courses given in different disciplines. The capability and capacity of the trainers are also not assessed regularly. The training methods and approaches applied are also not selected properly. **[B3-A4].**

A **system of registries for training programs** is not well established, and the feedback from the trainees is not generally available for improving future training courses. The capacity-building activities of staff are carried out in an imbalanced manner among various disciplines. These are some of the issues that we commonly face in many developing countries. The utility of the registry is limitless. The training institutions should consider conducting several training programs in collaboration with various health programs of the Ministry of Health. **[B3-A4].**

2.2. Public Health Acumen of Health Staff: Prerequisites for Work Efficiency

General comments. Public health practitioners are the ones who operate the healthcare delivery system. Every effort should be made to make them technically savvy, ethical, dedicated, forward-thinking, and forward-looking staff of the Ministry of Health. Public health practitioners ought to always consider the **systems approach, systems thinking, epidemiologic thinking, and out-of-the-box thinking** as basic tenets in their work. This will make the health initiatives dynamic, responsive, adaptive, effective, and successful.

Public health practitioners must exercise out-of-the-box, futuristic, epidemiologic, and lateral thinking in their day-to-day management of public health activities, in addition to possessing monitoring and evaluation skills. [Some characteristics mentioned below may have some repetition.] **[B2-A1].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Public health practitioners should work **within the boundaries of the following basic tenets** in order to possess public health acumen:

- Thinking outside the box;
- Practicing epidemiologic thinking;
- Initiating mutual respect in networking;
- Inculcating a compromising attitude to achieve a common objective;
- Practicing fact-finding rather than fault-finding;
- Doing introspection;

- Applying futuristic thinking;
- Using phase-wise and step-wise approaches;
- Applying systems approaches and systems thinking. **[B2-A1].**

Benchmarks such as technical expertise, administrative skill, management aptitude, and working style with program staff are minimal core criteria for selecting a program director of any public health program. The ability to think holistically, futuristically, epidemiologically, and harmoniously with partners would be additional assets. Applying these entities could help improve the public health acumen of health staff. One could legitimately argue that population health improves with the application of sound public health practices. **[B2-A1].**

Ten fundamental traits that every public health practitioner should cultivate along the way are (i) analytical prowess; (ii) rational thought processes; (iii) adherence to ethical principles; (iv) team-spiritedness; (v) futuristic thinking attitude; (vi) exhibiting holistic viewpoints; (vii) a spirit of introspection; (viii) a sense of mutual respect; (ix) good inference-making skills; and (x) balanced decision-making talents. **[B3-Preface].**

Before embarking on action on a situation, problem, or issue, public health practitioners should know the **preliminary, baseline, or initial situation.** They should have a long list of insightful questions in the back of their minds, starting with what, why, when, where, why, the root cause, and what will happen if we do not take action. What political repercussions, social consequences, social injustices, and ethical dilemmas can arise if we do not intervene? These are the **minimal thoughts** that should always come to the minds of public health practitioners whenever a problem or issue pops up. **[B4-A20].**

The notion that **public health interventions must be adjusted depending on ever-changing or evolving epidemiological situations** should always be at the back of the minds of public health practitioners. **[B2-A1].**

As public health practitioners are dealing with groups of persons, communities, or populations residing in large geographical areas, they need to always abide by the **principles of public health, principles of epidemiology, principles of social ethics, and principles of public health ethics. [B2-A1].**

The **desirable characteristics of a public health practitioner**, among others, are as follows: (not in order of importance)

- Viewing a situation or scenario from different angles and perspectives, taking into consideration the agent, host, environment, vector, time, place, and person related to the scenario in question;
- Contemplating things from long-term perspectives or imagining their long-term impact on the population;
- Always perceive and envision things from the population or community point of view;
- Possessing data analytical and interpreting skills as well as epidemiological thinking skills;
- Research-minded and research-oriented;
- Always heed the principle of cause and effect in any epidemiological situation;
- Always follow the principles of public health ethics and medical ethics in decision-making processes and other important activities;
- Always do introspection or self-evaluation;
- Ability to select the best approach among several approaches available;
- No hesitation to revert, change, or modify the selected approach, activity, or intervention if it is found out later that it is not correct or inappropriate;
- Prioritization capability for selecting programs and strategies based on the principles of public health, principles of epidemiology, and principles of public health ethics;
- Practicing mutual respect and understanding among colleagues;
- Having a keen interest in data analysis and interpretation;
- Always apply a systems approach and use systems analysis, or see things holistically;
- Review or analyze data or information from negative aspects, and actions be considered from positive perspectives;
- Always inculcate an inquisitive mindset or exploratory attitude;
- Strong inclination to update the public health knowledge base and expand the knowledge horizon;
- Always promote networking among the stakeholders, like-minded organizations, and associations;
- Always compare and contrast a situation;
- Possessing a spirit of compromise;
- Applying team spirit and practicing team approach;
- Balanced and unbiased decision-making should be the order of the day. **[B2-A1].**

For any public health intervention to be effective at the ground level and to have a lasting impact, the most important thing is that **people or communities must be involved in public health interventions.** We have to create a scenario where there is a **sense of belonging or ownership** by the population for any public health program, project, or intervention that we intend to initiate in a defined geographical area, province, or region. Without that, the program, project, or intervention will not last long. This is the duty of a good public health practitioner. **[B2-A1].**

Possessing **analytical skills** is not an inborn acquisition for a public health practitioner, but it must be nurtured all along our career. The four skills—analytical, epidemiological, beyond-the-box thinking, and rational decision-making—are not only interconnected but also mutually beneficial to one another. Possessing epidemiological thinking skills and beyond-the-box thinking skills will only be fruitful if we have the proper background knowledge and information on the issue or problem at hand. **[B4-A11].**

One crucial aspect that needs to be considered from a long-term perspective is **teaching preventive and social medicine subjects** in every year of the MBBS course. Thus, newly graduated MBBS doctors have a good command of the basic principles and practice of public health. This will facilitate promoting public health in their private clinical practice as well. This can ultimately raise the health status of the population. **(B1-Part A-A9).**

The following **probing questions** are the minimal ideas that always come to the minds of public health practitioners whenever a problem or issue pops up:

- What is the overall scenario for the problem or issue at hand?
- What is really happening on the ground?
- Is there any likelihood that the situation may improve?
- Is the situation under control, improving, or deteriorating?
- What are the problems (root causes) leading to this situation?
- What are the challenges noted?
- Why does this problem keep happening?
- How serious is the problem or issue?
- What steps is the health ministry currently taking to resolve the problem or issue? **[B4-A20].**

2.3. Clinical Acumen of Doctors: Always in Need of Sharpening

General comments: Developing clinical acumen is a long-term endeavor, and every effort should be exercised to ingrain it. **[B4-A1]**. Striving to achieve good clinical acumen and clinical judgement is a lifelong process that should continue for as long as one practices medicine. The relevant medical schools should collaborate and create a composite plan for improving the clinical acumen and clinical judgement of doctors. **Multipronged and multifaceted approaches** are necessary. **[B4-A6]**.

Clinical acumen is the capability of doctors to make accurate and timely decisions in ordinary or complex clinical scenarios. The correctness of a diagnosis depends on experience and critical thinking. These are related to the background knowledge of clinical medicine of the doctor.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The following **initiatives could improve doctors' clinical acumen and judgement** in one way or another:

- Revise and improve curricula, instructional materials, and teaching methods for clinical subjects, and stay current at all times;
- Form a curriculum monitoring group in order to give undergraduate and postgraduate medical students a dynamic and updated curriculum;
- Enhance focusing on research and medical ethics;
- Enhance the teaching quality of faculty members in medicine by having regular faculty development programs, including faculty exchange programs;
- Establish regular forums for the exchange of the most recent developments in the clinical field;
- Encourage formal or informal student-faculty engagement sessions, including mentor-mentee programs;
- Establish a medical education unit at every institution of higher learning for continuously monitoring clinical acumen and clinical judgement-enhancing activities;

- Conduct regular clinicopathological conferences (CPCs) or clinical gatherings in sizeable hospitals where a variety of clinical specialistsare available;
- Establish clinical research units (CRU) at large hospitals to conduct a significant number of clinical trials, drug studies, case studies, long-term follow-up studies on patients, and case-control studies from various clinical perspectives;
- Create a board certification program for physicians in order to have board-certified physicians;
- CME credit units for various training programs should be calculated and a standard established. A physician must maintain a certain minimum number of CME credit units to maintain their license;
- Speciallectures on contemporary topics of importance by professors and lecturers should be videotaped and posted on the webpages of the health ministry and relevant walls of the institutions;
- Each institution's customized dash board for the clinical domain should be regularly updated with crucial information for clinicians all over the country;
- All hospitals should have access to the most recent SOPs and GLs in the clinical field. **[B4-A6].**

The possession of good clinical acumen and clinical judgement depends on the **thorough knowledge of fundamental basic science** disciplines like general and surgical anatomy, general and applied physiology, general and applied pathology, general and applied pharmacology, general and applied microbiology, and general and applied virology. Once obtained, clinical acumen can be sustained for a very long period of time. **[B4-A6].**

Establishing **"Clinical Research Units" (CRU**) in large hospitals can improve the performance of treatment and other healthcare services given to patients. It should be established in general hospitals with 200 beds and above and also in specialty hospitals in the country. Research on comparison of various treatment modalities, clinical trials on newer drugs, nosocomial infections, time and motion studies, patient satisfaction studies, survival studies on chronic diseases like cancer and autoimmune diseases, case control studies on various topics, studies related to various operating procedures, etc. could be conducted. This will, in one way or another, enhance the clinical acumen of doctors working in the hospital. The whole spectrum of the clinical course of various diseases can be studied. **[B4-A6].**

Clinical acumen is the **capacity to make the best decisions or draw the best conclusions** possible when it comes to patient-related clinical challenges by making intelligent use of the knowledge that is available. A doctor with good clinical acumen can make good clinical judgments. In light of this, it is important to expand doctors' knowledge bases, sharpen their analytical skills, and increase their knowledge horizons using various approaches. **[B4-A6].**

From a long-term perspective, we need to start improving the **teaching practices** used in medical and allied schools. The health ministry or education ministry should allot sufficient funds for procuring state-of-the-art instructional materials, establishing networks of electronic libraries, instituting an electronic teaching system, and establishing faculty capacity-building programs to further enhance the lectures and discourses given at educational institutions. These are essential prerequisites for getting doctors who possess good clinical acumen. **[B4-A6].**

The best course of action is to establish a **"National Task Force for Enhancing the Clinical Acumen of Medical Doctors"** that will formulate workable strategies and a time-bound framework of activities and implement them phase-by-phase, step-by-step, within the context of the existing clinical picture. **[B4-A6].**

2.4. General Practitioners: Get them Involved in Advancing Public Health

General comments. The general practitioner (GP) workforce is huge, and their involvement in health promotion and disease prevention activities will have a s**ignificant and positive impact on population health**. **(B1-Part A-A9).** By nature of their work, a GP's primary interest is treating ill patients. This fact should always be kept in mind whenever we want GPs to be involved in the public health activities of the health ministry.

It is time for change. Involvement of GPs is crucially important in tackling local public health problems or promoting public health activities, especially in remote and underserved areas. **Patients are more receptive to GPs** and are more likely to follow their advice. **(B1-Part A-A9).**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

We should take **full advantage of the services of general practitioners (GPs)** because:

- GPs provide multidisciplinary service individually or to the family as a whole;
- GPs can provide integrated care: curative as well as preventive, promotive, or rehabilitative, as per the need;
- GPs understand the socioeconomic and cultural components of individuals and families in their catchment areas;
- GPs can provide individual and personalized care through long-standing friendship and understanding. **(B1-Part A-A9).**

Currently, in Myanmar, there is no **stable and sustained official communication channel** between the health ministry, the GP Society, or the GP Association. Mutual respect and understanding between officials of the health ministry and GPs must be firmly established and sustained using various approaches. We need to utilize the services of GPs for several public health initiatives. **(B1-Part A-A9).**

Health literacy promotion talks given to a group of people in the community by so-called popular or renowned GPs would be very effective in promoting the health status of the community. This type of group talk could be conducted in close collaboration with the officials at the health ministry. This can also create a sense of cohesiveness and team spirit between GPs and officials of the health ministry. It would be very conducive to promoting and strengthening the foundation of public health. Such initiatives can help improve the overall health status of the population. **(B1-Part A-A9).**

GPs should consider themselves **frontline medical care providers,** and their clinical acumen as well as their understanding of basic concepts of public health are important. This could be achieved through the continuing medical education programs run by GP societies and medical associations in their respective countries. **(B1-Part A9).**

The important role that GPs can play in the healthcare delivery system should be recognized by GPs themselves. Some of the **strategic roles** that GPs can play are:

- **Reporting any notifiable disease** to the concerned health authority so that preventive, control, or containment activities can be initiated in time to reduce the morbidity and mortality of a particular notifiable disease, thereby directly or indirectly raising the health status of the population;
- GPs can be involved in **government-initiated public health activities** in the field, such as immunization (national immunization days), national health days, nutritional improvement programs, school health programs, relief efforts during disasters, control of acute respiratory tract infections, control of diarrheal diseases, cardiovascular disease control, cancer cervix detection, cancer breast detection programs; etc. **(B1-Part A-A9).**

GPs should consider themselves **frontline medical care providers**, and their clinical acumen as well as their understanding of basic concepts of public health are important. This could be achieved through the continuing medical education programs run by GP societies and medical associations in their respective countries. **(B1-Part A9)**.

We need to strongly promote the notion that **GPs are part and parcel of the national healthcare delivery system** and that GPs involvement in government-initiated healthcare activities is extremely important and essential for the overall health development of the country. **(B1-Part A-A9).**

2.5. Nursing and Paramedical Professionals: Indispensable Players in the Healthcare Delivery System

General comments. Nursing professionals are very important for the efficient functioning of the healthcare delivery system. Many challenges in the healthcare delivery system arise from an insufficient number of nursing professionals and the less than perfect standard of performance of some nursing professionals in hospitals. One way is to increase the production of quality nurses. We also need to initiate several **attractive incentives** and establish a **good career ladder** for nursing professionals. **[B3-A19]**.

Paramedical professionals were not given due attention as much as they deserved it. Their services are very critical and essential. Capacity-building activities for paramedical professionals were few. **The higher the technical caliber of the paramedical professionals,**

the better the clinical outcome for the patient. Every effort should be made by the Ministry of Health to enhance the paramedical acumen of this category of professionals. It could definitely reduce the number of challenges seen in hospitals. Patient satisfaction can be dramatically increased if the performance of these two categories of professionals is enhanced. **[B3-A20]**. [Nursing university and nursing school are used interchangeably.]

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The **quality and ethical performance of nurses** are directly associated with achieving the following hospital parameters:

- High patient satisfaction indices;
- Shortening the duration of stay of patients in hospitals;
- Reducing the nosocomial infection rates;
- Improving the overall efficiency of hospitals;
- Reducing the incidence of side effects of medicines through proper briefing of patients;
- Reducing antimicrobial resistance **(AMR)** through proper briefing of patients;
- Decreasing the postoperative complication rates;
- High confidence and respect of patients towards nurses;
- Reducing the incidence of **hospital accident**s such as blood transmission mishaps, giving wrong medicines and injections, operation room mishaps, etc. **[B2-A14].**

In order to produce **quality, committed, and ethical nurses,** we need to strengthen the institutions in developing countries to produce nurses by way of: (Down-to-earth perspectives are mentioned.)

- Updating teaching curricula in line with the changing demands and needs of the public and private hospitals in the country;
- Nursing ethics and research ethics subjects should be included in the curricula of every scholastic year;
- Practicing state-of-the-art teaching methods;
- Ensure the availability of the latest teaching aids;
- Create a conducive teaching-learning environment;
- Recruiting quality faculty members who can lecture and teach well;
- Institutionalize capacity building training courses for faculty members;

- Appointing more professor emeriti, honorary professors, adjunct professors, and visiting lecturers;
- Establish networking with schools of nursing in other countries;
- Initiate a system for faculty exchange with schools of nursing in the network;
- Constant communication with WHO Collaborating Centers for Nursing, the International Council of Nurses (ICN), and the International Nurses Association for specific disciplines to get technical support and intensify collaborative work;
- Appoint paid teaching assistants or preceptors from among the outstanding nursing students;
- Facilitating a smooth practicum for nursing students at hospitals;
- Ensure the availability of good hostels for nursing students and housing for faculty members;
- Give more time for leisure activities for nursing students;
- Conduct regular lunchtime talks;
- Initiate more extracurricular activities, including debates and symposia;
- Ensure the availability of a state-of-the-art electronic library;
- Establishing and promoting a mentor-mentee system;
- Inculcate interest in research together with the strengthening of Institutional Review Boards (IRB);
- Establish a **"Nursing School Research Registry**" and a **"Nursing School Research Information System;"**
- Establish a **"Research Integrity Unit,"** which will also take care of teaching research topics;
- Ensure funding availability to conduct research projects approved by the University Institutional Review Board;
- Establish a system for discussing case studies on nursing ethics;
- Issuing a quarterly e-newsletter of the nursing universities;
- Establish a student union for the welfare of nursing students;
- Form a **"High-level Advisory Committee for Promoting the Nursing Education System"** for the School of Nursing;
- Initiate the **"Excellent Student Prize"** or **"Gold Medalist"** award for each scholastic year. **[B2-A14].**

If we could consider doing the above-mentioned suggestions, we will definitely reach our ultimate aim of the so-called **satisfying, fulfilling, and rewarding nursing domain. [B2-A14].**

The improvement of **patient-nurse communication** is crucial, and every aspect needs to be considered to improve the situation. Socio-behavioral, interpersonal communication, and nursing ethics subjects should be included and emphasized in the nursing curriculum of teaching institutions. Seminars or lunchtime talks on this subject should be held frequently in hospitals or teaching institutions. **[B3-A19].**

Institutions producing nurses should play a proactive role in overcoming the challenges seen in the nursing domain. We should try to **create a higher learning atmosphere in teaching institutions.** Nursing is a noble profession. The idea should be ingrained in the minds of nurses at all times. All nurses should be proud of their profession. **[B3-A19].**

Research and nursing ethics should be taught very seriously in every scholastic year of the Bachelor of Science in Nursing **(BSN**), as well as in master and doctoral courses. There should be a strong research department and institutional review boards **(IRBs)** or ethical review committees **(ERCs)** constituted in nursing schools. If funds are available, departments of research integrity should be established in nursing schools. **[B3-A19].**

We could learn and improve a lot if we conducted surveys on **"Job Satisfaction of Nurses in Hospitals," "Patient Satisfaction Towards Nursing Services in Hospitals," and "Nursing Students' Attitudes Towards the Nursing Education System." [B3-A19].**

Do we have a specific **policy on nursing and midwifery** in the country? If not, we need to formulate it as soon as possible. If we do have it, we need to review it to judge whether it is still in line with the rapidly changing nursing scenarios in the country. A country with a responsive and responsible nursing and midwifery policy is bound to be successful in many aspects. **[B3-A19].**

In order to **promote the *paramedical domain**, consisting of several paramedical disciplines, we need to develop a good career ladder, provide reasonable fringe benefits, create conducive working environments, provide free uniforms, allow reasonable housing and car loans, provide hostels or apartments with normal rent, give acceptable health insurance, have attractive pensions, and make them feel proud of their disciplines. **[B3-A20].**

As the functions of paramedical professionals are linked with medical professionals' work, the associations and councils of paramedical disciplines should closely network with the medical associations and medical councils. The **linkage among the related disciplines** is not that strong in many developing countries. **[B3-A20].**

Several capacity-building programs in the paramedical disciplines should be conducted in a systematic manner. **If the paramedical disciplines were strong, the overall hospital system would be strong.** We need to conduct several continuing paramedical professional education courses for different paramedical disciplines. The continuing paramedical professional education **(CPPE)** credit units thereby accrued should be considered for promotion of the paramedical staff. **[B3-A20].**

The higher the technical caliber of the paramedical professionals, the better the clinical outcome for the patient. Every effort should be made by the Ministry of Health to enhance the paramedical acumen of this category of staff. Strengthening the paramedical domain has not been done seriously in many countries. The quality of performance and excellent output from paramedical professionals can help solve many challenges seen in hospitals. The mortality rates and length of stay of patients in hospitals will be reduced if the performance of paramedical professionals is satisfactory. **[B3-A20].**

The World Health Organization defined paramedical staff as **"healthcare assistants, laboratory technicians, technologists, therapists, nutritionists, and sanitarians, among others, who are actually working in the country and are graduates of two- to five-year courses in recognized training institutions." [B3-A20].*

NB. *School and University* are used interchangeably in this book.

2.6. Enhancing the Analytical Skills of Staff: A Prerequisite for Planning and Rational Decision-Making

General comments. Possessing analytical skills is not an inborn acquisition for a health professional, but it must be nurtured all along our career. Analytical skills are something that all public health practitioners should strive to have throughout their careers. One of the important qualifications for a public health practitioner to be considered fully qualified is the possession of analytical skills. The four skills—**analytical, epidemiological, beyond-the-box thinking, and rational decision-making**—are not only interconnected but also mutually beneficial to one another.

Since public health is a **dynamic and ever-growing field**, the thought processes of public health professionals should be dynamic and contemporary. Moreover, epidemiological circumstances around diseases and conditions are evolving. While dealing with any unique, innovative, or emerging public health issue, one should possess these skills. To put it another way, these are the crucial abilities a successful public health practitioner has to have.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The following topics should be discussed in a variety of forums or platforms to aid health professionals in better **understanding the value of data and honing their analytical skills:**

- "The need for valid, timely, and dependable data for outbreak control"
- "How can we extract information from the massive amounts of data we have?"
- "Creating information for decision-making from hospital data"
- "Developing cognitive abilities in epidemiology"
- "Thinking creatively beyond the box"
- "Turning data into intelligence"
- "Rational decision-making in the public health and clinical domains"
- "Enhancing data presentation skills"
- "Becoming a good epidemiologist"

- "Public health ethics and informed decision-making"
- "Is there a limit to beyond-the-box thinking?"
- "Management techniques for solving administrative issues"
- "Utilization of data for health planning and policy making"
- "Data: an ultimate input for logical decision-making." **[B4-A11].**

The main purpose of having these forums or platforms is to **stimulate public health practitioners' interest in the utility of data and its benefits,** together with the promotion of analytical skills. The above-mentioned skills of public health practitioners will gradually but undoubtedly be improved through the aforementioned actions. It will ultimately improve the performance of the healthcare delivery system in the country to the benefit of the general public. **[B4-A11].**

Analytical skills cannot be acquired in a short period of time. We need to nurture it slowly and carefully. The initial requirement is an interest in data and its utility. The whole domain of public health is grounded in the data and information of any scenario under consideration. The data will be more useful if it is first transformed into information. When we do analysis on data, we are actually transforming it into information for action. The analysis will be sound and useful if one possesses analytical skills. **[B4-A11].**

In this data-driven society, all of our judgements should be founded on **solid and trustworthy data.** Modern data science is developing very quickly, and we need to keep up with the pace of development. **[B4-A11].**

When a set of data in a given condition or circumstance is reviewed, we must consider or **analyze the pertinent aspects** along the following lines:

- Is the information accurate and up-to-date in terms of the condition or circumstance?
- Scrutinize the condition or circumstance with reference to the time and place of occurrence, persons affected, agents involved, recipient hosts, vectors involved, background environment involved, etc. (as relevant).
- Is the data a rate, an absolute number, or a proportion?
- What is the area coverage of the rate, absolute number, or proportion?
- If it is a rate, is the denominator correctly used?
- Is the quantum of the data sufficient to draw a conclusion?

- Check whether the data received is an outlier;
- Short- and long-term trends of the condition or circumstance;
- Compare with similar conditions or circumstances;
- Questions of **"what if"** and **"what if not"** for the condition or circumstance should be explored;
- Is it a one-time event, a less frequently occurring event, or a commonly occurring event due to the condition or circumstance? **[B4-A11].**

The understanding of essential statistical concepts, fundamental epidemiological principles, data presentation skills, and inference-making abilities all support one's capacity to draw the appropriate conclusions from a circumstance. As a result, in order to enhance public health conditions and address hospital management challenges, we must **strengthen the analytical skills and capacities** of the staff of the health ministry. **[B4-A11].**

The **curriculum for preventive and social medicine** subjects in MBBS, BSPH, MSPH, MPH, DrPH, and other postgraduate health sciences courses should include special packages for data presentation methods and inference-making. This is one way to stimulate the students to sharpen their analytical skills. **[B4-A11].**

A.3. BUTTRESSING THE EFFECTIVENESS AND EFFICIENCY OF HEALTH PROGRAMS

3.1. Ethics: A Guiding Principle for Rational Decision-Making

General comments. Different kinds of ethics exist. Medical ethics, nursing ethics, public health ethics, research ethics, and ethics for other health disciplines are significant and fundamentally important to us as professionals in the health field. When performing our work, we should **never lose sight of the relevant ethical principles.** These moral precepts will direct us to the correct path, ensuring that each of us makes honest, objective, and fair decisions on a daily basis at work. These ethical principles should be in the curriculum of all health disciplines taught in our health institutions.

Senior officials in charge of the Ministry of Health should be aware of these and take appropriate action to remind us through several channels in our health institutions. Even the **most well-qualified health practitioner is worthless if they lack ethics.** Being technically superior is not one of the most desirable qualities for a health practitioner; rather, having and upholding ethical behavior is. **[B2-A3].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

If at all feasible, every educational institution ought to **set up an ethics department**. This department might produce teaching modules, case studies, and ethics curricula. Students could become interested in ethics by having lunchtime talks, presentations of case studies on ethical issues, and seminars on the subject. The ethical concepts must be deeply ingrained in the students' thoughts. That is essential for developing countries. **[B2-A3].**

In medical and nursing schools, respectively, we must incorporate medical ethics, nursing ethics, etc. into the academic programs for each academic year. Since health professionals spend their careers primarily working with people, an ethical stance is crucial. **Many decision-making processes require ethical consideration.** It should be mandatory for all members of the teaching faculty to take pertinent short courses on topics such as research ethics, midwifery and nursing ethics, public health ethics, medical ethics, and ethics related to other relevant disciplines. **[B2-A3].**

Simply put, public health ethics is the application of relevant ethical principles and moral values to public health, such as in justifying public health programs, public health policy formulation, and the selection of public health interventions from among various possible alternative courses of action. **Decision-making in public health** is not solely dependent on technical perspectives but also on certain distinctive characteristics of public health ethics. **[B3-A30].**

One important fact in **public health is based on the interdependence of people and events**. It means that the health status of an individual is closely linked to the health of the population. Therefore, consideration of ethical perspectives on public health issues is equally important and should be part and parcel of the decision-making process. **[B3-A30].**

Decision-making in the public health domain should not be done by one person. By the very nature of public health, **decision-making must be done collectively,** taking into consideration relevant ethical principles and moral values, technical rationality, along with long-term and short-term implications for the recipient population. **[B3-A30].**

The staff working for the healthcare delivery system must preferably be ethically minded, technically savvy, team-spirited, far-sighted or future-oriented, and positive-looking health professionals. The ethical perspective is important as health professionals are mainly dealing with human beings throughout their careers. **A technically top-notch health professional is of no value unless he or she is an ethical professional.** One of the top desirable characteristics for a health professional is not technical superiority but possessing and practicing ethical behavior. **[B2-A3].**

3.2. Capacity-Building: Empowering Intelligence

General comments. The Ministry of Health frequently hosts workshops aimed at enhancing capacity. These workshops should be properly planned and organized. It is imperative to evaluate every capacity-building workshop in order to enhance the quality of succeeding workshops. There has to be a registry of capacity-building workshops. To coordinate and keep an eye on all of the **nation's capacity-building workshops**, the Ministry of Health should establish a central unit for systematic monitoring and assessment. This is a huge field in which we may broaden our perspective on various aspects for improving the capacity of our staff. Our final aim is to improve the technical proficiency, ethical practice, ethical decision-making, and overall competence of our healthcare personnel to properly, effectively, and efficiently serve the populace. Capacity-building is an ongoing process, and there is no end.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Developing countries do a large number of **capacity-building activities (CBAs),** such as workshops, training courses, technical seminars, and technical discourses, but **not in a balanced way in terms of technical disciplines.** It is typically not the norm to do follow-up tasks to ascertain the value and advantages of participating in capacity-building workshops. **[B3-A9].**

Quality CBAs are very cost-effective, time-effective, and very beneficial to the concerned staff in the long run. **Generic guidelines for conducting CBAs** ought to be developed and made available widely. **[B1-Part A-A21] [B3-A9].** Almost all health programs of the health ministries have CBAs mentioned as part of their work plans. We need to give serious attention to it so as to **obtain the desired effect.** It is one of the key activities for increasing the efficiency and effectiveness of program performance from all perspectives. **[B1-Part A-A21].**

A system of registries for training programs run by the Ministry of Health is not well-established, and the feedback from the trainees is not generally available for improving future training courses. **The utility of the registry is limitless.** We need to promote establishing a registry of training programs conducted by the Ministry of Health. **[B3-A4].**

As part of CBAs, the health ministry should arrange a platform or forum to discuss contemporary and contentious public health issues of importance on a regular basis, e.g., **biennial national public health conferences and people's health assemblies. [B3-A9].**

For the long-term development and progress of the clinical domain and the public health domain, we should seriously think of establishing **a system for conferring board-certified clinicians** in different clinical disciplines. The purpose of having board-certified clinicians is that we would like to render quality medical services to the population at large. The board certification can be regarded as enhancing the clinical and public health acumens of doctors. **[B3-A3].**

CBAs must be properly planned and conducted in a very systematic manner. The following **three key areas** need to be considered before developing plans to conduct CBAs:

- Issues to be considered just before conducting the CBAs;
- Issues to be considered while conducting the CBAs;
- Issues to be considered after conducting CBAs. **[B1-Part A-A21].**

Some of the CBAs are generic in nature and cut across all programs and staff from different programs can attend. One side advantage is that staff from different programs can share their experience from different perspectives and angles. Currently, many staff are attending one CBA after another, and time for actual program implementation is compromised. In essence, CBAs must be properly planned and conducted in a systematic manner. **[B1-Part A-A21].**

The following are **important aspects of CBAs:**

- It should be regarded as a long-term investment for the development, progress, and sustainability of an institution or organization;
- The ultimate beneficiary is the population;
- Generic guidelines for conducting capacity-building workshops and courses should be developed;

- Guidelines for generic evaluation of capacity-building workshops and courses should be made available;
- Workshops for training for trainers for faculty expected to serve as trainers, facilitators, or resource persons should be conducted;
- A registry of capacity-building workshops and courses should be established;
- All background materials, working papers, and power point presentations made at the capacity-building workshops and courses should be put on the health ministry website. **[B3-A9].**

Meticulously prepared **staff briefing programs** are generally not available in many developing countries. Senior and responsible officials usually take it for granted that newly recruited staff will learn by doing. They do not realize the wide-ranging and long-term benefits of staff briefing programs and sessions. There are no ready-made briefing notes, packages, documents, or compendia for incoming staff or newly recruited staff. Staff briefing programs are required in view of rapid developments in public health, disease control, clinical, and paramedical domains. **Staff briefing programs are, in fact, part and parcel of CBAs. [B3-A18].**

Using electronic communication tools in training programs is one of the most effective approaches to raising the clinical and public health acumen of health workers in a short period of time. We need to have a clear-cut national strategy on **"Enhancing Capacity-Building Activities Using Electronic Communication Tools." [B4-A21].**

Continuing professional development **(CPD)** programs such as:

- Continuing Clinical Professional Education **(CCPE)**;
- Continuing Public Health Professional Education **(CPHPE)**;
- Continuing Nursing and Midwifery Professional Education **(CNPE)**;
- Continuing Paramedical Professional Education **(CPPE)**;
- Continuing Basic Health Services Staff Education **(CBHSSE)**;
- Continuing Stakeholder Education **(CSE)** working in the health domain should be regularly conducted in the health ministry. It should also be properly registered and evaluated. **[B3-A3].**

3.3. Collaboration and Networking: Essential Prerequisites for Health Initiatives

General comments. In the realm of public health, collaboration, coordination, and networking are crucial to achieving the desired outcomes. Following certain basic guidelines is necessary if we want to improve collaboration across the many entities and stakeholders. If we also build a strong networking structure among the collaborators, the collaboration will produce greater and higher-impact results. There are **rules for networking** that we must adhere to as well. Some of the boxes listed below touch on these guidelines for collaboration and rules for networking. Public health initiatives will not be sustained and will be very weak without collaboration and networking.

The **increasing number of partnerships** at the global, regional, and country level calls for strengthened international health coordination and harmonization. This is especially the case at the country level, where several development partners, UN agencies, INGOs, and many other players are working in the health domain. Strengthening country capacity in the coordination and management of the activities of development partners, UN agencies, and INGOs is becoming increasingly important because there are many players operating in the field of health, covering the whole spectrum of public health. Responsible officials of the Ministry of Health should inform external partners, UN agencies, and INGOs about the country's health policies and priorities, national health plans, major strategies and targets, the nature and mode of work of the Ministry of Health, etc. **[B1-Part A-A7].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Without **proper collaboration, coordination, and systematic management of partners** working in the country, it can lead to:

- Duplication of efforts by several partners results in the wasting of resources;
- Confusion in the recipient country due to competing priorities proposed by different partners;
- Priority proposals, activities, or funding support from these partners may not be in alignment with national priorities and policies;
- The inability of the recipient country to cope with the increasing demand or requirements of various partners as human resources that are available in the Ministry of Health are finite. **[B1-Part A-A7].**

It could be **confidently state**d that:

- Health collaboration and coordination is an evolving process in which adjustments and improvements should be made as we go along;
- There is no single recipe to cater to the needs of all partners;
- Concerted efforts by all partners involved in collaborative health activities are needed. **[B1-Part A-A7].**

It is important to remember that there are many parties involved in the health sector besides the health ministry. The health ministry is by no means the only organization accountable for health-related problems or issues that arise in hospitals or the community. We need to identify the other parties working in the field of health. We then **form an efficient network of partners** in the health domain for effective action. **[B3-A23].**

In the context of networking, the **demarcation line between clinicians and public health professionals must be dissolved** through various avenues and means. We need more bonding between clinicians and public health professionals. Clinicians must be asked to emphasize preventive, promotive, and rehabilitative aspects of diseases and conditions in their didactic lectures and also during ward rounds in hospitals. **[B3-A12].**

Many health advantages can be realized if we work together on certain specific health-related issues between the health ministry and other pertinent ministries (Industries, Trade, Transport, Agriculture, Social Welfare, Customs, Police, Border Affairs, etc.) under a **collaborative framework.** Consumer affairs and trade unions should also be part of the network. **[B3-A11].**

Guidelines for effective collaboration with local and international NGOs with the health ministry are essential for effective ground-level engagement, as the number of NGOs has been increasing over time. **[B3-A11].**

The role of the private sector in the health domain is expanding with increasing momentum. The desirable impact of partnerships should be augmented through the formation of networks of partners within a set framework. An **urgent review of the policies and strategies** of the health ministry on private-public partnerships in the context of the prevailing conditions is called for. **[B3-A11].**

The institutions or entities do not share their ideas, intentions, objectives, and long-term goals with their counterpart health institutions or entities. Two or more health institutions working collaboratively could not only have a synergistic effect, but the weakness of one health institution could also be counterbalanced. We should try to have **more networks of like-minded institutions or entities.** The health ministry could coordinate to make it happen. **[B3-A3].**

The culture of working together among health institutions and entities is generally not the order of the day. Thus, each health institution or entity is not noticing the development, challenges, issues, and progress of other health institutions or entities. They usually consider other health institutions or entities not as their counterparts but as their contenders. **[B3-A3].**

Tripartite refers to clinicians, including general practitioners, public health professionals (ranging from epidemiologists and program managers to basic health service workers), and health institutions (schools, universities, and training institutions) under the ministry of health. The representatives from these three entities should regularly meet and discuss the contemporary challenges observed in the delivery of health services in the country. The benefits accrued will be very large if members of the tripartite are closely working. **[B3-A3]**.

In real life, clinicians and public health professionals do not work much in tandem. Each profession is concentrating on their areas of work without noticing the development, progress, newer findings, and challenges being met in other professions. Each profession is not realizing the fact that their activities are, in fact, complementary and reinforce each other. **Regular platforms or forums to share experiences and viewpoints** between the two professions and beyond should be made available. **[B3-A12].**

For the long-term development and progress of the clinical domain and the public health domain, we should seriously think of establishing a **system for conferring board-certified clinicians** in different clinical disciplines. The purpose of having board-certified clinicians is that we would like to render quality medical services to the population at large. Likewise, we could also think of **board-certified public health specialists and board-certified epidemiologists.** Board certification implies the highest level of accreditation within a given discipline. The tripartite collaboration is essential to making this happen. **[B3-A3].**

Clinicians and public health professionals could **work closely together in the following areas:**

- Numerous public health promotion activities;
- Joint clinical and public health research projects;
- Developing health education materials;
- Institutional Review Boards (IRB) or Ethical Review Committees (ERC) meetings;
- Development and updating of the SOPs and GLs on various subjects;
- Improving the hospital' administrative and management issues;
- Time and motion studies in hospitals;
- Improving the hospital information systems;
- Lowering the incidence and prevalence of communicable, noncommunicable, and chronic diseases;
- The development of updated curricula for various courses and training programs;
- National health research policy formulation and revision;
- National health policy formulation and revision;
- National health plan formulation and revision;
- Disease outbreak management and control;
- The development of national strategies for various public health programs, etc. **[B3-A12].**

To tackle the general challenges of the healthcare delivery system, we have to reckon that **all three players in the tripartite are of equal importance,** although each player has a unique role to play. In solving or overcoming the challenges, the principles of thinking outside the box, practicing epidemiologic thinking, showing mutual respect during the discussion, initiating fact-finding rather than fault-finding tactics, and applying the systems approach and systems thinking should be practiced. **[B3-A3].**

We need to promote intensified collaboration between the health ministry and the UN agencies. Countries have not yet developed a **"Mosaic of Activities Supported by the UN (WHO, UNICEF, UNFPA, UNODC, UNAIDS, UNOPS, etc.) and Other External Entities"** in terms of technical and geographical areas. If we can develop a mosaic of activities, we may be able to reduce the redundancy of activities. **[B3-A11].**

Collaboration with communities is important. The community's sense of ownership over the health ministry's public health initiatives is what drives community participation. There should be a **"National Strategy on Improving Community Participation and Community Health." [B4-A1].**

The participation of the community would not happen on its own. Several elements, among others, can strengthen the **process of community participation.** Here are some of the elements:

- People who live in a particular geographic area should be adequately informed about the common diseases that are prevalent there in terms of modes of transmission, early signs and symptoms, preventive measures, etc. They should also be informed of concrete steps or general measures they could take to help improve their community's health;
- The existence of a well-managed network of community-based organizations;
- Availability of a practical and unambiguous line of communication among community-based organizations;
- The existence of a platform or channel of communication between representatives of community-based organizations and the local health officials who are in charge of that region or province;
- To increase people's level of health awareness, opportunities for regular health talks by responsible health staff in the community should be made available. This might increase local residents' interest in and involvement with health-related matters. General practitioners in the area who are well-liked by the local populace should, if possible, present health talks;
- The responsiveness of the health team to health problems or challenges that the community may be experiencing should be prompt and efficient;
- Community-based basic healthcare providers at the community level should be knowledgeable about health issues, understandable to people, practice amicable dealings, and be ethical;
- The existence of a community-wide sentinel disease surveillance system that is well managed;
- Presence of a network of local NGOs working in the field of health;
- Strong collaboration, at different levels of the healthcare delivery system, among concerned departments of the health ministry, the veterinary department, the water and sanitation department, the municipal corporation, and community-based organizations for early detection of communicable and zoonotic diseases;
- The people's knowledge on health matters is crucial for them to participate proactively, and a strategy to promote the health literacy level of the population should be fielded simultaneously;
- The community's young people need to be well-informed on the risks associated with consuming salty meals, excessively sweetened foods and beverages, excessive alcohol use, chewing and smoking cigarettes, etc. They will become interested in health issues as a result. These might result in a greater number of health-conscious individuals;
- A mass sports campaign with the slogan **"Exercise is Medicine"** can also help increase community participation in health activities;

- Biennial conduct of a national seminar on promoting community participation and community health;
- Theexistence of a user-friendly website for the health ministry would be an advantage for community-based organizations and the population to get involved in disease surveillance and other public health initiatives. **[B4-A1].**

Whatever the circumstance, **a sense of community ownership** over the health initiatives or programs is the key factor in boosting the momentum of community participation in disease surveillance and public health initiatives. **[B4-A1].**

The participation of the community would not happen on its own; the existence of a **well-managed network of community-based organizations** is crucial to having robust community participation in several health initiatives conducted by the Ministry of Health. **[B4-A1].**

The key to improving community participation is that there should be a **"National Strategy on Improving Community Participation and Community Health."** The importance of community participation should be appropriately reflected in national health policy. **[B4-A1**].

To enhance the effectiveness of the work of external entities in the country, we need to **map and scout their work** in terms of:

- Broad technical areas, giving support for any duplication and redundancy of work;
- Detailed projects and activities carried out in the country for consideration of future collaborative works;
- Geographical areas covered to assess its appropriateness;
- Amount of funding actually used for various activities to know the priority areas of support received by the population;
- Salary and expenses used by local and expatriate staff to know the administrative *versus* activity budget allocation ratio;
- A quick review of the last annual reports of the external entities for chalking out future collaborative activities;
- Detailed review and follow-up of the MoU concluded between the health ministry and external entities;
- Cross-referencing the activities mentioned in the MoU with the real activities implemented at ground level;

- Review the networking scenario of the health ministry with external entities;
- Interview with senior officials of external entities and also with operational-level responsible staff to know their general and specific viewpoints. **[B2-A15].**

"Annual Review Meeting on Work of External Entities" would be very useful for the country. We need to have a clear-cut policy on working with external entities. This should be formulated as soon as possible. All developing countries should have a clear-cut policy on external entities. **[B2-A15].**

All the work of external entities should be **cross-referenced with:**

- National Health Policy;
- National Health Research Policy;
- National Health Plan;
- Major strategies for various health programs of the ministry;
- Agreed upon work plans as mentioned in the MoU. **[B2-A15]**

3.4. Standard Operating Procedures and Guidelines: Streamlining the Tasks

General comments. In the fields of public health and clinical medicine, **standard operating procedures and guidelines (SOPs and GLs)** are fundamental building blocks for achieving safe and high-quality management of patients, and the beneficiary population will then receive safe and high-quality services. However, these SOPs and GLs need to be **updated on a regular basis.** A compendium of SOPs and GLs for public health and clinical domains should be made available in relevant health institutions. We must pay close attention to ensuring that all compendiums are posted on the Ministry of Health website.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

An annual review of SOPs and GLs used in the country ought to be conducted to improve the entire spectrum of work in this area of work. Prior to issuance, the SOPs and GLs ought to undergo thorough field testing. **[B3-A7].**

Training workshops on the **development, use, and evaluation of SOPs and GLs** should be held as appropriate in different domains and disciplines. Funding support could be easily obtained from the WHO. **[B3-A7].**

The **compendia of updated SOPs and GLs** used in various disciplines are generally not available in many institutions and hospitals. Some staff are not even aware of the availability of SOPs and GLs in their institutions and hospitals. **[B3-A7].**

SOPs and GLs, in addition to their technical contents, should **include the following information:** (i) the date of preparation; (ii) the name of the institution that produces them; (iii) a list of cited references, if applicable; (iv) if there is an updated version, refer to the previous one that should be discarded; and (iv) a phone number or email address for clarification, if applicable. **[B3-A7]**

Some **key facts** about SOPs and GLs are:

- Existing SOPs and GLs should be **reviewed or updated on a continuous basis**;
- SOPs and GLs should be properly **field-tested** before issuing them;
- SOPs and GLs should not only be **technically sound** but also have clarity, brevity, consistency, uniformity, and easy understandability;
- Updated SOPs and GLs should **mention the date of updating, references quoted, and the responsible professional or entity who updated them;**
- **Implementation research** should be carried out to assess the utility of SOPs and GLs;
- SOPs and GLs pertaining to public health should **refer to SOPs and GLs produced by WHO** and other relevant UN agencies;
- SOPs and GLs should be plastic-coated and **hung at eye level on the walls** of the respective workplaces. Make them easily accessible by responsible staff;
- SOPs and GLs are **lifesavers** in emergency departments of hospitals;
- **Final approval** of SOPs and GLs should be made by the **"Committee on SOPs and GLs";**
- An **annual review of SOPs and GLs** used in the country should be held to further improve the whole spectrum of work in this area of work. **[B3-A7]**

3.5. Research Promotion and Development: A Vital Component of the Health Domain

General comments. Progress in the research domain and the development of the public health and clinical domains are complementary. **Research findings are truly useful for improving various public health initiatives** as well as refining various treatment modalities. An atmosphere that is supportive of research scientists working in the clinical and public health domains should be specifically and unreservedly created.

We also need to enhance a research culture among public health professionals and clinicians, as well as paramedical personnel. In order to further promote the three main domains collectively, it is suggested to conduct an **annual review of key research findings** in the public health, clinical, paramedical, and other relevant domains.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Health research is essential for the development of any country, including the improvement of the health status of the population at large. **Research and development go hand in hand.** Development in any area cannot proceed smoothly without basing it on relevant research findings. This idea needs to be ingrained and inculcated among health professionals working at various levels of the health care delivery system. **[B1-Part B-A3].**

The **basic minimum generic checklist questions** to assess the research institution in order to give full support to health development in the country are as follows:

1. Is there a **national health research policy and strategy** in the country?
2. Are there **institutional review board (IRB)** guidelines on **responsible conduct of research**? if so, what is the level of adherence by researchers to these guidelines?
3. Are there institutional guidelines for **research ethics**? If there are, what is the level of adherence by researchers to these guidelines?

4. What is the level of performance of the **ethics review committee (ERC)** or **institutional review boards (IRB)?** Are there specific guidelines for members of the ERC and IRB? Is the membership of the ERC and IRB well balanced in terms of technical disciplines?
5. Are there institutional guidelines on **good research management practice**? If so, what is the level of adherence by researchers to these guidelines?
6. Is there a dynamic and comprehensive **research information system** in the research institution? Is research prioritization a common phenomenon for the institution?
7. Are there regular and systematically run **research capacity building programs** for various domains of research and research mentoring programs? Are there reviews and assessments being made from time to time?
8. Are there clearly defined **pathways for the career development of researchers?**
9. Are there **regular forums for the presentation of research findings by researchers?** Some examples are research symposiums, research congresses, research seminars, etc.
10. Are there opportunities for young researchers to publish their papers, such as in **research bulletins and research journals**?
11. Is there an annual report of the research institution being issued regularly? If so, is any analysis being made on the annual report from time to time, or is there an **analytical section in the annual report?**
12. Is there any **resource flow analysis for research** being done?
13. Are there **sister research institutions** or networking among research institutions inside the country as well as with research institutions outside the country?
14. Is there a **researcher exchange program** with other research institutions (both in-country and abroad)?
15. Does the research institution have a **research enabling environment?**
    [B1-Part B-A1].

The above set of **15 checklist questions** was framed in the context of research institutions in developing countries. A separate review should be made to **assess the research infrastructure** of various sub-domains of research, applying the checklist as well. Each of the above **15 checklist questions** can be further expanded to explore more in detail regarding the performance of various sub-domains of research. **[B1-Part B-A1].**

Each research institution should be guided by a variety of **institutional guidelines and systems of work**, such as:

- Availability of an updated vision and mission statement;
- Availability of updated institutional research ethical guidelines for its researchers;
- Availability of updated institutional guidelines for responsible conduct of research;
- Dynamic institutional framework for research information systems;
- Availability of updated institutional guidelines for establishing good research management practices;
- General guidelines for establishing regular capacity-building activities (both intramural and extramural) for incoming young researchers, together with an effective mentoring system for them;
- Guidelines for networking with other research institutions both within and outside the country;
- A system of career ladders for researchers;
- A system of researcher exchange programs between research institutions as well as with health institutions, both nationally and internationally;
- Presence of a regular forum or platform for researchers, clinicians, and public health professionals, especially for identifying research agendas and research utilization;
- Presence of a practical and down-to-earth research monitoring system;
- Framework for resource mobilization, rational resource allocation, and resource flow analysis annually;
- Compulsory issuance of the annual or biennial report of the research institution, including a chapter on critical analysis of strengthsand weaknesses and suggestions for research planning and improvement. **[B1-Part B-A2].**

Implementation research could help improve the efficient translation of health policies, strategies, and interventions into reasonably acceptable actions. Conducting implementation research on the healthcare delivery system can also foster a sense of belonging among the staff who run health programs. **[B3-A15].**

Public health and research domains are inherently linked and support each other positively. The smooth functioning of the health research domain is essential to fast-track the efficient performance of the healthcare delivery system in the country, which is necessary for improving the overall health status of the population. **[B1-Part B-A2].**

The public health functions, in particular, can be improved to a greater extent by applying the findings of **implementation research. [B1-Part B-A2].**

Implementation research can assist in **streamlining logistics, management, and administrative aspects** as well as enhancing the technical perspectives of various projects and programs in the healthcare delivery system. **[B1-Part B-A2].**

The strength of the research domain depends on the availability of several **key factors,** such as:

- Sound and rational national health research policy and strategies;
- Technical capability and capacity of researchers;
- Presence of a system of good research management practices;
- Dynamic research information system;
- A well-established research culture not only in research institutions but also in schools and universities;
- Effective networking among research and health institutions;
- Practicing responsible conduct of research;
- A well-established and strong **ethics review committee (ERC) or institutional review board (IRB);**
- Adhering to research ethics in conducting research;
- Dynamic research monitoring system for technical, management, administrative, logistics, human resources, infrastructure, and financial aspects of research;
- Broad-minded and forward-looking senior research managers who execute good research management practices **[B1-Part B-A2].**

Resource flow analysis in research is required to elicit the situation and trend of the funding scenario so that appropriate remedial measures and due attention can be made for its growth and sustainability. **[B1-Part B-A2].**

The **health research information system (HRIS)** is the backbone of any health research system and helps to make it function efficiently. What should we do to improve the HRIS? **[B1-Part B-A4].**

The HRIS should at least include the following entities: **Key components of HRIS** are:

- Trend of resource flow to different disciplines of research;
- Resource mobilization pattern and status;
- Availability of human resources for research and its trend;
- Research training or capacity-building activities (intramural as well as extramural) are being conducted, including researcher exchange programs being initiated;
- Details of the research projects being conducted: List of research publications, discipline-wise;
- Research infrastructure;
- Records of challenges being faced by the research institution;
- Various perspectives on research management, etc. **[B1-Part B-A4].**

Having a **comprehensive HRIS** can lead to several benefits to the domain of research, such as:

- Reducing the administrative burden;
- Providing up-to-date information on research and research management-related issues;
- Obtaining streamlined, single-point access to research information;
- There is a greater chance of getting financial support from funding agencies and technical collaboration from big research organizations or institutions;
- Facilitating responsible conduct of research **(RCR);**
- Reducing fraud and unwanted manipulation;
- Facilitating good research planning and research strategy formulation;
- The ultimate benefit is the availability of decision-making information for professionals working in service departments of the Ministry of Health, who should, in fact, be the real users of research information. [**B1-Part B-A4].**

There are many public health programs or projects being implemented in developing countries. **Built-in implementation research activities** are not commonly incorporated into these programs. Generally, program staff consider the conduct of implementation research as an extra burden for them, not realizing the fact that it could improve the effectiveness and efficiency of their programs or projects they are managing. **[B3-A15].**

Programs or activities to **inculcate a research culture** among the staff of the Ministry of Health are not widely available. Collaboration between researchers and health program implementors needs solid backing from senior officials of the Ministry of Health. There are no regular capacity-building training programs on research in general for health program staff. **[B3-A15].**

3.6. Checklist Questions: A High Utility Entity

General comments. Using checklist questions (CQ) is the quickest and most cost-effective method of knowing the initial situation of the problem or issue. If actions cannot be taken based on the information obtained, we can do key informant interviews and focus group discussions. We can conduct quantitative and qualitative surveys to know the situation more in depth. Because of its high utility, we may develop a CQ repository. We need to promote the culture of using CQ among the staff. It is crucial to remember that the generic CQ should always be followed by some additional probing questions and succinct descriptions of the problem, issue, or scenario in order to gain a deeper understanding of it. The person who uses the CQ as well as the respondents to the CQ should be sincere and unbiased. We need to do it systematically and in such a manner that it will create the least amount of bias in the whole process. **Using CQ to divulge the situation is an art,** and we need to improve the process as we go along.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The findings arising out of the CQ are very useful input for the **development of a framework** for conducting implementation research. **[B4-A20].** The **ready-made CQ database** should be established, and it can serve as a bank from which we can draw a particular set of CQ for eliciting a situation when necessary. CQ stored in the CQ bank should always be fine-tuned and updated. **[B4-A20].**

The benefits of using **pre-prepared CQ** are numerous. We will know the situation in question within a week or so. Based on the preliminary information, we can initiate a series of actions to improve the situation or at least stop it from deteriorating. As a second step, if necessary, we can do an in-depth review by conducting a full-fledged survey, key informant interviews, focus group discussions, brainstorming sessions, implementation research, etc. The information received from CQ is also useful for crafting the terms of reference or objectives of the evaluation mission for a specific issue or scenario. **[B4-A20].** The **development and use of CQ** is one of the quickest approaches to knowing the initial situation of the problem or issue, and thus immediate and preliminary action can be taken to improve it. The use of **ready-made checklist questions** is a great way to quickly evaluate a variety of entities, including the performance of health staff, scenarios related to public health, hospital care, the operations of health centers, and any grassroot health-related activity. **[B4-A20].**

Generic CQ should be framed based on the following entities, at least, such as:

- What is the overall scenario for the problem or issue at hand?
- What is really happening on the ground?
- Is there any likelihood that the situation may improve?
- Is the situation under control, improving, or deteriorating?
- What are the problems (root causes) leading to this situation?
- What are the challenges noted?
- Why does this problem or issue keep happening?
- How serious is the problem or issue?
- What steps is the health ministry currently taking to resolve the problem or issue? **[B4-A20].**

The **generic sections of the CQs** set typically should include the following items: **[The whole list of CQs can be seen in B4-A20.]**

- Technical;
- Administrative and management;
- Logistics;
- Supplies and equipment;
- Human resources;
- External support in terms of technical, financial, and material resources;
- Availability and use of SOPs and GLs;
- Funding situation and utilization pattern;
- Probing questions to know the root causes, etc. **[B4-A20].**

A.4. EMERGING AND URGENT MATTERS

4.1. Prison Health Care: Unmet Health Needs be Fulfilled

General comments. We will be failing in our obligations under medical ethics if we do not give the required healthcare to the inmates with humanity and morality, regardless of the reasons for their detention. This particular group of people has certain intrinsic characteristics (such as physical and mental behavior, attitude, thought process, outlook, aim, etc.) that are slightly different from those of the general population. Aggressiveness and an unwillingness to fully listen to suggested actions are two of the major challenges experienced by the health staff working in prisons. As a result, we have to strategize our actions accordingly. It is worthwhile to develop a **"Health Package for the Inmates"** to take care of the inmates' health in the context of developing countries.

It would be unethical if the relevant health personnel assigned to each prison ignored the inmates' preventive, promotional, curative, rehabilitative, and even mentally uplifting activities. If inmates could continue their healthy habits after being released from prison, they would **benefit the broader populace. [B4-A7].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Inmates are frequently housed in groups in crowded cells. It is essential to carry out the **necessary public health work** to prevent disease outbreaks and the transmission of common infectious diseases. It can spread quickly and might easily spiral out of control, particularly if it involves the respiratory system or involves airborne transmission. **[B4-A7].**

In a developing country or in a situation with limited resources, it is worthwhile to consider **seventeen activities** to be done in prisons.(not in order of importance).

1. To quickly and thoroughly **assess the health-related issues** in each prison using checklist-style questions in collaboration with the medical team assigned to each prison.
2. A quick assessment of the **environmental and sanitary conditions** inside the prisons and the compounds of each prison should be conducted. The inmates should maintain the sanitation of the prison grounds and the cleanliness of the restrooms.
3. The **capacity and capability of the health unit** in each prison should be assessed. The inmate referral systems to general and tertiary care hospitals should be reviewed and improved.
4. It is important to emphasize the need for incorporating **medical, nursing, and public health ethics** into the everyday work of the medical staff assigned to each prison. These knowledge-sharing training sessions ought to be led by the pertinent personnel of the Department of Public Health.
5. The **job descriptions** of each category of health staff working in each prison should be outlined with guidance from the relevant senior officials from the Department of Public Health. All vacant posts for health staff in prisons should be filled to the extent possible. Appropriate capacity-building training courses should be given to health staff working in prisons.
6. A **sufficient budget** should be made available to enable the timely acquisition of the supplies and equipment needed for health-related activities to be carried out in prisons. It would be ideal if each prison had a gymnasium. The prisoners' long-term health must be considered.
7. There should be **mandatory morning free-hand workout sessions**. Quick, five-minute talks on exercise and health should be delivered before the morning exercise sessions (physical and mental).
8. The inmates should also be informed of the numerous **benefits of regular exercise** or physical activity in terms of cardiovascular health, bone and muscular strength, lung health, psychological wellbeing, body immune system improvement, mental health, etc. As and when necessary, a formal communication in the form of a lecture should be given. Senior inmates who are knowledgeable and well-educated in health matters should give health talks to the inmates. Officials from the Department of Public Health should draft the talks' language and outline. Finally, the transcripts of the talks should be fine-tuned and compiled, and a printed version should be made for future reference to be used in prisons all over the country. It should also be updated regularly.

9. Various types of **intramural sports activities** should be promoted. Sporting equipment should be made available through donations from well-wishers or other means.
10. C**ounseling services** should be made available for depressed and psychologically disturbed inmates.
11. If necessary, before transferring **infectious disease-suffering inmates** to the infectious disease hospitals, an isolation ward in the prison should be made available to stop the spread of infectious diseases in prisons. The isolation ward's conditions should be evaluated and improved.
12. The **foods served to the inmates** should be assessed as part of a balanced diet. It will also depend on the budget's availability. Kitchen sanitation, including food storage systems, should both be properly maintained. The health of the cooks should be assessed, and they will get any required health counseling. The SOPs and GLs for food storage and preparation should be provided to them for reference.
13. **Religious activities** for different religions, although not mandatory, may be allowed to be practiced.
14. To find out about **inmates' overall perceptions of the prison environment,** an assessment study should be conducted annually using qualitative methodologies such as inmate interviews, focus group discussions, and key informant interviews with senior inmates. The responsible staff members of the Departments of Public Health and Prisons should analyze the results and make the necessary improvements.
15. In **coordination** with responsible representatives of the Departments of Public Health and Prisons, inmates should get routine health examinations. As many of the inmates may have diabetes, hypertension, or other chronic diseases, health talks regarding these diseases should be given. As the inmates have ample time, we can even have a small booth where health-related pamphlets and books may be made available for them to read. The inmates should pass their prison time gainfully.
16. The **personal hygiene** of inmates should be given due attention, and required health information will be given (dental health, menstrual health, skin health, eye health, sexual health, etc.). There should be a plentiful supply of water available for inmates to bathe. A center for the dissemination of critical health information should, wherever possible, be open for business at a specific time each day.
17. **Six-monthly brainstorming sessions** between officials of the Departments of Public Health and Prisons should be organized in an effort to improve the general quality of health services offered to inmates in all prisons throughout the country. **[B4-A7].**

We must ensure that inmates who suffer from chronic illnesses like diabetes, autoimmune disorders, tuberculosis, HIV/AIDS, hypertension, cardiovascular disorders, and other ailments have **access to long-term medications. [B4-A7].**

Nonetheless, it is our duty to **safeguard inmates' inherent dignity as human beings** and treat them with humanity and morality, regardless of the reasons for their detention. The medical staff who operate in prisons should strictly abide by the ethical norms of medicine and public health. From the perspective of public health, we must create practical preventative and health promotion programs in prisons in collaboration with the relevant officials of the Department of Prisons. **[B4-A7].**

Providing inmates with adequate health care for their wellbeing includes ensuring that they will be in good health, knowledgeable about good health, and leading healthy lifestyles when they are released from prison. We must treat inmates as a **distinct population with unique characteristics** and special healthcare needs. **[B4-A7].**

4.2. Caring for Internally Displaced Persons: Too Unethical to Ignore

General comments. The UN had enunciated certain principles regarding IDPs, i.e., **"IDPs shall enjoy, in full equality, the same rights and freedoms under international and domestic law as do other persons in their country." "They shall not be discriminated against in the enjoyment of any rights or freedom on the ground that they are internally displaced."** As a result, when we provide them with healthcare services, we must adhere to these values. Even if there will be difficulties in providing equitable healthcare services to the IDPs, we must nevertheless do it in accordance with our principle of medical ethics. It should nevertheless be remembered that every IDP camp is different. **[B4-A9].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Healthcare services for the IDPs represent a vast domain, and the provision of **basic essential activities** is mentioned below for consideration. There are at least seventeen important activities that we should do when we are managing the IDP camps. **[B4-A9].**

It is somewhat like healthcare services given to a small town. Depending on the allowable situation, we need to start the ball rolling as quickly as possible. It may not be possible to do some of the below-mentioned activities. However, every effort must be made to render health services to IDPs. The following **seventeen activities** may be considered:

1. A quick assessment of the **general health conditions** of the IDPs, including a rapid mental health assessment;
2. A quick assessment of the **general characteristics of the population**, as mentioned above, using appropriate and practical approaches;
3. A quick assessment of the **environmental sanitation situation** of the IDP camps, as mentioned above, using appropriate and practical approaches;
4. Establish **a small clinic** to treat common diseases and explore the availability of required medicines and basic medical equipment. All health needs should be identified and met as much as possible. Try to scout out the possibility of getting health staff to run this. If medical staff were available in the IDPs, it would be an advantage. Commonly used medicines (oral, parenteral, and topical), medicines for emergency care, insect bites, food poisoning, extreme diarrhea, cholera, anti-tetanus toxoid, and freeze-dried anti-snake venom (ASV), should be made available. (If possible, supplies and equipment required for a rural health center should be made available.) Reproductive health, elderly health, and child health issues need to be taken care of as well. The establishment of the clinic is a very important part of the healthcare services to be delivered to the IDPs;
5. Practical **treatment guidelines** for common diseases that can occur in IDP camps should be made available, such as treatment for (i) snake bites; (ii) TB, HIV/AIDS, and malaria; (iii) insect bites; (iv) common skin diseases; (iv) hypertension and common heart diseases; (v) epilepsy; (vi) depression; (vii) diabetes; (viii) nutritional deficiencies; (ix) severe diarrhea; (x) medical emergencies, etc. Guidelines for first-aid care for various ailments or accidents should also be made available;

6. Develop **a realistic and attainable action plan** for weekly health discussions with the IDP by health staff or health-related persons from among the IDPs. If we can do it effectively, there will be a reduction in the incidence of many common diseases. This practice is crucial since poor health literacy can result in a variety of untoward health conditions;
7. Create a weekly timetable for **environmental cleanliness tasks** that the IDPs themselves will perform, such as appropriate garbage disposal and maintaining sanitary latrines;
8. Assign one person to **monitor the overall health scenario** of the IDP camp, and based on that, necessary actions can be taken;
9. To the greatest extent practicable, an effort should be made to give the IDPs a **sense of ownership** over public health initiatives to be carried out in the camp;
10. Consider **a functional patient referral system** for those patients that cannot be treated at the clinic in the community;
11. **Work closely with UN agencies** such as UNHCR, UNICEF, WHO, and other relevant organizations and the social welfare department to get additional financial and material support;
12. Take into account providing **mental health support**, as many people may experience anxiety disorders and insomnia;
13. Distribute the department of public health-produced **health leaflets** if at all possible;
14. Create **a patient registry** and a proper record of all the clinic's actions as well as public health activities so that they can be referenced in the future and for the improvement of healthcare services given to IDPs;
15. Get a list of IDPs who are taking **maintenance medications for chronic diseases** like tuberculosis, HIV/AIDS, hypertension, cardiovascular disease, diabetes, etc., and explore getting the medicines;
16. Ensure that married couples can obtain **contraceptive pills;**
17. If at all feasible, eligible youngsters should receive the necessary vaccination. **[B4-A9].**

There will be **a mountain of challenges** in delivering healthcare services to the IDPs. The main issues are security and the extreme anxiety and stress of the IDPs in the face of many requirements that cannot be fulfilled. Be that as it may, the person responsible for rendering healthcare services should collaborate and coordinate with local NGOs to the extent possible. **[B4-A9].**

4.3. Decision-Making in the Health Domain: Serious Attention be Accorded

General comments. Decision-making in public health is **a very intriguing and challenging subject.** It has a substantial impact on the scope, direction, coverage, efficacy, effectiveness, efficiency, and impact of public health efforts on the populace. The selected choices must be unbiased, reasonable, and consistent with epidemiological and public health ethical norms. Decision-making in public health has to be done judiciously, as it has big impacts on the population.

As much as possible, we should go for **evidence-based decision-making** that entails that the decision should be based on reliable, valid, timely, and repeatable facts and information in light of the existing epidemiological situation, capability and capacity of human resources for health, funding availability, and health condition of the community. **[B3-A30]**.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

In the field of public health, during the **process of decision-making**, we need to consider the following:

- Is it really necessary to make the decision to change or modify the policy, strategy, and interventions pertaining to the public health field?
- What are the potential short- and long-term consequences or ramifications for the population, people living in a specific area, or groups of people with similar characteristics?
- What extra expenses would the Ministry of Health entail?
- Could the new tasks, activities, or interventions be completed by my staff?
- Will my decision have negative repercussions on other public health initiatives?
- Does my decision conflict with the Ministry of Health's primary strategies and the current national health policy?
- Have I completed the necessary planning so that I can put my new decision into action?
- How should I monitor whether the new decision is effective?
- Does my decision align with the guiding principles of public health ethics?

- In light of epidemiological concepts and public health standards and norms, is my decision technically sound?
- Do I need to provide the personnel with additional orientation training as a result of my decision?
- Do I need to create new SOPs and GLs in light of the decision I made? etc. **[B3-A30].**

In the event of an epidemic or pandemic, public health and clinical decisions should be made very quickly. Numerous deaths could occur from a bad decision, and an outbreak or pandemic could go haywire. Therefore, **group decision-making** should be the order of the day during epidemics or pandemics instead of individual decision-making. It must be underlined that during an epidemic or pandemic, all decisions should be based entirely on accurate, timely, and reliable data and information. **[B3-A30].**

Another fundamental aspect of public health is holistic viewpoints. A **holistic perspective or holistic approach** should be at the back of our minds when we are going to analyze a novel, changing, or even static situation. Whatever the case may be, data and information are essential ingredients if we want to make rational decisions in public health. **[B3-A30]**

In any circumstance, **professional and innate judgement, or conscious reasoning,** should be applied in the field of public health. The following facts should always be at the back of our minds when we make public health decisions:

- The differences in benefits that can be attained for different population groups;
- Morbidity reduction *versus* mortality reduction with reference to the size of the beneficial population;
- The relative importance of short-term *versus* long-term benefits;
- Social benefits *versus* economic benefits;
- Acceptance by the population *versus* acceptance by public health professionals;
- A higher work load for health staff *versus* a lower work load for health staff, etc. **[B3-A30].**

Public health decision-making is a very important topic in the field of public health. The **complexities and nuances of the decision-making process** should be well understood by all public health professionals, from the highest level down to entry-level healthcare service providers. The varied viewpoints on the public health decision-making process should be made available on a variety of platforms, including seminars, symposiums, and lunchtime discussions in health institutions. **[B3-A30].**

4.4. Healthy Population: Our Penultimate Goal

General comments. To enhance the health status of the population, all stakeholders should work together under the effective and realistic strategic directions of the national health policy. More attention should be given to those living in remote and hard-to-reach areas of the country. A favorable political environment is also required. Achieving health security is contingent upon the nation's overall security. The population's health status can be improved only through public health actions based on the **principles of public health and the foundations of epidemiology and allied sciences. [B4-A13].**

The role of the population in improving the overall health status of the country should not be underestimated. The **contribution from the population**, especially in the field of public health, can be very dynamic, focused, forceful, and sustainable. If we know how to effectively handle and shape this hidden force, it is highly likely that many public health interventions will achieve their intended goals. **[B2-A10].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

One of the basic tenets of the public health domain is that the **level of the health status of the population is generally and directly proportional to the quantum of knowledge on determinants of health and translating that knowledge into practice by the population at large. [B2-A2].**

The key to improving the overall health status of the population in any country is the quality implementation of an **optimal mix of cost-effective public health interventions** within the framework of an efficient healthcare delivery system. **[B1-Part A-A13].**

Depending on the changing epidemiological situations, socioeconomic status of the population, health literacy level of the population, and trend of the health situation of the country or area, we may need to **adjust the already implemented public health interventions** in order to have a positive impact on the population. **[B3-A2].**

The following **key interventions** should be carried out rigorously to ensure a healthy population in the coming years or decades. The below mentioned health programs should be given priority because they cover large population groups:

- Increase vaccination coverage for childhood vaccine-preventable diseases;
- Strengthen the activities of programs for early prevention, detection, and treatment of chronic and non-communicable diseases;
- Intensify the activities of school health programs to have health-promoting schools all over the country and conduct regular school health surveys;
- Intensify the activities of population health literacy promotion programs;
- Intensify the activities of maternal and child health programs;
- Intensify the activities of nutrition promotion programs;
- Promote the activities of **"Exercise is Medicine"** programs;
- Intensify the activities of alcohol and drug abuse control programs;
- Intensify the activities of programs on prevention, early detection, and control of cancers;
- Intensify the activities of adolescent health care programs;
- Intensify the activities of communicable disease prevention and control programs;
- Intensify the activities of communicable and non-communicable disease surveillance programs;
- Intensify the elderly health care programs. **[B2-A21].**

One of the major determinants of achieving good population health is that we need to have a very sound and realistic **"National Health Literacy Promotion Strategy"** for the country. We all should be striving towards having this strategy. It will take time to improve the health status of the population, but it is an achievable goal. **[B2-A21].**

Health professionals (both public health and clinical) generally consider interventions from their perspectives about how much they can contribute to the benefit of the community and patients. Consideration from the **point of view of the population** is essential. We tend to forget the enormous force that the population can contribute from their side of the coin. **[B2-A10].**

There are myriad factors affecting the health status of the population. All these factors need to be taken into account when we are formulating responsive, effective, and dynamic public health interventions. To achieve this, we need **input and ideas from different players** and from different perspectives. **[B3-A2].**

The **crystallization of new ideas and thoughts** can only be achieved if we think collectively. The viewpoints shared by different parties should be carefully noted and considered in light of the existing epidemiological situations in the health domain and beyond. The viewpoints of the population are no less important than the viewpoints given by various health professionals. In other words, the role of the population is pivotal in many activities of the HCDS. **[B3-A28].**

It is a reality that the most cost-effective way to enhance the general state of the population's health is to promote public health. **Collaboration and coordination amongst the stakeholders** are essential to promoting public health. Even if it is a difficult endeavor, it is not insurmountable. **[B3-Preface].**

The following interventions can be initiated to strengthen the **role of the population** in improving the overall health status of the population:

- Increasing the health knowledge base and expanding the knowledge horizon of the population;
- Establishing more networks of local population groups for health promotion in various geographical areas;
- Appreciating the work done by local population groups;
- Distributing health knowledge materials, handouts, and posters to local population groups (in local dialect) and asking them to give comments for further improving these materials, i.e., asking them feedback to have a sense of ownership;
- Conducting national or several regional seminars on t**he role of local population groups in promoting the health status of the population;**
- Discussing with local population groups when a new health initiativeis launched. **[B2-A10].**

The health ministry should have **a special icon on its website** where all the contemporary key health information is put up in layman's terms. It is important that correct and valid health information be conveyed to the population. All the health myths must be clarified. This could increase the population's understanding of the health issues they face. **[B2-A10].**

School children are part of the total population in the respective geographical areas. Some basic health promotion and common preventive measures for communicable and non-communicable diseases, mode of disease transmission, anatomy and basic physiology of human body and knowledge on key physiological changes as they grow up, nature and spread of sexually transmitted diseases, early signs and symptoms of common diseases and conditions, the importance of personal hygiene including dental health, menstrual health, eye health, skin health, micronutrients, and nutrition-related information, the relation between types of food taken, food eating habits and healthy body, immediate and long-term dangers of taking tobacco products, alcohol, and narcotic drugs usage, how to practice healthy lifestyles, the importance of doing regular exercise as per the motto of the Ministry of Health and Sports, **"Exercise is Medicine"**, should be embedded in the curriculum of primary, middle and high schools. Depending on the need, it could continue to the university-level curriculum, where the emphasis to be given may be different. If the **"Exercise is Medicine"** motto is translated into action and practiced regularly, it could have an unbelievable positive impact on the health of the student population. **[B2-A6].**

This **investment of some amount of hours** out of the regular study period time of students will pay a very big dividend in the long run. Millions of students attending primary, middle, and high schools all over the country will become health-conscious adults or healthy adults and practice healthy lifestyles in later life. This will be the biggest asset that the country will ever have for the overall development of the nation. A healthy cohort of pregnant women will be in the country, which could lead to healthy newborn babies. An increase in healthy working-age groups can also augment productivity in many sectors, be it economic, commerce, industry, administration, education, or health. **[B2-A6].**

The students, a sizeable percentage of the population, should also be informed about **"Exercise is Medicine,"** and the multiple benefits of doing regular exercise must be well understood by them. Once we have this very large cohort of healthy school-going children, **the health security of the adult or university student population** can be ensured. If we have this large and health-literate student population, the overall health situation in the country will definitely improve. There will be less morbidity from many diseases, and premature deaths can also be averted. This would have saved millions of kyats or dollars, as we do not need to provide treatment for their infirmities. The extra money thereby accrued could be used for procuring advanced diagnostic equipment, modern laboratory apparatuses, state-of-the-art radiological and radiotherapy machines, etc. **[B2-A6].**

Going in the direction of having more and more **health-promoting schools** is a very cost-effective strategy. Detailed strategies must be developed jointly by the ministries of health and education. The implementation of ground-level health-promoting activities carried out in schools should be led by school teachers and student leaders and supported by the health staff. The purpose is to have a strong foundation and sustainability in the activities of health-promoting schools. The ultimate aim is for the students to deliver health messages to their parents, uncles, aunts, relatives, and other family members. This has a very strong and positive domino effect on the population of the country. **[B2-A6].**

Proactive involvement of local population groups in health promotion activities is very important. We need to apply multidimensional, multisectoral, multidisciplinary, multifaceted, and multilayered approaches when the population dimension is involved in any public health initiative or health promotion activity. **[B2-A10].**

One clear-cut example is the immunization of children and the reduction in the incidence of vaccine-preventable diseases. When there are **outreach immunization sessions** in a community, the local population groups should help support the health staff in the following activities:

- Alert the parents of children eligible for immunization about the date and time of immunization and to bring their children to the outreach immunization sites;
- Enlighten the types of diseases that can be prevented from happening if the child is immunized;
- Propagate the risks of non-immunization;
- Explain to the public how much the government has spent on immunization programs and that the population should take full advantage of them.
- Inform them that if the child is not suffering from a vaccine-preventable disease, their growth, cognitive, and physical development will not be disturbed.
- Inform them that immunization is the easiest and best way to prevent many childhood diseases, etc.;
- Information about common childhood diseases, multiple benefits of immunization, dangers of vaccine hesitancy, malnutrition, the normal growth pattern of children, personal hygiene, environmental sanitation, worm infestation, infectious disease transmission, etc., should be given by health workers together with knowledgeable local population members. **[B2-A10].**

In essence, a strong connection between health professionals and local (community) population groups is required, like **an umbilical cord** attached between mother and fetus. We also need to strengthen the networking system of local (community) population groups. The sharing of information among the networks is desirable and should be promoted. **[B2-A10].**

In view of the important role that the population can play, especially in public health interventions carried out at the ground level, the health ministry should urgently formulate a national strategy on **"The Role of Population in Improving the Overall Health Status of the Country." [B2-A10].**

The wholesomeness and healthfulness of the food you consume now and the quantity of regular exercise you get now are directly tied to how healthy you will be as you age. Therefore, **"Exercise is Medicine"** and **"Think Before You Eat"** are two key mottos to live by. This message should be propagated to the population at large through various platforms. **[B2-A10].**

A.5. NEGLECTING THESE ENTITIES WILL BE COSTLY

5.1. Diabetes and Cardiovascular Diseases: A Problem that Needs Extraordinary Attention

General comments. Diabetes and cardiovascular diseases (DCVD) are both on the rise worldwide. There is no exemption for developing countries. DCVD prevention and control must be given **top national priority** because they not only consume a significant portion of family income and the national budget but also have several unfavorable effects on the affected families. People's QALYs can be greatly decreased if we do not take care of the prevention and control of DCVD. The investment made in the prevention and control of DCVD will have long-term benefits for the population in many aspects. It is one of the most cost-effective health programs of the health ministry. **[B4-A10].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

To address the increasing incidence of diabetes and cardiovascular diseases, there are two key areas where we can take action. The first involves **altering the trajectory of DCVD** case load through intensive case finding and appropriate treatment, and the second entails **lowering the incidence of DCVD** among young people who do not already have it. There are several interventions to do it. **[B4-A10].**

In order to reduce the case load of DCVD, we should formulate and implement two major strategies, i.e., the **"National Strategy for Prevention and Control of DCVD" and the "National Strategy for Health Literacy Promotion."** It is crucial that the strategies be realistic and practical, not theoretical. These should be implementable with the available resources in the context of a developing country. **[B4-A10].**

Whenever we **formulate national strategies for DCVD control**, the following factors should be considered:

- Available human and financial resources of the health ministry;
- Existing levels of health literacy among various demographic groups;
- Proactivity and networking situations of community-based health organizations;
- The readiness, responsiveness, and operational status of health centers in the country;
- The level of emphasis given on DCVD in the curricula of institutions teaching medicine, nursing, public health, and community health;
- The amount of basic health knowledge included in the curricula of primary, middle, and high schools and universities;
- The amount of time allotted for physical education and athletic competition in primary, middle, and high schools, including intramural, interschool, and interuniversity sport events;
- The degree to which the Ministries of Health and Education collaborate to create **"health-promoting schools and institutions"** throughout the nation;
- The availability of gardens or outdoor spaces with pathways for biking, walking, etc.;
- The accessibility of publicly funded gymnasiums for the general public;
- The existence of the **"Preventive Cardiology Program"**;
- The degree of proactiveness of the health literacy promotion unit in the health ministry;
- The degree of collaboration between the Ministry of Health and the Ministry of Sports and Physical Education;
- Availability of a checklist-type monitoring system for DCVD prevention and control programs;
- Allocation and utilization of budgets for DCVD prevention and control programs;
- Human resources for health in the scenario of DCVD prevention and control programs;
- The importance accorded to conducting implementation research;
- Availability of the report on the impact assessment of the DCVD program;
- The current pace of carrying out pertinent capacity-building activities;
- Availability of findings from significant surveys on DCVD during the previous three years;
- **Current report of the epidemiological situation of DCVD. [B4-A10].**

The benefits of regular physical activity or exercise on the overall health of a person, particularly for cardiovascular health and diabetes, should be discussed in several forums. This message should be communicated all the way down to the village level through a network of community-based organizations and basic healthcare providers. **[B4-A10]**.

Depending on the specific epidemiological situation of DCVD, we may consider implementing some **hand-picked specific interventions**, such as:

- Specific interventions to improve dietary habits (avoid excessively salty foods, over-sweetened beverages, fatty foods, and adulterated foods);
- Specific interventions to practice healthy social life styles (avoid excessive drinking and smoking, etc.) in the population;
- Specific interventions to make exercise a habit or live by the maxim,"**Exercise is Medicine"**;
- Specific interventions to manage a hectic and demanding lifestyle;
- Specific interventions to educate the populace about the significance of receiving DCVD treatment as soon as possible;
- Specific interventions to educate schoolchildren about healthy living and eating to prevent DCVD;
- Specific interventions to get early diagnosis and treatment of DCVD in the population;
- Specific interventions to promote health literacy about DCVD prevention in the population;
- Specific interventions to promote conducting implementation research for the effectiveness of the strategies;
- Specific interventions to promote the conduct of the **"Preventive Cardiology Program";**
- Specific interventions to strengthen the health literacy promotion unit of the health ministry;
- Specific interventions to strengthen collaboration with like-minded departments and organizations. **[B4-A10].**

5.2. Organogram of the Ministry of Health: A Typically Overlooked Entity

General comments. The Ministry of Health's organogram ought to be compliant with the national health policy and national health plan. It should be reviewed every five years or so to make sure it still aligns with the nation's healthcare landscape, the availability of human resources for health, and numerous other concurrent events both domestically and internationally. A small adjustment could be made as necessary. Obtaining **comprehensive views** from health program directors and lower-level health personnel operating at the rural level would be advantageous. Occasionally, the information they provide will be quite helpful.

Every ten years or so, there should be an organogram change. In fact, the structure of the Ministry of Health has a huge influence on the work performance of the ministry as well as the health conditions of the population at large.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The Ministry of Health must periodically make structural adjustments of the organogram due to the following reasons: delete changing circumstances:

- A shift in the epidemiology of diseases;
- Social fabric's transformation;
- Government policy changes;
- A change in the country's economic [scenarios] circumstances, either positive or negative;
- A changing trend in the number of human resources needed for health;
- Increasing demand for health services from the population;
- Rapid population growth and demographic changes;
- New advancements in the field of public health;
- Rapid sophistication in many aspects of the clinical domain;
- Repeated outbreaks of diseases;
- The emergence of new and re-emerging diseases;
- Pandemics caused by novel viruses with unknown natural histories;
- Development of sophisticated diagnostics;
- The availability of state-of-the-art treatment modalities;
- The political climate changes in the country. **[B2-A19]**.

The Ministry of Health's **structural reform is an ongoing effort.** It is essential, but it should be carried out judiciously with extreme caution, prudence, wisdom, cautiousness, and shrewdness, taking into account all input from concerned experts working in many health system disciplines and major players in the nation's health sector. **[B2-A19].**

The organogram, or structure, of the Ministry of Health should not be static, especially in developing countries. The organogram, or structure, may have been **perfect at the time of the last restructuring.** Strictly speaking:

- Due to changes in disease epidemiology;
- Transformation of social fabrics;
- Directional changes in overall government policy;
- Shifting in the economic conditions of the country, good or bad;
- Changing pattern of the requirement of human resources for health;
- Increasing demand from the population;
- Rapid population growth and shifting population structure;
- New developments in the field of public health;
- Rapid sophistication in many aspects of the clinical domain;
- Outbreaks of new diseases, the occurrence of emerging and reemerging diseases, and pandemics of novel viruses of uncertain natural history;
- With the emergence of advanced diagnostics and state-of-the-art treatment modalities, an organogram or structure review is needed everyfive years or so. **[B2-A19].**

The structural adjustment of the Ministry of Health is a **continuous process**. It should be done very carefully, judiciously, wisely, cautiously, and shrewdly, taking into consideration all inputs from concerned professionals working in different disciplines of the health system and major stakeholders in the health domain in the country. **[B2-A19].**

The structure, or organogram, of the Ministry of Health is related to the efficiency of the healthcare delivery system. Many administrative, management, and logistic challenges can arise due to the too-light or too-heavy structure of the Ministry of Health. **A structure that is too big is not conducive to having a good output or impact** from the ministry. The minor structural changes can be exercised as and when necessary. The structure, or organogram, may have been perfect at the time of the last restructuring. The appropriateness of the structure needs to be reviewed from time to time and adjusted accordingly. **[B3-A6]**.

5.3. Health Literacy Promotion: An Area of Greatest Importance

General comments. Health literacy promotion is one of the most cost-effective strategies to reduce the incidence and prevalence of many diseases. Health literacy promotion has been accepted by public health professionals as one of the important strategies in the field of public health to promote population health. Be that as it may, this strategy is not given as much importance as it should be. Health literacy promotion activities should be carried out together with translating the attained knowledge, or so-called **literacy, into action** by applying a series of health education sessions. This is one of the main duties of a public health professional. **[B2-A2]**.

We also need **to find the best approaches** to imparting health knowledge by applying various *modus operandi* for different population groups, different geographical areas, different ethnic groups, migratory populations, displaced populations, and different diseases and conditions.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

One of the **basic tenets of the public health domain** is that the level of health status of the population is generally and directly proportional to the quantum of knowledge on determinants of health and translating that knowledge into practice by the population at large. In that context, we need to give top priority to increasing the health literacy of the population. **[B2-A2]**.

Constructing the health ministry's website as user-friendly, population-friendly, current, reliable, and informative as possible is imperative in this era of advancing information and communication technology. Making improvements to the website should receive top priority. It is the health ministry's public face and representation. As much as possible, the **information should be made available on a real-time basis**. The web coordination committee's activity is immensely important. **[B2-A2]**.

Health literacy promotion strategies should be streamlined as per the evolving situation and various underlying social conditions. It is urgent that we develop realistic **"Health Literacy Promotion Strategies"** for the country. Health literacy promotion is, beyond doubt, one of the key strategies to improve the health status of the population. **[B2-A2]**.

The health literacy level of the population in developing countries is generally low due to several reasons. The incidence and prevalence of many communicable, as well as non-communicable diseases, could be reduced significantly by increasing the health literacy level of the population. However, health literacy promotion activities should be carried out together with translating the **attained knowledge**, **or so-called literacy** into action by applying another set of actions. This is one of the main duties of a public health professional. **[B2-A2].**

The population's health literacy in terms of **food consumption habits** is critical. Eating unhealthy, adulterated, or industrial dyes and toxic chemicals-tainted, over-sweetened, or salty food can lead to long-term negative consequences, such as an increasing incidence of liver diseases, kidney diseases, blood diseases, cardiovascular diseases, diabetes, and even malignancies. These undesirable effects on the population should be clearly informed in a simplified yet effective way through health education or health literacy promotion sessions for the population at large. **[B2-A2]**.

Well-trained health workers working at the ground level should conduct **health education-cum-discussion sessions** with a group of families at a time at the village level in the houses of the villagers. This could result in wide-ranging benefits, including cohesiveness between the health staff and villagers, and could increase the confidence of villagers in the staff. The positive impact of this initiative has been noticed. **[B2-A2]**.

The **health-seeking behavior** of a person not only depends on the health knowledge level of the concerned person but also on the knowledge level of family members, co-workers, friends, and relatives. It connotes the importance of health literacy levels across the population. In the public health domain, many factors are interrelated and connected. Each and every public health professional must note these basic facts. **[B2-A2]**.

The caveat is that **possessing health literacy alone will not lead to good population health**. It is essential to transform that knowledge of health or health literacy into appropriate actions. We need various strategies and approaches to make it happen. This is the responsibility of public health professionals. We need several discussion forums to derive the most appropriate solutions suitable to the country concerned. **[B2-A2]**.

5.4. Food and Drug Security: An Area Deserving Priority Attention

General comments. Every country needs a powerful and efficient **Food and Drug Administration (FDA)**. A sufficient budget should be allocated to the FDA for it to function well. The country's national health policy should highlight the significance and importance of food and drugs for population health. The FDA staff should note the fact that their actions have **long-term positive or negative impacts on the population's health in the country.** Strengthening the regulatory work of the FDA is essential for the general improvement of the health status of the population. The FDA's work is equally important as the preventive, promotive, curative, and rehabilitative activities for communicable and noncommunicable diseases carried out by the health ministry.

The effectiveness and efficiency of the FDA's work have a direct impact on the population's health, both now and in the future. Therefore, the FDA's broad range of actions must have the full support of the government. In addition, FDA staff should **abide by various ethical work principles. [B4-A8]**.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The services of the FDA in a country are crucial to the **population's long-term health development**. Concerted efforts ought to be made to increase the efficiency of the work of the FDA. **[B4-A8]**.

Given the FDA's diverse and increasing services and workload, the **agency's organizational chart** should be reviewed and improved to meet the demands of the situation. **[B4-A8]**.

As much as possible, the chief of the FDA should make the following professionals available in the FDA: pharmacologists, pharmacists, biologists, microbiologists, virologists, physicists, chemists, nutritionists, doctors, nurses, social or behavioral scientists, medical technologists, veterinarians, researchers, public health specialists, health administrators, epidemiologists, engineers, data management specialists, statisticians, information communication specialists, health educators, etc., in order to address a wide range of issues. The spectrum of work of the FDA is very wide. [B4-A8].

The FDA should be **a totally independent entity**. The head of the government should appoint the FDA's chief, and his or her tenure should coincide with that of the government. In other words, the FDA should not report to the health ministry. **[B4-A8]**.

The country's FDA should maintain close i**nternational and interagency collaboration** to keep abreast of the most recent advancements in its sector. **[B4-A8]**.

The work of the FDA is crucial for the prevention of chronic noncommunicable diseases, cardiovascular diseases, diabetes, kidney diseases, and liver diseases brought on by consuming contaminated, fatty, salty, and excessively sweetened foods and beverages. Strict rules should be imposed by the FDA for giving permission to approve or import only healthy food products into the country. The FDA should also pay undivided attention to locally produced food products. **[B4-A8].**

The FDA should be very strict in approving or permitting the import of traditional medicine, western medicine, cosmetics and beauty products, and other medical products and equipment that can be **harmful to the population**. The FDA needs to work very closely with public health professionals, clinicians, public health associations, medical associations, consumer unions, relevant ministries, and many other stakeholders in the country. **[B4-A8]**.

Most critically, post-marketing surveillance needs to be expanded and improved in a variety of ways. It is crucial to provide enough staff members to carry out post-marketing surveillance. Specific SOPs and GLs should be developed and updated often to enable post-marketing surveillance to be carried out in a systematic manner. Post-marketing surveillance is essential for assessing how well the FDA is performing its duties. This aspect requires particular attention. **[B4-A8]**.

5.5. Occupational Health: An Area Meriting Added Attention

General comments. Generally, in developing countries, occupational hazards encountered by health workers are not given serious attention. Unknowingly or knowingly, many health workers got sick or debilitated due to incidents happening in the work environment. The topics of various types of occupational hazards should be covered in the **curriculum of pertinent medical degree courses**, particularly in the areas of preventive and social medicine, as well as MPH courses.

We should also encourage more **implementation research studies and thesis papers** on workplace hazards. Similarly, we need to give undivided attention to occupational hazards and the occupational health of workers in industrial complexes and factories. **[B4-A17].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The staff working at various hospitals should be made aware of the potential occupational hazards they may encounter and how to avoid them. **"Occupational Hazards Monitoring Systems in Hospitals and Work Places"** should be put in place. The data collected by the system will be a highly valuable resource for policymakers to take the necessary actions. **[B4-A17]**.

Generally, the following actions are proposed, but are not exhaustive, in order to **reduce occupational hazards** among the hospital staff:

- Improving, updating, and implementing radiation safety regulations in X-ray units;
- The disposal of biological wastes, laboratory wastes, general hospital wastes, sewage, etc. should be done in a proper and organized manner;
- Ensure that personal protective equipment (PPE) is available and that users are trained to use it in the event of an infectious disease outbreak or pandemic;
- Make sure that there are stringentSOPs and GLs available for collecting biological samples from patients and that every new employee joining the laboratory section has received training;
- Regular sterilization or fumigation should be carried out in operating rooms, as well as proper sanitation measures in hospital wards and their environments;
- Regularly perform proper sanitation both inside and outside the hospital;
- Brochures on proper patient handling procedures for health staff to prevent the spread of diseases should be developed;
- Hospitals should enforce the recommended guidelines for lowering nosocomial infections;
- In the event of an epidemic or pandemic of an infectious disease, especially the ones that spread by the respiratory route, extra precautions should be taken and follow the stringent SOPs and GLs;
- Isolation wards in hospitals should strictly follow the principles of management of isolation wards for infectious diseases as well as the physical requirements of an isolation ward;
- Security personnel should be hired, and the hospital's general security should be ensured;
- Automatic sprinkler systems and smoke alarms for fire hazards should be installed;
- Building resilience should be examined annually. There should be drills for emergency patient and hospital personnel evacuations;
- To periodically examine the overall situation of occupational hazards for health workers working in hospitals, a checklist should be made available. The **"Hospital Management Committee"** should receive the findings and take the required actions without fail;
- All tools and chemicals required for sterilization, fumigation, etc. should be made available. **[B4-A17]**.

Under the **"Occupational Injury Record System for Workers in Industrial Complexes and Factories,"** every industrial complex and factory should maintain a record of the major occupational injuries that its employees suffer. In order to reduce occupational hazards, a composite analysis of data from systems across the country will be an essential input for occupational health policy and strategy development. **[B4-A17]**.

It is high time that policymakers in developing countries strive to have **rational and doable strategies** to lessen the occupational hazards and injuries of health workers and those working in industrial complexes and factories. Ensuring worker safety is our top priority. We must work to create a nearly risk-free atmosphere in hospitals, industrial complexes, and factories. **[B4-A17].**

5.6. Health Care Reform: An Issue Worthy of Deep Deliberation

General comments. Health care reform is embedded within an extremely vast area of work and is a complex process. The objectives of initiating health care reform are to increase the effectiveness, efficiency, accessibility, and responsiveness of the health system in order to improve health equity. There are several definitions of health care reform. When initiating health care reform, one needs to view it from a very **broad perspective** (a holistic view), taking into consideration not only issues and influencing factors in the domain of health but also allied and relevant ministries, apart from the political and economic system of the country. All these factors need to be considered in the context of national health policy, strategies, and the overall policy of the government.

In the process of reform, we should try to strategize or develop avenues or mechanisms for obtaining multi-sectoral and multi-disciplinary involvement, as well as community participation. In fact, the crux of the matter is that the healthcare delivery system must be more responsive, dynamic, and robust after undergoing reform, besides achieving sustainability. **Political will and commitment** should be the driving force behind the reform process.

Conducting health care reform without concrete, reliable, and valid data or information is doomed to fail. It is also not appropriate to do health care reform just for the sake of doing reform. While the reform process is going on, it would be advisable for the government to further reinforce the momentum of implementing the ongoing national poverty reduction strategies. This can greatly facilitate achieving the desired outcome of the reform process. **[B1-Part A-A6].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Healthcare reform is **a very popular phrase**. Before we consider initiating the health care reform process, we should seriously ask:

- Is it really necessary to undertake health care reform?
- What is the quantum and specific area of reform that we would like to do?
- Can we just improve and streamline the internal management system by strictly following in-house circulars, SOPs and GLs instead of doing full-fledged reform? **[B1-Part A-A6]**.

One should also be aware that reform is "**a continuous process and not a one-time affair."** Several course adjustments or direction changes are needed depending on the contemporary epidemiological situation and factors that are sometimes beyond the control of the health sector. **[B1-Part A-A6].**

Currently, many countries are pursuing universal health coverage (UHC). Some degree of **health care reform may be necessary to ensure UHC**, with the aim of achieving:

- Better equity and social justice in health;
- Unlimited accessibility to health services by people from all walks of life, especially those in remote and underserved areas. **[B1-Part A-A6].**

Professionals from **different disciplines under the rubric of social science** must be involved when one is considering implementing some health care reform initiatives. Experienced professionals from public health, including those who are working in preventive and social medicine departments of the school of medicine, school of community health, school of public health, health economists, epidemiologists, statisticians, medical record professionals, policy makers, health program directors, health staff working at township level and below, sociologists, medical specialists, medical educationists, medical superintendents, hospital administrators, research scientists, systems analysts, officials of local governing bodies, etc., should be involved. We should not forget to involve representatives of civil society, community-based organizations, and communities, especially from remote and underserved areas. **[B1-Part A-A6].**

In doing the **holistic reform process**, at least the **following 25 entitie**s need to be developed, strengthened, improved, revamped, modified, removed, combined, or appropriate actions taken:

1. Role of local governments and civil society;
2. Role of the community-based health workforce and community-based organizations;
3. The extent of decentralization to be allowed;
4. Selection of cost-effective and cost-efficient health interventions;
5. Ways of achieving an optimal mix of human resources;
6. Defining and applying cost-effective innovative strategies to reach hard-to-reach areas or the unreached population, i.e., the poor, underprivileged, vulnerable, and marginalized;
7. Consideration of sociocultural, economic, and environmental determinants of health prevailing in different geographical areas;
8. Defining practical strategies to close the gap in morbidity and mortality rates of communicable and noncommunicable diseases in different geographical areas;
9. Balancing between curative and preventive care;
10. Ensuring equitable distribution of human resources for public health and clinical domains;
11. Rational budgetary allocation depends on the needs of different geographical areas; this depends on several factors;
12. Ensuring to achieve healthy public policies over the years through other development sectors;
13. Promoting public-private partnerships in several aspects;
14. Noting the changing demographic profile;
15. Emerging and reemerging disease scenarios;
16. Adequate provision for tackling unexpected outbreaks of new diseases;
17. Judicious consideration on various dimensions of health care;
18. Applying strategies to promote people-centered care;
19. Procedures to contain costs;
20. Multidisciplinary health team at township level with task shifting;
21. Establishment of community health clinics *versus* sub-rural health centers *versus i*ntegrated community health services;
22. Strategies for intensifying community health education programs;
23. Changing the role of research institutions and their role in promoting the efficiency and performance of the health care system;
24. Intensifying the role of implementation research to improve access, effectiveness, efficiency, equity, and sustainability of services;
25. Innovative strategies for the use of information and communication technology **(ICT)** in curative as well as preventive services.

The above-mentioned issues are just the tip of an iceberg that need to be considered in the reform process. Those activities that are currently being performed at a good pace, in a reasonable and favorable environment, must be reinforced with a view to sustaining them. **[B1-Part A-A6].**

The WHO had organized a regional meeting titled **"Health Care Reform for the Twenty-First Century in the South-east Asia Region"** from October 20–22, 2009, in Bangkok, Thailand. The author made a key presentation on **"The Strategic Framework for Health Care Reform for the Twenty-First Century."** The meeting agreed on the *draft strategic framework. It was based on a public health perspective and also on the recommendations of WHO South-East Asia regional consultations and conferences and the challenges facing the region. **[B1-Part A-A6].**

The *strategic framework identified **four major challenges for the HCD**S, i.e., high disease burden; low health expenditure; a weak health system; and inefficiency. In the reform process, we need to consider how to overcome these four challenges. The meeting also agreed on the **four proposed reform areas**, such as:

- **Governance** (health policy, healthy public policies, decentralization, public-private partnerships);
- **Health workforce management** (community-based health workforce, education, and training, multidisciplinary health teams);
- **Community empowerment** (education, volunteers as change agents, linking to income generation);
- **Publichealth institutions and networks** (innovativeeducation, information, and communication technology in education and training).

These are four major areas on which the reform process should focus. It is desirable that these be considered in the context of improving public health by strengthening the health care delivery system. **[B1-Part A-A6].**

5.7. Universal Health Coverage: The Most Influential Concept

General comments. By all means, we must work towards **gradually achieving universal health coverage** in order to provide the general public with equitable access to healthcare at an affordable price. There are several approaches to obtaining universal health care. Different countries are using different approaches. However, all activities need to be implemented gradually and step-by-step. It is contingent upon the **nation's level of development,**

socioeconomic standing, health status of the population, access to healthcare financing, as well as the current **healthcare infrastructure and human resources**.

The Ministry of Health is not in control of all the predictors or determinants that are necessary to achieve UHC. As a result, **inter-sectoral coordination and collaboration** must be highly valued and should not be undervalued. In a nutshell, UHC means everyone gets quality healthcare, people are accessible to a full range of health services, and people will not suffer financial hardship due to payment for health services. **UHC can be viewed from several perspectives**, taking into consideration different contexts in each country. The World Health Organization has mentioned that the goal of the UHC is to ensure that all people obtain the health services they need without suffering financial hardship when paying for them. The full spectrum of essential, quality health services should be covered, including health promotion, prevention and treatment, rehabilitation, and palliative care. **[B1-A5].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The **strategies, tactics, and action**s needed to achieve UHC are interconnected and interdependent. Weaknesses at one strategic nodal point can weaken or undermine the entire sequence of events. All directors of health programs should have a sense of responsibility for achieving UHC and collaborate with one another to create a dynamic and well-coordinated plan to get there. Activities related to UHC are **losing prominence in several nations.** Resuming and enhancing UHC-related operations necessitates the creation of a **"High-Powered Independent Task Force on UHC"** with a specific mandate. **[B1-A5].**

If we truly desire to attain UHC, we should keep the following information in mind: These are:

- UHC needs continued high-level commitment and push;
- UHC cannot be attained easily in a short period of time;
- UHC is a lengthy and ongoing process;
- UHC strategies must always be reviewed, aligned, and improved;
- When addressing issues in UHC, long-term perspectives must always be taken into consideration;
- *Ad hoc* measures, stop-gap measures, symptomatic management, and face-saving measures must be avoided;
- The root cause of the issue or problem should be tackled in order to improve UHC;
- Multisectoral and multidisciplinary collaboration is essential to achieving UHC. **[B1-A5]**.

Did we do anything concrete on the nine areas of work or strategic directions of UHC? We may need to prioritize the activities in each area of work. It is impossible to implement all the envisaged activities in each area of work. These are:

- Identify essential health packages, ensuring access to comprehensive, quality health services for all;
- Enhance human resources for health (HRH) management through the implementation of a health workforce strategic plan to address current challenges hindering equitable access to quality services;
- Ensure the availability of quality, efficacious, and low-cost essential medicines, equipment, and technologies, including supply chain management and infrastructure at all levels;
- Enhance the effectiveness of the public-private mix;
- Develop alternative health financing methods and risk pooling mechanisms to expand the fiscal space for health in order to alleviate catastrophic health care expenditures in the community and enhance financial protection;
- Strengthen community engagement in health service delivery and promotion;
- Strengthen evidence-based information and a comprehensive management information system, including the non-public sector;
- Review existing health policies and adopt necessary policies to address current challenges for UHC;
- Intensify governance and stewardship for the attainment of UHC. **[B1-A5].**

The **main objective of UHC** is for the quality of health services to be good enough to improve the health of those receiving them. This requires the following entities:

- A strong, efficient, well-run health system meeting priority health needs;
- A system for financing health services;
- Access to essential medicines and technologies;
- A sufficient number of well-trained and motivated health workers;
- The full spectrum of essential, quality health services, including health promotion, prevention and treatment, rehabilitation, and palliative care. **[B1-A5].**

The BHS staff should be thoroughly informed about the meaning of Universal Health Coverage (UHC) and the specific roles to be played by them in attaining UHC. It is **a very long journey**, and we have to work collaboratively and in an integrated way. At the same time, the population must be enlightened about the meaning of UHC so that they can judiciously demand the health services to be rendered by the BHS staff. **[B2-A12].**

The **clinicians are part and parcel of the UHC team.** The demarcation line between clinicians and public health professionals must be removed to reach our UHC goal. Several

options to put clinicians on board are available, i.e., enhancing the involvement of clinicians in the following public health initiatives:

- Development of strategies and interventions for communicable and non-communicable disease control;
- Formulation of national health policy, national health plan, and national health research policy;
- Annual program planning and evaluation workshops;
- Relevant public health activities of the university of public health and the school of community health;
- Strategic and policy-level meetings and workshops organized by the Ministry of Health and collaborating UN agencies, etc. **[B1-A5]**.

Establishing a computerized HWF database system can facilitate many health workforce issues. Equitable distribution of an adequate, committed, competent, and ethically minded health workforce is crucial along our path to UHC. **[B1-A4].** We need to develop an **"Implementation Activity Framework" (IAF).** It is an activity tree to be considered along our path to achieving UHC. It includes the least responsible entities to implement, the source of funding, resource allocation, and a timeline for each prioritized activity. Brainstorming among all stakeholders must be done in developing IAF. Activities mentioned in the IAF should be prioritized, interlinked, integrated, and properly sequenced. The IAF will serve as a concrete road map to achieve UHC by 2030 and beyond. **[B1-A5].**

The **following points are noteworthy** in considering the strategies and approaches to achieve UHC, viz.,

- The health workforce is the key driver of achieving UHC;
- The health ministry is only one of the players;
- Inter-ministerial and inter-sectoral collaboration is a must;
- Systematic collaboration and coordination with development partners, local and international NGOs, community-based organizations, and civil society organizations are essential;
- Public-Private-Partnership is an essential ingredient to achieve UHC;
- Clinicians must be brought on board;
- The role of training institutions is crucial;
- Built-in implementation research is a *sine qua non*;
- A **"High-Powered Independent Task Force on UHC**" could facilitate dramatically and quicken the process to achieve UHC;
- Overall government policy is a key predictor of a successful UHC;
- Collective thinking, a collaborative approach, mutual respect, and a compromising attitude should be practiced by all professionals along our path to UHC. **[B1-A5].**

5.8. Priority Health Conditions: Truthful Identification is Vital

General comments. We must be alert to evolving priority health issues and address them as soon as we can before they become deeply rooted. If we do not address these health issues in time, the nation will face disproportionate health problems down the road and will not be able to handle them. A **complete state of chaos** can develop. The people will suffer, and the medical staff will be unduly overworked. Senior officials of the health ministry should anticipate these scenarios and make concrete plans to address them effectively. It is easier to deal with these issues early on, before they become deeply ingrained in the community or population.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Prioritizing and managing the issues in accordance with their priority is advised because developing countries might not have the resources to address all of the aforementioned issues at once. Using the **right approach to prioritize health issues** is crucial. The following general criteria could be taken into account:

- Long-term positive impact on the population;
- The negative impact or effect may be irreversible;
- High cost-benefit and cost-effective ratios;
- The availability of effective strategies and human resources to handle the issue;
- High social and political impact;
- Knowing the root cause of the issue;
- The cost of not handling the issue may have a detrimental effect on the health system and the population in the long run;
- The issue is affecting a large group of the population or large geographical areas in the country;
- The issue may have negative health implications for neighboring countries and beyond;
- Conformity with the **IHR (2005)**;
- The issue is urgent and time-bound in terms of the action to be taken;
- The demand from the population is very high; etc. **[B4-A19].**

It would be an advantage if an independent **"Task Force for Overseeing Evolving Health and Health-Related Issues in the Country,"** directly answering to the health minister, was available. This task force can identify priority health issues on a real-time basis. **[B4-A19].**

The following **"Seventeen Prioritized National Strategies"** may be considered appropriate. These are overarching strategies and could have a positive and beneficial effect on the population in the long run.

1. "Promoting the **Health Literacy Level** of the Population."
2. "Strengthening **Information Systems** in the Clinical Domain and Public Health Domain."
3. "Reinforcing **Human Resources for Health**."
4. "Improving the **Performance of Hospitals.**"
5. "Achieving a **Resilient and Responsive Public Health Domain**."
6. "Reinforcing **Disease Surveillance and Sentinel Disease Surveillance Systems.**"
7. "Establishing a **Public Health Surveillance System.**"
8. "Expanding **Universal Health Coverage** through Primary Health Care."
9. "Launching **Health-Promoting Schools.**"
10. "Launching **Patient-Friendly Hospitals**."
11. "Reinforcing the **Expanded Program for Immunization**."
12. "Strengthening the **Food and Drug Domain**."
13. "Promoting the motto **"Exercise is Medicine"** throughout the country."
14. "Strengthening the **Research Domain**."
15. "Reviewing and Refining the **Indicators of the Healthcare Delivery System**."
16. "Establishing a **National Health Insurance System**."
17. "Establishing **National Centers of Excellence**." **[B3-A28].**

The following health and health-related issues are now thought to be significant and prevailing in developing nations: The **magnitude and scope** of the health issues listed below will differ from nation to nation. The below-mentioned issues need to be prioritized based on **a set of objective and subjective criteria** and appropriate action taken.

- The emergence of antimicrobial resistance;
- The reemergence of zoonotic diseases;
- Lack of readiness to deal with pandemic diseases;
- Rising problems of diabetes and cardiovascular diseases;
- Disregarding nursing and medical ethics at work;
- Quality healthcare services are not widely available in many hospitals;
- Non-accessibility of essential health services to the rural population;

- A rise in unhealthy lifestyle adoption;
- Less attention is paid to food safety issues;
- Indiscriminate use of insecticides, pesticides, and fertilizers;
- The rising incidence of cancer;
- A rise in the number of TB cases;
- Growing traffic accidents are straining the health system;
- Rising substance abuse in the population;
- Increasing environmental pollution and climate change;
- Healthcare for the ageing population;
- Limiting access to healthcare;
- Growing health disparities in the populace;
- Weak primary health care services;
- Keeping the infodemic under control;
- Issues with access to safe drinking water, good sanitation, and basic health care. **[B4-A19].**

5.9. Tackling the Challenges of the Health Domain: Watch Out

General comments. The health domain mainly encompasses three main systems, i.e., the **public health system,** the **healthcare delivery system**, and the **hospital system**. The challenges of the healthcare domain are widespread and continuously evolving. Tackling the overall challenges of the health domain should be seen as the greatest opportunity for all of us to improve the effectiveness and efficiency of the three main systems. Many challenges in the health domain can be overcome by adhering to the SOPs and GLs or by modifying or updating the existing SOPs and GLs.

Some challenges can be alleviated by implementing newly developed strategies and interventions, but a few challenges even require health policy and strategy change, which may take time. However, we have to live with the challenges. Tackling the challenges of the health domain is **a daunting task** for the officials of the ministries of health in developing countries.

The challenges seen in the healthcare delivery systems of developed countries are very different from the challenges faced in developing countries. Similarly, challenges observed in government-controlled healthcare systems and private healthcare systems are also not similar. We have to live with the challenges. Challenges are part and parcel of the normal phenomena of the three main systems. The presence of challenges is also conducive to making the three systems more responsive, sensitive, and dynamic. **[B3-A1].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The challenges of the health domain **span from administrative, management, and logistics issues to technical issues.** Some of the challenges are beyond the control of the health ministry. Therefore, we need to work closely with other ministries and stakeholders. **[B3-A1].**

If we visualize the **causal nature of a challenge**, it could be the result of multiple factors. One of the factors causing that challenge in one program area may also cause another challenge in another program area. In other words, a critical or composite analysis of a challenge should always be carried out. Sometimes, a challenge will disappear by itself because we have removed the cause for another challenge. In essence, tackling the challenges requires holistic thinking and a systems approach. **[B3-A1].**

The challenges of the health domain are **interlinked and intertwined.** The interaction among challenges can exhibit a domino effect, either in a positive or negative direction. Taking care of one challenge can, therefore, mitigate other challenges, and *vice versa*. **[B3-Message to my fellow health professionals].**

It is imperative that program directors are **cognizant of the following points** when tackling the challenges of the health domain:

- Think globally and act locally;
- Applying the systems approach and systems thinking;
- Always perceive a scenario from a holistic point of view and be critical of factors influencing the existing situation;
- Applying epidemiologic thinking and re-analyzing the situation from technical, ethical, social, and economic perspectives;
- No hesitancy to make adjustments and modifications to the interventions if the health situation has not improved due to evolving epidemiological conditions;
- Always think of capacity-building for the different categories of staff involved;
- Improving the administrative, logistics, and management aspects of the healthcare delivery system by way of conducting implementation research;
- Elimination of unnecessary administrative procedures and removing red tape. **[B2-A8].**

When we are dealing with the challenges of the health domain in the **government-controlled healthcare delivery system**, we need to take into account the following conditions:

- The country's national health policy, national health research policy, and national health plan;
- The major strategies and interventions of the Ministry of Health, as well as its structure and functions;
- The competence and capability of health professionals;
- Population health literacy level;
- The budget allocation and utilization pattern of the Ministry of Health;
- The existing SOPs and GLs on administrative, management, logistics, budget and finance, and technical aspects of health programs;
- Rising healthcare costs;
- Rising demand or shifting population expectations;
- The existence or absence of a national health insurance system;
- The emergence and re-emergence of communicable diseases;
- Morbidity and mortality trends in communicable and noncommunicable diseases;
- The frequency with which epidemic outbreaks occur;
- The availability of new patient treatments and diagnostic methods. **[B3-A1].**

A new approach such as **"Health Domain Challenges Scouting Teams"** could be formed so that surveillance of challenges of the health domain in the country would be recognized on a real-time basis and taken care of accordingly. **[B3-A1].**

5.10. Challenges of the Healthcare Delivery System: Always in a State of Flux

General comments. It is to be noted that many challenges in the healthcare delivery system are interlinked and intertwined. The challenges can exhibit a **domino effect**, either in a positive or negative direction. Taking care of one challenge can, therefore, mitigate other challenges, and vice versa. This particular fact is very strategic. We need to always have that notion at the back of our minds. **[B3-A6].**

We have to live with the challenges. Challenges are part and parcel of the normal phenomena of the healthcare delivery system. **The presence of challenges is also conducive to making the healthcare delivery system more responsive, sensitive, and dynamic. [B3-A1].**

[Various perspectives on challenges are discussed in detail in the book titled **"Tackling the Challenges of the Healthcare Delivery System in Developing Countries."]**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Tackling the challenges of the healthcare delivery system is itself a challenging one. Be that as it may, we should **accept the challenges as opportunities** to further sharpen our public health acumen. The healthcare delivery system and its challenges are like **conjoined twins.** It is difficult to separate. So long as there is a healthcare delivery system, there will be challenges. **[B3-A1].**

We must all be on the lookout for potential challenges to the healthcare delivery system, no matter how minor they may be. **A small challenge may be a harbinger of a big challenge or a series of challenges,** or it can be **a catalyst** for many untoward things to happen. As a result, we should view the challenge as one of the factors undermining, covertly or overtly, our healthcare delivery system. **[B3-A1].**

Senior officials of the Ministry of Health working at the policy and strategic levels should always be on the **lookout for the strategic challenge**s faced by their staff and health institutions all over the country. This should be part of their job descriptions. Currently, they are just waiting to receive the complaints, challenges, problems, or issues faced by the staff and health institutions. These senior officials should play an active role in all aspects related to the challenges of the healthcare delivery system. **[B3-A23].**

The **relative weight** of the importance of each challenge should be considered as appropriate. When we scrutinize the challenges, they should be viewed from different angles and perspectives. This could reduce the bias in inference drawing and decision-making. Tackling the challenges should be seen as the greatest opportunity to improve the effectiveness and efficiency of the healthcare delivery system in the country. **[Preface to Book 3].**

New challenges will always emerge in the healthcare delivery system because of:

- In several disciplines, there is rapid modernization in terms of the emergence of sophisticated and new treatment methods and regimens;
- The availability of state-of-the-art diagnostic technique;
- The appearance of novel diseases;
- An increase in the number of hospital inpatients;
- Population demand is increasing and overwhelming;
- Patient Rights groups are flourishing;
- There is a shortage of human resources for health, especially doctors and nurses;

- The re-emergence of old and neglected diseases;
- Epidemics and pandemics caused by novel viruses;
- For several reasons, the rapidly changing lifestyles of the population have led to an uncontrolled incidence of non-communicable and chronic diseases, accidents, and malignancies;
- Natural and man-made disasters;
- Responsible staff should be looking forward to these new challenges and be prepared to deal with the upcoming scenarios. **[B3-A23].**

We need to take the following sequence of **key actions** when tackling the challenges of the healthcare delivery system:

- Identifying the challenges;
- Prioritizing the challenges using a set of criteria;
- Considering the cost-effectiveness of each solution identified;
- Exploring and selecting the options and best possible solutions;
- Making an unbiased and rational decision;
- Carrying out rapid implementation research, as necessary;
- Reviewing the status of the healthcare delivery system's performance after some time. **[Preface to Book 3].**

A practical mechanism should be developed so that information on strategic challenges encountered by the staff and health institutions reaches these senior officials on a real-time basis. This mechanism is not present currently in most developing countries. **[B3-A23].**

The professionals who are going to take care of the challenges should possess **epidemiological thinking skills.** Epidemiological thinking perceives a scenario from different perspectives, angles, or planes and compares it with different or similar scenarios, observing various controlling or determining factors leading to the scenario at hand. **[B3-A2].**

There are several public health programs in the Ministry of Health. The heads of programs or program directors should **meet on a regular basis** to share their views, challenges, and experiences among themselves as to how they are running their respective programs. They can share the experience of how they have overcome the challenges. **A Network of Program Directors** can facilitate this process. **[B3-A1].**

In essence, tackling the challenges requires **holistic thinking and practicing systems** approach. In the context of epidemiology, it is called epidemiologic thinking and epidemiologic analysis. Therefore, we need to improve the epidemiological thinking skills and epidemiologic analysis capabilities of health professionals to help them overcome the challenges of the healthcare delivery system. **[B3-A1].**

When we are dealing with the **challenges in the government-controlled healthcare delivery system,** we need to take into account the following conditions:

- The country's national health policy, national health research policy and national health plan;
- The major strategies and interventions of the MoH as well as its structure and functions;
- The caliber and capacity of health professionals;
- Population health literacy level;
- The budget allocation and utilization pattern of the MoH;
- Rising healthcare costs;
- Increasing demand or shifting population expectations;
- Whether or not a national health insurance system exists;
- The emergence and re-emergence of communicable diseases;
- Morbidity and mortality trends in communicable and noncommunicable diseases;
- The frequency with which epidemic outbreaks occur;
- The availability of new patient treatments and diagnostic methods; **[B3-A1]**

5.11. Noncommunicable Diseases: Bending the Morbidity Curve Downwards

General comments: The occurrence of NCD is complex and calls for **multisectoral, multidisciplinary, multifaceted, and multipronged strategies.** Therefore, effective collaboration among stakeholders in NCD prevention and control is crucial. Proper mechanisms should be established to have effective collaboration with ministries of education, information, commerce, customs, home affairs, social welfare, food and drug administration, relevant health programs of the Ministry of Health, community-based organizations, external entities such as INGOs and NGOs dealing with NCD, etc. **[B3-A3].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Apart from administrative and management savviness, the degree of **spirit of collaboration** exhibited by the NCD director largely determines the success of the program. The director should also possess the highest technical caliber and exhibit epidemiological thinking skills commonly practiced by a public health professional. **[B4-A3].**

The incubation period of NCD epidemics is not only prolonged but also exhibited by a sizable number of **unreported or hidden cases. This fact is of great epidemiological significance. [B4-A3].**

The school going population is huge in any country in the world. In order to promote and practice healthy lifestyles when they become adults, they need to engage in physical exercise at a young age. We need to aim for **health-promoting schools.** Therefore, collaboration with the Ministry of Education and teaching institutions is critical. **[B3-A3]**.

The **increasing pace of implementation** of the following programs can greatly facilitate the reduction of morbidity and mortality in NCD:

- Preventive Cardiology Program;
- Health Literacy Promotion Program;
- Health-Promoting Schools Program;
- Elderly Healthcare Program;
- Cancer Cervix Screening and Vaccination Program;
- Diabetes Screening Program;
- Occupational Hazards Monitoring and Reduction Program;
- Mental Health Promotion Program;
- Community Health Clinics for Early Detection of NCDs;
- Exercise is Medicine Sports Program. **[B4-A3].**

NCD monitoring indicators are good predictors for the adjustment of strategies and activities for NCD prevention and control in different population groups and geographical areas. **[B4-A3].**

From a long-term perspective, the availability and implementation of the **"National Strategy for Promoting the Health Literacy Level of the Population"** is one of the most cost-effective strategies ever noted. **[B4-A3]**.

The director of NCD prevention and control must immediately review the existing **"National Strategies for Noncommunicable Diseases Prevention and Control"** to ensure that they are consistent with the existing scenarios. The strategies should be realistic and cost-effective. It is to be noted that strategies are not static. Depending on the changing epidemiological situation, modification, reinforcement, or adjustment of the existing strategies, together with interventions, is necessary for bending the morbidity curve effectively and efficiently. **[B4-A3].**

The following reasons call for the Ministry of Health to provide the NCD prevention and control program with the **highest funding possible:**

- High cost-effective ratio;
- Long-term positive impact on the population;
- Seniors' quality-adjusted life years **(QALYs)** can be increased;
- Lessen the social and financial burden on the families;
- Promote mental well-being;
- The burden on hospitals can be drastically reduced. **[B4-A3]**.

In many countries, NCDs contribute significantly to both overall morbidity and mortality and premature mortality. The NCDs have a negative impact on the population's quality-adjusted life years **(QALYs)**. Therefore, a **highly qualified, experienced, and knowledgeable individual** must be in charge of the nation's NCD prevention and control program. Since there are numerous stakeholders involved in NCD prevention and control, the individual in charge should be very good at coordinating and working as a team. **[B4-A3].**

How can we increase the effectiveness of the work of the director of NCD prevention and control so that we can **bend the NCD morbidity curve** quickly.? Prior to taking any action, the director in charge of NCD prevention and control must assess the extent and gravity of the existing challenges and problems of NCDs in light of several epidemiological parameters. It is important to identify the precise epidemiological circumstances, both obvious and less obvious, as quickly as possible. Additionally, it is crucial to examine the trends in a number of indicators associated with NCD before we bend the NCD morbidity curve. **[B3-A4].**

A.6. FORWARD-LOOKING ENTITIES

6.1. Are we Prepared for the Next Waves of COVID-19? All Hands on the Deck.

General comments. It is economically unbearable for developing countries to have a COVID-19 epidemic or pandemic, let alone the disruption of the social fabric of the population. Therefore, developing countries should pay special attention to their **preparedness for future waves of SARS-CoV-2 infections. [B2-A5].** SARS-CoV-2 infections will be with us for many years unless the virus totally changes its genetic sequences to a non-infectivity state, which appears to be impossible.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The following steps must be taken in the **process of preparing for future waves of COVID-19.** They are not exhaustive and are not in order of preference or priority. Many of the steps can be taken care of simultaneously.

1. Review and update all available SOPs and GLs for the population and SOPs and GLs for health staff related to COVID-19; **(An essential activity to be done first and foremost).**
2. Translate into local languages and dialects, distribute them to stakeholders in relevant geographical areas, and explain clearly to health staff as well as to the specific population groups about their role to be played. (An activity that is worth doing it.)
3. All concerned parties must be fully involved, and they should play a proactive role in many preparatory activities needed for the prevention and control of COVID-19. (This is very important to create a sense of ownership of the plan, as they are the professionals who will carry it out.)
4. Before formulating a realistic plan, national-level meetings, workshops, and symposiums must be conducted for a holistic review of what we have done and the experience gained to control the earlier COVID-19 epidemic or pandemic in

the country. (Please cross-reference with the points mentioned above. The aim is to have a solid and doable plan.)

5. The discussion must be very frank, but no finger-pointing to a specific person, organization, or association must be made about the weaknesses and lapses in prevention and control activities already done. The discussion must be particularly focused on the management, administrative, coordination, collaborative, and logistics aspects of earlier epidemics or pandemics in the country in terms of: (i) COVID-19 data transmission pattern, feedback given, actions taken or not, and weak points noted (an essential epidemiological understanding of the epidemic or pandemic can be obtained); (ii) How were throat swabs taken from different townships, and how were these transported to laboratory examination sites? How were the results transmitted back to the health staff working in the catchment areas? This is no more required as we now have **rapid diagnostic tests (RDT) (Logistics as well as technical deficiencies in throat swab taking and transport can be divulged. It could be corrected in time.)**
6. The performance of laboratories examining throat swabs in terms of capacity, availability of technicians, laboratory equipment and reagent availability, recording of data and analysis, etc. should be reviewed. A checklist of assessment questions could be used. **(We can prevent disruption or failure of the laboratory system, which is an important chain link in the control of epidemics or pandemics.)**
7. Mapping of laboratories available in the country that can do PCR, etc., and possible geographical areas that can be covered. **(This could greatly aid in conducting early contact tracing.)**
8. Detailed review of the National Health Supply Chain Management System for procurement and distribution of COVID-19-related supplies and equipment. **(This is an important activity to prevent and control COVID-19 from collapsing.)**
9. A detailed review and assessment of how we have disseminated COVID-19 prevention and control information to the population. **(This will give very useful and practical input to all envisaged ideas.)**
10. Role played by NGOs, INGOs, various associations and councils, community-based organizations, general administrative department staff, UN agencies, and relevant ministries, especially the Ministry of Information, the Ministry of Education, and the Ministry of Social Welfare and Resettlement, in COVID-19 prevention and control. Key informant interviews and focus group discussions could be conducted to understand the ground reality. (**The aim is to have close collaboration and synchronized coordination in controlling the epidemic or pandemic.)**
11. A critical review of the national viral disease surveillance system and strengthening all the weak areas and links are top priorities. This must be linked to and integrated with the hospital' disease surveillance system. (**This is very crucial to detect an impending epidemic or pandemic well in advance.**)

12. Review of the performance of the COVID-19 Control Command Center of the Ministry of Health. A checklist could be used to make the process quick. **(Based on the findings, management, administrative, and logistics perspectives can be improved.)**
13. A detailed review of the implementation status of vaccine procurement and the vaccine roll-out plan, together with monitoring mechanisms, is a crucial activity for the smooth and effective conduct of the COVID-19 vaccination program in the country. **(An essential activity. This will give very useful and practical input to future vaccination programs.)**
14. Role played by the National-Level Central Committee on Prevention, Control, and Treatment of Coronavirus Disease 2019 (COVID-19); **(For improving the overall management of the epidemic or pandemic.)**
15. Performance of quarantine centers all over the country, including patient referral systems to hospitals; **(Proper management is crucial not to have outbreaks inside the quarantine centers).**
16. Guidelines for the management of quarantine sites must be issued and updated as necessary. **(A very important and useful endeavor.)**
17. Detailed review of how we have managed in earlier waves at placewhere groups of people are there (prisons, factories, industrial complexes, schools, internally displaced groups, offices, hotels, boarding schools, orphanages, etc.). Based on that experience, COVID-19 preparatory SOPs and GLs could be issued before the next wave sets in. **(This is an extremely important activity to prevent big COVID-19 outbreaks in these crowded and confined places.)**
18. A detailed review of how we have managed at land border checkpoints, seaports, and airports. **(The entry of SARS-CoV-2 infected persons into the country can be deterred, and we will not miss infected persons being quarantined.)**
19. A review of COVID-19 treatment given at various categories of hospitals together with a referral system (the latest and most standardized line of treatment in hospitals) must be reviewed; **(Referral system guidelines can be improved.)**
20. Meeting with medical superintendents of hospitals about hospital administration, supply chain management, and handling of COVID-19 patients, starting from admission to discharge or deaths; **(It is crucial in lowering the death rates of COVID-19 in hospitals.)**
21. Situation of the genetic sequencing of SARS-CoV-2 done by the concerned research institutions and plan for the future for increasing its coverage and efficiency should be worked out; **(Early detection of variants of concern (VOC) can be exposed.)**
22. Role of the Food and Drug Administration Department **(FDA)** for approval of imported COVID-19-related supplies and equipment; (**Delay in the importing process of COVID-19-related supplies and equipment will lead to an uncontrolled epidemic or pandemic.**)
23. Role played by the central epidemiology unit, offices of state and regional directors, township medical officers, and station medical officers in COVID-19

prevention and control; **(A key activity to have overall success in controlling epidemics or pandemics.)**

24. Overall coordination scenario of COVID-19 prevention and control for earlier epidemics or pandemics; **(it could be a key input to successful management of future waves of COVID-19.)**
25. Review of how we have disseminated COVID-19 information to the public, health education materials, etc. **(Many practical points can be revealed.)**
26. A quick assessment of the level of health literacy of COVID-19 is very important. We have done it during the early part of the second wave of COVID-19 in Myanmar, and to our surprise, the knowledge level of the population, even in urban areas, on COVID-19 is unsatisfactory; (Many gaps in health literacy can be revealed.)
27. Management, administrative, and logistics perspectives of activities pertaining to the overall prevention and control of COVID-19 in the country. (**This is an essential activity to yield information for improving the overall strategy of COVID-19 prevention and control.) [B2-A5].**

6.2. Outbreaks, Epidemics, and Pandemics: Always be Prepared

General comments. We will definitely face disease outbreaks, epidemics, and pandemics in the future. There should be no panic in dealing with the epidemic or pandemic. Epidemics and pandemics must be dealt with calmly and with confidence. In an epidemic or pandemic, **every piece of information is important** until proven otherwise. If a developing country has a better organized and well-managed public health system, the epidemic or pandemic can be contained or stopped faster than in a developed country. Many world-class public health professionals and epidemiologists are also present in developing countries. **[B2-A4].**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

When it comes to disease control, knowing how to successfully handle an epidemic or pandemic is crucial. There is **no one-man show in managing an epidemic or pandemic.** Everybody needs to work together in a coordinated and synchronized manner. **[B2-A4].**

When we are **strategizing our interventions** for controlling the epidemic or pandemic, we need to always keep in mind the following points as much as possible:

1. To reduce the severity;
2. To limit the geographical spread;
3. To lessen the speed and quantum of spread;
4. To shorten the duration of the epidemic or pandemic;
5. To reduce mortality;
6. To increase the population's understanding of the transmissible nature of the disease;
7. To strengthen the surveillance and disease reporting systems;
8. To enhance the capacity and capability of laboratory and radiological services;
9. To make the control activities more coordinated;
10. To remove disinformation and reduce infodemics;
11. To strengthen the networking of all stakeholders involved in the prevention and control activities;
12. To issue relevant SOPs and GLs as quickly as possible;
13. To disseminate the key clinical manifestations, signs, and symptoms of the disease-causing epidemic or pandemic to relevant entities at various levels of the healthcare delivery system, etc. **[B2- A4].**

In order for disease outbreaks to be effectively prevented, we need to have a **well-defined workflow process** for notifiable and sentinel disease surveillance systems in the country. Here, the involvement of private clinics, polyclinics, and private hospitals is mandatory. **[B3-A26].**

It is important that, before managing the epidemic or pandemic disease, we **brainstorm** and do the following: **[The frequency of actions depend on the size and severity of the epidemic or pandemic.]**

1. Formation of the central committee for the overall management of epidemics and pandemics;
2. Formation of outbreak investigation teams;
3. Laboratory system readiness;
4. Health supply chain management system readiness;

5. Conducting table-top and simulation exercises, if necessary;
6. Preparedness of hospitals and patient referral system readiness;
7. Private hospital involvement and networking system readiness;
8. Radiological service readiness, if necessary;
9. Quarantine centers readiness, if necessary;
10. Epidemic or pandemic disease information dissemination readiness;
11. Data transmission and reporting system readiness;
12. Technical briefings for health staff readiness;
13. Briefings to the media and population readiness;
14. Updating the relevant SOPs and GLs;
15. Outline the roles of stakeholders, volunteers, UN agencies, like-minded associations, and organizations, if necessary;
16. Inter-ministerial coordination and cooperation readiness;
17. Expanded program of immunization system readiness for vaccine-preventable epidemics or pandemic diseases, as appropriate;
18. Epidemic or pandemic disease monitoring team availability must be ensured and put in place. **[B2-A4]**.

The following **basic principles and actions**, at least, must be adhered to when dealing with an epidemic or pandemic:

1. **Proactive Collaboration:** The proactive collaboration of entities involved in managing the epidemic or pandemic is crucial. We should not wait for collaboration to happen. We need to explore possible collaboration with stakeholders.
2. **Synchronized Coordination:** Synchronized coordination is more important than collaboration *per se* among all the entities involved in managing an epidemic or pandemic. Confusion and waste of resources will occur if there is no synchronized coordination.
3. **Discussion of Ground Level Staff:** Discussion of staff working at ground level is essential, and information thereby generated should be given special attention. This is especially important as the scenario happening in one area may be different from another.
4. **Agent, Host, Environment, Vector, Time, Place, and Person:** These variables related to the said epidemic or pandemic should be considered at the very outset. If we follow this, we will not miss the likely causation, pockets of transmission, transmission dynamics, transmission momentum, and trajectory pattern of the disease-causing the epidemic or pandemic.
5. **Historical Perspective:** The historical perspective of the said epidemic or pandemic, if there is one, should not be forgotten and should be referred to as appropriate. We could get much more information that could be used to control

the current epidemic or pandemic. Getting the experience of controlling or containing the epidemic or pandemic from and through the World Health Organization could be an advantage.

6. **Flow of Information:** The flow of information in an epidemic or pandemic should be bi-directional and on areal-time basis The feedback system should be fully enhanced. The strength of the feedback is generally related to the duration of the epidemic or pandemic.
7. **Spreading Scenario:** Pattern of spread, speed of spread, specific population groups affected, specific age and sex afflicted, and specific geographic areas involved could be put in the limelight. This could aid in modifying our current strategies for controlling the epidemic orpandemic.
8. **Critical Review:** A daily critical review or brainstorming on the evolving epidemic or pandemic is crucial. This could facilitate reviewing and modifying our currently used strategies to control the epidemic or pandemic. Serious attention should be accorded to this critical review process.
9. **Management and administrative perspective:** This perspective is vital in managing the epidemic or pandemic and should be given undivided attention. Control of many epidemics and pandemics got delayed and prolonged because of administrative and management weaknesses.
10. **Population:** The population must be well-informed on a real-time basis about the evolving epidemic or pandemic and their specific role to play. This is very crucial. Population-proactive involvement should be obtained by all means. It could definitely aid in shortening the duration of the epidemic or pandemic.
11. **The Domino Effect:** The creation of a domino effect is one of the most effective approaches to propagating the preventive measures of COVID-19 among the population. One simple example is that once the **"husband"** or **"wife"** or **"person"** gets the important COVID-19 preventive information, he or she must tell his wife or husband, siblings, uncles, aunties, nieces, nephews, close friends and relatives, neighbors, co-workers, his or her subordinates, his or her senior, or anybody else he or she encounters in his or her daily routines. The one who has received that information must be requested to further spread that information in a similar pattern. For ease of reference, **"*practical key messages"** are mentioned below. As COVID-19 is a novel disease, we have to tackle it with innovative approaches. A COVID-19 literacy dissemination must be done in schools, factories, and offices. If we can do this, the population will know what to do, and they will warn each other if someone is practicing behavior that is contradictory to the norm.
12. **Networking:** The networking of all entities involved in controlling the epidemic or pandemic must be strengthened. The stronger the network, the better the coordination.
13. **Supply Chain Management:** This aspect must be given special attention, as it determines the severity and duration of the epidemic or pandemic. One of the

most important factors in determining the quick and successful control of an epidemic or pandemic is good supply chain management.

14. **Resources:** Depending on the size of the evolving epidemic or pandemic, all types of resources required must be estimated and communicated to the responsible higher authorities in advance.
15. **Information Repository:** An information seeking unit must be established to get the latest information on public health measures and clinical management of the disease (which causes the epidemic or pandemic) from renowned organizations and nearby countries, especially for epidemics or pandemics of new diseases such as SARS-CoV-2 virus infection. Freshly received critical information on the epidemic or pandemic should be disseminated to all concerned immediately. If required, new SOPs and GLs must be issued.
16. **Proper Recording:** Recording all activities done and changing epidemiological parameters in space and time is a must. The benefit accrued is immeasurable. **[B2-A4].**

The **generic steps** that should at least be initiated in controlling, containing, and mitigating an epidemic or pandemic of any disease are as follows: [not in order of priority and not in order of importance].

1. Establishing a central command center for control and containment of an epidemic or pandemic depends on the nature, size, and severity of the epidemic or pandemic;
2. Reliable and timely information received must be shared among relevant stakeholders on a real-time basis;
3. The data and information thereby received must be critically reviewed and thoroughly analyzed to determine the trajectory and severity of an epidemic or pandemic;
4. Delineate the area of the epidemic or pandemic continuously;
5. Mapping of cases must be done, and spreading patterns (trajectory) must be monitored daily for specific geographical areas;
6. Neighboring areas must be ready to tackle the spreading epidemicor pandemic;
7. Human, financial, material (laboratory, radiological) resources, and logistics required to tackle the epidemic or pandemic must be worked out and cross-referenced with available resources. Additional resources required must be calculated and gotten in time. Good planning is the key to success;
8. Necessary preparatory activities must be taken at nearby hospitals to manage the overflow of patients, coupled with the strengthening of the laboratory and radiological units of nearby hospitals;
9. Strategies for the proactive involvement of the population must be developed as one of the priority interventions;

10. All necessary SOPs and GLs for the epidemic or pandemic must be prepared by a team involving various disciplines and disseminated quickly;
11. The conduct of implementation research, case-control studies, cohort studies, clinical studies, and case studies may be contemplated;
12. A simple and efficient patient referral system must be put in place. Guidelines for referrals must be prepared;
13. Reporting to higher levels for policy and strategic decision-making and to the lower level for actions to be taken;
14. Daily reporting of the situation of the epidemic or pandemic to the population affected and to the general population must be done through the use of various communication channels. A small working group should be formed to decide on the types of information to be disseminated.
15. Inform WHO, if required, as per **IHR (2005)**;
16. Publication of papers on the epidemic or pandemic in relevant journals may be considered;
17. A report of the epidemic or pandemic must be ready at the end of it for review, teaching purposes, and future reference. **[B2-A4]**.

The **five key predictors** for quick control and containment of epidemics or pandemics are:

1. Degree of involvement of people or sense of ownership of the epidemic or pandemic by the population;
2. Real-time transmission of reliable data and information and bi-directional feedback;
3. Preparedness for supply chain system readiness and its responsiveness;
4. Extent of convincing the people about nature, causes, and preventive measures for the epidemic or pandemic;
5. Administrative, management, logistics, and technical capability of professionals managing the overall situation. **[B2-A4].**

Every effort must be made to take care of the above five predictors. In essence, the success of controlling and containing the epidemic or pandemic within a short period depends to a large extent on the degree of people's involvement and their clear-cut understanding of the cause, preventive measures, and nature of the epidemic or pandemic. **[B2-A4].**

Do we have a long-term COVID-19 prevention and control strategy in the country? If not, we need to start working on it. Many of the activities in the strategy can supplement and complement the work of other communicable disease prevention and control activities. The degree of involvement by the population is the **key determinant** in preventing future epidemics or pandemics. We, therefore, need to strategize on how to enhance population involvement. **[B2-A5].**

As the **role of the population** in curbing the extent of the spread of epidemics or pandemics is a major determinant, the following *practical key messages should be relayed to the population, apart from other routine preventive measures:

1. **Inform and remind each other about the practice of preventive measures.** Generally, when we are concentrating on our routine work, daily chores, or office matters, we tend to forget the disease and get closer to one another, resulting in an easy spread of the virus.
2. **Do not buy from shopkeepers if they are not wearing the masks.** In this way, shopkeepers will notice that buyers are shunning them away, and shopkeepers will start to wear masks.
3. **Spending the least amount of time in markets**. Make a clear list of what items you intend to buy before going to the market. The markets, especially wet markets, are places where most of the spread is occurring, as they are generally congested, especially in the morning.
4. If you are suspected of having signs and symptoms of the SARS-CoV-2 infection, go immediately to the quarantine center near your residence to consult with the health staff assigned there. **This is the best way to cut the transmission chain of the virus.**
5. Try to **avoid public transport** as much as possible, and better take a taxi for compulsory travel. Wearing a mask is mandatory when you go out. Try to avoid closed and confined space. They are conducive to the easy spread of the virus.
6. If you are a worker going out daily, do not eat together at the same table, and do not talk within six feet with other family members in your house, especially those who have comorbid conditions. By practicing this, the **household spread** could be effectively reduced.
7. Your house or office room should be **fully ventilated**, or the doors and windows should be opened. Do not stay with other people in the small, closed room or in a poorly ventilated room.
8. Whenever there is an **opportunity to get a vaccination**, do it. This would lessen your chance of hospitalization, death, or getting a serious disease.
9. **No one is safe until everybody is safe.** So, make everybody safe.
10. **Do not underestimate SARS-CoV-2 infections.** It could be life-threatening. You can have long COVID symptoms. **[B2-A4].**

We should also not forget to intensify preventive and surveillance activities for zoonotic, emerging, and re-emerging communicable diseases and impending disease outbreaks. **Many epidemics are related to or linked to zoonotic diseases. [B3-A28].**

6.3. Questions Requiring Educated Responses: For Generating Ingenious Ideas

General comments. Health professionals constantly have the following pressing questions or issues at the back of their minds. We might need to go over some of the questions raised below again, depending on the nation's current health status. We must include relevant representatives of the general public as well as other concerned staff members from the relevant disciplines while thinking about these issues and potential courses of action. To generate a wide range of information for discussion, we might also **hold debates, seminars, or luncheon presentations on the following issues**.

The conversations may yield a number of creative concepts and recommendations for improving health. Additionally, this could help the discussants **develop their analytical and epidemiological thinking skills**. We need to promote discussions, debates, seminars, or lunchtime talks on the following questions/topics on a regular basis in health institutions around the country. The ultimate purpose is to make the healthcare delivery system strong, responsive, and efficient.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The followings are **some of the questions need to be discussed.**

1. Should we incorporate **"contemporary public health issues of importance"** in the MBBS curriculum throughout the course work?
2. Are we producing **"public health-minded professionals"** (doctors, nurses, midwives, etc.) who are in line with the contemporary needs of the country?
3. Is it necessary to create an independent **"Think Tank for Promoting Public Health Domain"** and a **"Policy and Strategy Analysis Division"** in the Ministry of Health?
4. Do we need to formally establish a **"system of effective networking"** among public health institutions, public health associations, nursing and midwifery associations, and civic societies in the country to mutually enhance the capacity of all nodal points in the network?
5. Does the so-called **"People's Health Assembly"** serve as a useful forum for bringing up public health concerns and difficulties from the population point of view?
6. Should we develop a thorough and comprehensive **"generic framework to evaluate"** various national strategies concerning public health and disease control programs?
7. Is it necessary to have a quarterly **"Public Health Newsletter**" in the local language for the entire population of the country in order to raise the level of health literacy among the populace?
8. Do we need to impose a **"very high tax**" on cigarettes, alcohol, over-sweetened food and beverages, and high-fat-containing food products?
9. Do we need to drastically **"reduce the tax"** to the bare minimum for sports-related equipment?
10. Do we need to raise the **"salary of health staff"** who work in hard-to-reach areas and other difficult areas to four times the normal salary?
11. Do we need to compulsorily incorporate **"implementation research projects"** into all health programs run by the Ministry of Health?
12. Should we put research ethics, medical ethics, dental ethics, nursing ethics, public health ethics, and ethics for various disciplines into the **"curricula of respective disciplines"** in teaching institutions?
13. Should we establish **"Institutional Review Boards,"** or **"Ethical Review Committees," and "Research Integrity Units"** in all teaching institutions and large hospitals in the country?
14. Should we have **"Faculty Exchange Programs"** among similar institutions inside the country as well as outside the country?
15. Should we establish a **"Public Health Surveillance System"** in the country?
16. Should we establish **"National Centers of Excellence"** for some priority diseases in the country?

17. Should we revise the **"Job descriptions of staff"** in the Ministry of Health in view of the changing epidemiological situation?
18. Should we review the **"career ladders of staff"** in the Ministry of Health?
19. Should we conduct **"time and motion studies"** in large hospitals?
20. Should we establish **"Clinical Research Units" [CRU]** in large hospitals?
21. Should the FDA and Department of Medical Research be taken out of the Ministry of Health, Myanmar, and become **"totally independent entities?"**
22. Should we develop a **"National Research Information System"** in the country as a matter of priority?
23. Should we post **"a medical doctor with an MPH degree"** in each large hospital for the overall analysis of data and information that accumulates in each large hospital?
24. Should we urgently do a **"resource flow analysis"** in the health domain?
25. Should we establish an **"Internal Review and Technical Assessment Unit"** in the Ministry of Health?
26. Should we form **"Technical Advisory Committees"** for important technical areas?
27. Should we urgently do a review of the **"National Health Supply Chain Management System"** in the country?

6.4. Key Initiatives for Shaping the Health Domain: What are these?

General comments. The spectrum of health domains is very convolutive and wide. There are also a multitude of determinants that can shape the health domain and can either go in the right direction or the wrong direction. The following key initiatives are mutually supportive and reinforce each other. These initiatives should be carried out in a **phase-wise and step-wise manner.**

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

The following **twenty-five key initiatives** can significantly shape and improve the health domain in the country: (not in order of priority)

1. **All FDA activities** ought to be reinforced in all aspects and carried out rigorously, systematically, and under the scrutiny of independent groups. The FDA's activities are connected to population health either directly or indirectly. **[B4-A8] [B4-A3].**
2. **All curricula**, instructional strategies, teaching resources, and faculty availability in all teaching institutions should be reviewed, any necessary adjustment and improvement should be made in a phased and methodical manner. Given the size of the undertaking, numerous professional groups ought to participate. **[B2-A3] [B2-A11] [B3-A4].**
3. Programs for **continuing professional development (CPD)** should be implemented across all of the disciplines in the health domain. All CPD programs should be properly registered. There should be a computerized mechanism in place for recording CPD activities. **[B2-A3].**
4. Specific initiatives should be put in place to improve doctors' **clinical judgement and acumen. [B3-A12] [B3-A17] [B3-A24] [B4-A6].**
5. Specific initiatives should be put in place to improve **nursing acumen**. We should support nurses in every way possible, as they play a crucial role in facilitating patients' speedy recovery and ensuring their contentment. **[B2-A14] [B3-A19].**
6. Specific initiatives should be put in place to improve **paramedical staff acumen.** The importance of paramedical personnel in the field of medical treatment should not be understated. They are very crucial. **[B3-A20].**
7. Specific initiatives to enhance the administrative, budget, and financial management skills, supply chain logistics, and **overall management skills of hospital directors** and medical superintendents should be taken into consideration and implemented. [**B2-A13 [B3-A13] [B3-A16] [B3-A17] [B3-A24] [B4-A2].**
8. **Capacity-building initiatives** for faculty members working in educational institutions should be implemented. The gatekeepers for producing high-caliber graduates from educational institutions are the faculty members. [**B1-A21] [B3-A4] [B3-A8].**
9. In cooperation with medical societies, medical associations, and medical councils, formal programs to confer the titles of **"Board Certified Physicians"** and **"Board Certified Public Health Professionals"** should be developed. If it is successful, other disciplines ought to adopt it. Doctors' clinical judgement will improve, as will public health practitioners' public health acumen. **[B3-A3] [B3-A4] [B4-A6].**
10. The performance of the **national health supply** chain should be reviewed and improved in all aspects. If the health supply chain system fails, the entire

healthcare system may come to a grinding halt. **[B2-A7] [B3-A10].**

11. **The health literacy promotion strategy** of the country should be carefully reviewed, fine-tuned, and implemented seriously. This is the most cost-effective strategy to improve the overall health status of the populace. **[B2-A2] [B2-A6] [B2-A10] [B2-A21].**
12. **All SOPs and GLs** for various subject matters should be updated and distributed to all pertinent entities. This initiative is very beneficial to all aspects of the healthcare delivery system, especially for health staff working in remote and hard-to-reach areas. **[B3-A7].**
13. Develop **national strategies** to improve the capacity of health research institutions and promote research projects that will help the health domain of the country. Research is part and parcel of the healthcare delivery system. **[B1-Part B-A1] [B1-Part B-A2] [B1-Part B-A3] [B1-Part B-A5] [B1-Part B-A6] [B1-Part B-A7] [B1-Part B-A8] [B1-Part B-A9] [B3-A15].**
14. Immediately review the **national health policy, national health plan, and national health research policy** and act accordingly. These three entities are the driving forces behind the healthcare delivery system. **[B1-Part A-A14] [B2-A8] [B2-A10] [B2-A12] [B2-A21] [B4-A16].**
15. Develop **a national strategy** to promote community participation in health ministry projects that promote health. Many public health projects would not be successful without community support. **[B1-A4] [B2-A10] [B2-A21] [B4-A1].**
16. Create a nationwide plan to raise **patient satisfaction in hospitals**. Patient safety issues are often linked to patient satisfaction issues. As a result, we must work to ensure patient satisfaction. **[B3-A11] [B3-A17] [B3-A24] [B4-A2].**
17. Create a nationwide plan to reduce **workplace risks** for health personnel. **[B4-A17].**
18. Establish a national plan to improve **public health surveillance.** The effectiveness of this system is directly tied to a decline in disease-associated morbidity and mortality. **[B2-A18] [B3-A26] [B4-A15].**
19. Create an action plan to improve **cooperation among health stakeholders.** Working collaboratively is one of the fundamental tenets of public health. We must thus fully promote it. **[B1-A3] [B1-Part A-A7] [B2-A15] [B3-A3] [B3-A11] [B3-A12] [B3-A22].**
20. Create a group to oversee health **budget allocation and utilization** in the health ministry. If we take care of the resource allocation and utilization issues, we will reap several benefits. **[B3-A16].**
21. Establish a national-level **"Technical Advisory Group for Epidemic and Pandemic Diseases."** This is crucial nowadays, when outbreaks of novel

diseases are frequent. **[B2-A4] [B2-A5] [B3-A14].**

22. Create a national plan to bolster and enhance the nation's **health information systems.** The central nervous system for the healthcare delivery system can be thought of as the health information system. **[B1-Part A-A12] [B1-Part A-A20] [B1-Part A-A14] [B3-A8] [B3-A21] [B4-A11].**
23. To the extent possible, **all tasks** carried out by the health ministry should be **computerized and automated**. The efficiency of the healthcare delivery system can be increased to extraordinary heights. Staff members should be well trained in the use of computers and the relevant software. **[B3-A21].**
24. Create a system to help health professionals become more **analytical and creative thinkers**. The staff's ability to think critically and creatively determines how well the healthcare delivery system functions in the nation. **[B1-Part A-A10] [B3-A28] [B3-A29] [B4-A5 [B4-A11] [B2-A16] [B2-A17] [B2-A20].**
25. Establish a **"Policy Analysis Group" or "Think Tank for the Health Domain"** to effectively improve the nation's healthcare delivery system. They can work like the ship's rudder system, making sure that the healthcare delivery system is going in the right direction and providing correct and effective care for the population. **[B1-Part A-A11] [B2-A19] [B2-A20] [B3-A23] [B3-A30] [B4-A14]**

6.5. Beyond-the-Box Thinking: A Culture to Embrace

General comments. Practicing beyond-the-box thinking is a ticket to becoming a successful health professional. We might need to expand the conceptual framework on which we think because of shifting socio-ecological perspectives, unusual patterns of disease occurrence, rising incidences of zoonotic diseases, frequent outbreaks of emerging and reemerging diseases, increasing demand for health services by the population, rising healthcare costs, increasing frequency of disease outbreaks, and the polarization of unhealthy lifestyles leading to high occurrences of noncommunicable chronic diseases, etc.

Beyond-the-box thinking is a skill that all health professionals should nurture because the epidemiological circumstances surrounding many health issues are ever-changing. They

are **undergoing constant changes**, either in a positive or negative direction. According to the evolving circumstances, we must adjust our plans and interventions. **[B4-A5].**

In the field of public health, as we are dealing with the population, it is crucial that we be alert all the time. We must not do business as usual. We need to practice out-of-the-box and futuristic thinking. **The situations and conditions around us are changing all the time.** Epidemiological changes are happening due to changes in the factors influencing a particular epidemiological situation. Taking an analogy from the clinical domain, it is like making a differential diagnosis and then getting to the specific diagnosis of the disease. Likewise, in the field of public health, we have to select the best possible option from among several options or solutions to solve the problems.

After reading the color- shaded strategic message in each paragraph, the question we must ask ourselves is, "If that is the case, what should we do?"

Many scientific advancements serve as a veritable information gold mine for our brain processes, or beyond-the-box thinking. In the future, genetic manipulation, organ transplantation, vaccination, and immune modulation will be used to treat diseases. We must plan ahead to handle these from an ethical standpoint. Beyond-the-box thinking can **elicit many new ideas and thoughts. [B4-A5].**

Beyond-the-box thinking is indicated when the following conditions are observed:

1. Changing **epidemiological situations** or conditions that lead to unfavorable outcomes;
2. When a **new program or initiative** is about to be launched;
3. Following the **evaluation** of a program or an initiative;
4. When there are differing **viewpoints** on an issue, situation, or condition;
5. When different **recommendations** are compared and analyzed for further action;
6. When discussions are held to finalize the **evaluation** framework for a program or initiative;
7. Before finalizing the **format** of a program's annual report;
8. When **contentious issues** are to be solved collectively;
9. When **national health policies and strategies** are formulated or reformulated;
10. When **national health research policies and strategies** are formulated or reformulated;

11. When **specific strategies** for various domains (clinical disciplines, hospital management, food and drug administration, traditional medicine, human resources for health, health information systems, disease registries, communicable and noncommunicable diseases, general public health, continuing professional development programs, sports and physical education, etc.) are developed;
12. When the **national health plan** is formulated;
13. When contemporary **research topics** are explored and identified;
14. In managing unforeseen **natural calamities** and man-made disasters;
15. When an impending **outbreak** or **uncontrollable health condition** is identified;
16. When **inter-ministerial projects** are about to be launched;
17. When new **teaching methods or approaches** are considered, such as integrated teaching in medical schools and other schools and capacity building initiatives for faculty members in teaching institutions;
18. When any **innovative or new initiative** in the Ministry of Health is contemplated;
19. When the **organization's infrastructure** or organogram of the Ministry of Health is reviewed for change. **[B4-A5].**

We need to **practice both beyond-the-box thinking and epidemiological thinking.** Epidemiological thinking skill is nothing but viewing or analyzing an issue or scenario from different perspectives, angles, and planes and also comparing different scenarios in the context of the epidemiologic triad composed of time, place, and person, in addition to agent, host, environment, and vector factors. Epidemiological thinking skills are necessary to solve public health problems and control or contain diseases, conditions, or outbreaks in the country. **[B1-Part A-A13].**

"What if scenarios" should be practiced among public health professionals, epidemiologists, researchers, and social scientists dealing with public health issues on a regular basis. **This is the best approach to strengthening the epidemiological thinking skill, critical thinking skills, and beyond-the-box thinking skills, opening up our minds, broadening our thinking horizons, and expanding our knowledge spectrum.** This is also one form of testing the knowledge base and knowledge horizon in the field of public health, as well as the technical, administrative, management, and logistics skills of the public health practitioner. It could be considered for any health program of the health ministry. This is the best way to **stimulate creative thinking** for a public health practitioner, postgraduate public health students, or any public health official. The reason given behind each statement should be rational. It could also create a very proactive discussion platform among them. [**B2-A16].**

To acquire a good and reasonable outcome from out-of-the-box and futuristic thinking, we need to have **valid, reliable, timely, and accurate data and information.** Before making a decision, the time, place, personal aspects, and epidemiologic triad (agent, host, and environment) of the scenario must be taken into account. Data must always be transformed into information before making a rational and ethical decision. Rational decision-making should always conform to the principles of public health ethics and medical ethics. **[B4-A5]**

What if scenario "A"?

"If you were appointed as Program Manager of Vector-borne Diseases Control (VBDC) Program in a country, could you outline the initial steps that you are going to take?

"I would start with the following line of action: To get the preliminary information, I will coordinate with the earlier program manager and get general guidance from him or her. Following this, I will have a quick meeting with central-level VBDC staff and then a meeting with VBDC team leaders from seventeen states and regions in the country. Then, **a quick meeting with some professionals** (medical doctors, para-medical staff, epidemiologists, entomologists, health assistants, and representatives of basic health service workers) will be held to learn about the **operational level activities.** During the meeting, I will give guidance on how to handle the following **twenty points** and complete the assigned tasks within three to six months.

The following actions will then be carried out before I refine the national VBDC program policies, strategies, and interventions for immediate implementation. **Many review actions would be done simultaneously.**

1. Existing **human resource** situation of the VBDC Program;
2. A quick assessment of the **capacity and capability** of VBDC Program staff using various modus operandi or checklists;
3. A quick review of the **division of labor** of the VBDC program staff, together with the job description of each category of staff;
4. A quick epidemiological review of the **latest annual report** of the VBDC program;
5. A quick review of the **existing national strategies and interventions** for the VBDC Program;
6. A quick review of **recent outbreak control reports**, if available;
7. A quick review of **internal and external evaluation mission reports**, if available;
8. A quick review of the recent **VBDC Program Annual Meeting Report**;

9. A quick review of the **functioning status of the information system** of the VBDC Program;
10. Get **non-personalized responses** from VBDC team leaders and some central-level staff about their viewpoints for improving the performance of the VBDC Program;
11. A quick review of **entomological perspectives** (vectormapping, vector bionomics, etc.) of vectors involved in vector-borne diseases in the country;
12. A quick review of the **drug-resistant malaria situation** in the country;
13. A quick review of **technical and funding assistance** given by external entities such as WHO, other UN agencies, the Global Fund, RBM, USAID (No more now), APLMA, ADB, WB, Mekong sub-regional RAI, INGOs, etc.;
14. A quick review of the **MoU** concluded with external entities (INGOs and local NGOs) and their implementation status;
15. A quick **budgetary (government) review** of the VBDC program for the last three years;
16. A quick review of the findings of the **resource flow analysis** of the VBDC program, if available;
17. A quick review of ongoing **externally funded projects** being implemented;
18. A quick review of the **role of basic health services workers** in the VBDC Program activities;
19. A quick review of the **role of local NGOs and community-based organizations** in the VBDC program activities;
20. A quick review of all the research projects carried out during the last three years and the situation **of ongoing research projects** in the VBDC program;

The findings emanating from the above reviews and meetings will be summarized and **presented at the national-level meeting**. It should be attended by key officials and team leaders of the VBDC program. Discussion will be made for developing a concrete road map to control vector-borne diseases in the country effectively. The finalized road map, consisting of costed interventions and responsible units and staff, will then be submitted to the Union Minister through proper in-house office procedures for approval. A similar line of thinking can be applied to any health program of the Ministry of Health. **[B2-A16].**

What if scenario "B"?

You received an appointment letter from the President of a developing country, "X," mentioning that you are appointed as the Union Minister for Health in the country, "X." The letter also included a summary of the health situation as well as important information about the healthcare delivery system of the country, "X." What are you going to do? This is another example of thinking aloud, beyond-the-box thinking, or futuristic thinking.

I will tender my duty entry report to the President. Following this, I will study the two documents provided to me very carefully. Knowing that the job of the Minister for Health is very **challenging, taxing, and demanding**, I will do my level best to serve the population of country "X" with all my humility and without prejudice. The responsibility is also huge. The following preliminary activities will be carried out:

I will hold **a series of quick meetings in groups** with the Deputy Minister, Permanent Secretary, Directors-General, Rectors/Deans of the universities, Deputy Directors-General, Directors responsible for various health programs, regional/state/provincial Health Directors, heads of prominent local NGOs and INGOs, associations, organizations, councils, UN agencies, and bilateral program to know the overall scenario in a nutshell. Their **unbiased viewpoints** will set the tone for my future line of thinking and roadmap of activities to be carried out during the tenure of my term as minister.

Following these meetings, in consultation with my senior staff, I will **assign specific groups of professionals** to do the following: The purpose of assigning groups is to create a sense of ownership. **A Gantt chart** will be prepared for the activities mentioned below. Many activities will be carried out simultaneously.

1. To conduct **key informant interviews** with select groups of senior professionals working at different hierarchical levels of the healthcare delivery system, members of parliament, retired senior health professionals, etc., to clarify and get more information. Getting to know the ground reality situation is a priority;
2. To conduct **focus group discussions** with different categories of staff, community leaders, representatives of community-based organizations, ethnic health organizations, INGOs and local NGOs, UN agencies, medical, dental, nursing, and midwifery, health assistant, medical technologist, and pharmacist associations. The purpose is to know their viewpoints, ground reality, and elicit the real situation from different angles and perspectives;

3. To do a quick review of national health policy, national health research policy, national health plan, and various **major strategies of programs** being implemented in country 'X";
4. To quickly review **health-related speeches** made by the President or Prime Minister and important speeches delivered by the earlier health ministers. The policy-related points in the speeches will be considered seriously.
5. To quickly go through **resolutions of the World Health Assembly** for the last three years and resolutions and recommendations of the WHO Regional Committee meetings for the last three years. These will be cross-referenced with the strategies being used in country "X." There must be some congruity between key points of the resolutions and health strategies being applied in the country.
6. To do a review of the **existing human resources** of the Ministry of Health and current and future human resource production scenarios;
7. To do a quick review of the **trend of the budget and finance situation** (allocation and utilization pattern) of the Ministry of Health. The national health account could be used as a reference; (Resource Flow Analysis).
8. To review all the **external financial inputs** (including loans and grants) to the Ministry of Health for the last two budget years;
9. To do a holistic review of the **national laboratory system**;
10. To do a holistic review of the **national hospital system**;
11. To do a holistic review of the **national public health system**;
12. To do a quick review of the **career ladder** of various categories of staff;
13. To do a holistic review of **capacity-building activities** for various categories of staff, (clinical and public health) and continuing professional development programs) for the last two years;
14. To do a quick review of **job description**s for some important posts;
15. To do a quick review of **memoranda of understanding** concluded between the Ministry of Health and different entities;
16. To do a quick review of **reports of external evaluation missions** on various programs for the last two years;
17. To do a quick review of the annual reports of **various programs**; (available last year only);
18. To do a quick review of **important directives,** including SOPs and GLs, issued by the Ministry of Health for the last two years;
19. To do a quick review of the **monitoring and evaluation systems** for different programs being used in the Ministry of Health;

Based on the findings and recommendations emanating from the above activities and in **consultation with my relevant senior staff**, I will give guidance on further actions to be taken. Depending on their importance, actions will be taken in a phase-wise manner. New initiatives may need to be considered later based on the outcome of the **above nineteen activities.**

Simultaneously, the following actions, which have a **broader impact on the health of the population,** will be carried out as a matter of priority.

1. Formulating (if not yet available) and implementing **"National Strategies for Health Literacy Promotion of the Population"** (if available, we will fine-tune it);
2. Formulating and implementing **"Chronic and Noncommunicable Disease Prevention and Control Strategies"** (if available, we will fine-tune it);
3. Fine-tuning and improving the **"Disease Surveillance System" together with the "Sentinel Disease Surveillance System";**
4. Fine-tuning and improving the **"Noncommunicable Disease Surveillance System";**
5. Developing a prototype **public health surveillance system** and testing it;
6. Fine-tuning and updating all the **SOPs and GLs in the clinical as well as public health domains;**
7. Developing checklist type **performance and infrastructure assessment tools** for hospitals, public health institutions, universities, and various health programs. Checklist-type assessment is the fastest approach to knowing the situation, condition, or performance;
8. Fine-tuning and improving **the national health information system,** and the information systems of various health programs;
9. Updating the **computerized system for human resources for health;**
10. Formulating realistic strategies for **working closely with the Ministry of Education** under the umbrella of a health literacy promotion strategy;
11. Incorporating built-in **implementation research projects** for improving the management, administrative, logistics, and technical perspectives of health programs;
12. Developing a detailed plan for **housing projects for staff** of the Ministry of Health;
13. Conducting a national seminar on **"Improving the Working Atmosphere for Staff Working in Hospitals, Universities, and Offices";**
14. Conducting a national seminar on **"Integrating Health Services for Similar Nature of Work";**
15. Conducting a national seminar on **"Improving the Undergraduate and Postgraduate Medical Education System";**
16. Conducting a national seminar on **"Improving the Undergraduate and Postgraduate Nursing Education System";**
17. Conducting a national seminar on **"Improving the Undergraduate and Postgraduate Paramedical Education System";**
18. Conducting a national seminar on **"Welfare of Staff of the Ministry of Health";**
19. Conducting a **"National Health Assembly"** to be attended by representatives from the population at large from regions, states, provinces. The viewpoints from the population perspective are crucial;

20. Promoting the **teaching of ethics** [medical ethics, nursing ethics, public health ethics, research ethics, and the ethics of various clinical and paramedical disciplines];
21. Promoting **disease registry systems** for various types of cancer, diabetes, blood diseases, congenital anomalies, genetic diseases, etc. The selection of diseases will depend on the incidence and prevalenceof the disease concerned.

It is hoped that the above two sets of activities will put the work of the Ministry of Health in alignment with the existing health scenarios of country "X." **The envisaged activities are not exhaustive.** These are just a preliminary line of actions that I will take to get the ball rolling. It is necessary to create a desirable working environment for the staff to function in full swing with commitment.

Additional activities will be incorporated as we go along. While thinking of new initiatives, we should also consider **sunsetting** some of the programs. We should stick to the principle of **doing things depending on changing epidemiological conditions.** The **collective thought process** involving public health professionals, epidemiologists, clinicians, social scientists, researchers, administrators, ethicists, management experts, policymakers, anthropologists, psychologists, and representatives of community-based organizations is necessary for the field of health. This is a very big undertaking, but it will definitely **pay off in the long run. [B2-A17].**

PART B

NEGLECTED TECHNICAL AREAS NECESSITATING ATTENTION

1. Promoting Dental Public Health and Preventive Dentistry

"Networks of community-based organizations must be involved in an organized manner to promote community-based dental public health activities."

The ultimate purpose of promoting dental public health and preventive dentistry is to prevent dental or oral health problems in the future by initiating a **series of dental health promotion initiatives** by community-based organizations, dental health associations, like-minded organizations, public health associations, and concerned officials of the Ministry of Health. This collaborative approach could lead to good oral health for the population.

It is imperative that we improve the oral health of the population, as many **systemic diseases**, such as cardiovascular diseases and diabetes, are linked with periodontitis and periodontal diseases. In a similar vein, poor dental health is linked to low-birth-weight preterm babies. The correlation between poor dental health and the development or progression of disorders affecting the body's organs is becoming more widely acknowledged.

The field of dental public health and preventive dentistry is very broad and includes monitoring the oral health of the population, promoting dental health through the use of various public health interventions, and preventing dental diseases by encouraging health literacy in the general public. We can **target primary, middle, and high school kids as well as university students to achieve long-term effectiveness.** Students can then educate their parents, friends, and family members on the fundamentals of dental public health by sharing the knowledge they have gained. This action has a **hugely favorable multiplier impact.**

Through the involvement of **networks of community-based organizations,** we must arrange the promotion of community-based dental public health initiatives. **Preventive dentistry has many advantages.** It can help with the following:

1. Forming good oral hygiene habits;
2. Lowering the risk of dental caries, gum diseases, and other dental issues;
3. Detecting periodontal diseases in their early stages so that appropriate treatment can be started early;
4. Detecting precancerous conditions in the oral cavity and tongue to start treatment early;
5. Detecting oral manifestations of many systemic diseases at an early stage; etc.

Dental hygienists are in charge of oral health education in several countries. **Oral hygiene instructions** are **crucial for promoting preventive dentistry.** All countries regularly run country-wide immunization programs. We need to take advantage of this by imparting essential dental health knowledge to the parents of children during immunization sessions.

The following activities should be considered in order to e**xpand the knowledge of dental public health** among the population:

1. A quick survey should be carried out not only to elicit general population dental health scenarios but also to gauge the **oral health literacy level** of the population. The survey should also include key informant interviews and focus group discussions.
2. Establish a task group to develop a workable and realistic **"National Strategy for Promoting Dental Public Health and Preventive Dentistry"** in light of the findings of the quick survey on the country's overall dental health infrastructure and dental health situation.
3. Create a **Gantt chart** that shows the key activities of the identified national strategy.
4. The Ministry of Health should allocate **enough funds** to carry out the main initiatives of the previously mentioned national strategy. In the event that full funding for the national strategy is not possible, **prioritization of key initiatives** in the national strategy should be made and funded accordingly.
5. Create a **monitoring checklist** to assess the pace and effectiveness of the actions taken.
6. Develop a **questionnaire** to be used for key informant interviews and also conduct focus group discussions as and when necessary. This is to elicit the overall scenario for implementing the activities that fall under the purview of the chosen strategy.
7. Include the importance of dental public health and practical measures to prevent dental diseases in the **curriculum of primary, middle, and high schools**.
8. Enhance the **school health program activities** of the Ministry of Health in collaboration with the Ministry of Education and parent-teacher associations.
9. Incorporate basic principles of dental public health, preventive dentistry, and epidemiological elements of dental public health into the **curriculum of dental, medical, nursing, and midwifery degree courses.** Furthermore, it ought to be included in other relevant courses offered at the schools of community health or as part of a public health bachelor's degree.
10. **Work collaboratively** across dental, medical, nursing, community health, and public health schools to provide diverse viewpoints on dental public health.
11. **Dental health associations and preventive and social medicine societies** in the country ought to strategize their efforts to advance dental public health in the communities, particularly in the rural areas. **[B4-A13].**
12. Dental public health and preventive dentistry activities should be carried out in **large factories and industries** under the auspices of an occupational health promotion program. In order to carry out this program as a national initiative successfully, careful coordination with relevant entities is necessary.

13. Initiatives for the promotion of public health that are implemented at the l**owest level of the health system's infrastructure**, such as rural and sub-rural health centers, should include dental public health and preventive dentistry programs.
14. Through a **variety of communication channels**, the Ministry of Health and the Ministry of Information shall collaborate closely to disseminate knowledge and information on the importance of preventive dental care to the general public. It ought to broadcast on public television shows as well as anytime there is a sizable population.
15. Myanmar is unique in that it uses **internet-connected tablet phones**, distributed to over 30,000 health workers operating at the community level, to spread health knowledge to the populace. It also includes a 330-page standardized health message book in addition to a wealth of other health-related information. That book includes preventive dental health techniques.
16. Set up **biennial national conferences** on dental public health and preventive dentistry. These conferences ought to emphasize the value and widespread advantages of dental public health and preventive dentistry. The benefits should cover social and economic perspectives for the families engaging in dental public health and preventive dentistry activities.

In essence, increasing the general population's oral health is our ultimate aim, and enhancing health literacy levels **[B2-A2]** in dental public health and preventive dentistry among students and the general public is a crucial first step towards achieving it. Because **dental caries** is common in the general population, we usually assume that it is not a serious worry. The cost of treatment, missed school days for kids with unpleasant dental diseases, unforeseen complications from dental caries, etc., can be a f**inancial strain on the family**. If we have enough understanding about preventive dentistry, we can simply stop this from happening.

In terms of doing **routine oral examinations** on students and providing health education on preventive dental care, school health programs can be very helpful in the field of preventive dentistry. It is possible to identify periodontal disorders and dental cavities early on. Treatment and referrals that are appropriate might start right away. Early adoption of healthy dental practices can significantly lower the country's total morbidity rate from dental disorders. For the family, it could result in significant financial savings that could be put to better use for other deserving causes.

Conclusion

It is observed that in many nations, oral and dental health receive little attention. The general health of an individual's body includes their oral health. It shares numerous **physiological and reciprocal relationships** with a number of the body's major organs. Currently underway are a number of research investigations that examine these perspectives. Numerous new discoveries are being noted. To the mutual advantage

of both groups, we must encourage coordinated and synergistic working relationships between dental and public health associations with regard to preventive dentistry.

It is strongly suggested that the department of preventive and community dentistry in the school of dental medicine be reinforced and promoted. The importance of this subject should be emphasized throughout the scholastic years of the dental medicine degree course. It is advised that several **implementation research studies** [**B3-A15**] be conducted by relevant organizations in order to highlight the importance of preventive dentistry and to ascertain the best course of action for promoting dental public health in the community. Last but not least, it is imperative that we raise **public awareness of dental health literacy.**

Recommended Readings (B denotes book number, and A denotes article number.)

- Health literacy promotion: a far-sighted strategy **[B2-A2].**
- Making public health associations functional **[B4-A13].**
- Conducting implementation research **[B3-A15].**

2. Augmenting the Role of Clinical Pharmacists

"Medication errors can greatly decrease once clinical pharmacists play a more prominent role in the medical field."

It is imperative to promote the role of clinical pharmacists, as they play a crucial role in giving the ***right pharmacological information*** on medicines to patients. This promotion is especially important in resource-limited countries where the health and hospital systems are still developing and the health literacy in terms of knowledge and safe use of medicine among the population is low. This is compounded by the fact that the population can buy medicines freely without a doctor's prescription. Clinical pharmacists typically need to **work closely with doctors**. They need to ensure that the medications prescribed for inpatients and outpatients get the best possible treatment outcomes with fewer side effects.

Clinical pharmacists can **lessen the likelihood of drug** interactions while also ensuring the patient's prescription use is safe. In other words, the health outcomes of patients can be optimized and markedly enhanced by clinical pharmacists. Numerous research studies have conclusively demonstrated these truths. **Collaboration between clinical pharmacists and physicians** is something that has to be encouraged, particularly when it comes to managing chronic illnesses.

A growing number of pharmacists in developing nations are assuming the role of clinical pharmacist, despite certain differences in their duties. The **dearth of clinical pharmacists** is the cause of this. Pharmacists should receive further training to become clinical pharmacists, depending on the availability of resources.

Depending on the country, pharmacists and clinical pharmacists may have distinct roles to play. It should be mentioned that the range of tasks required of clinical pharmacists and pharmacists in developed and developing countries varies. The role can also vary from institution to institution. When developing a **national roadmap** to improve the competence and capabilities of clinical pharmacists, these realities must be taken into account. It will depend not only on the overall health policy but also on the level of health sector development in the country concerned. The usefulness of clinical pharmacists becomes more apparent in rural and difficult-to-reach areas of the country.

The American College of Clinical Pharmacy defines clinical pharmacy as **"a health science discipline in which pharmacists provide patient care that optimizes medication therapy and promotes health, wellness, and disease prevention" and "embraces the philosophy of pharmaceutical care."** Clinical pharmacists can help in achieving rational and optimal use of medications. They can increase patients' understanding of medications so that adverse effects that are not necessary can be minimized and early identification of adverse effects can be promptly addressed.

Even those with higher education levels don't always understand the medications they take. In fact, large medicine shops ought to employ clinical pharmacists or general pharmacists for the sake of patient safety. In many developing countries, medicines can be bought without the **prescription of doctors.** It is necessary to investigate this reality more thoroughly and to take steps to make things better.

Numerous investigations, such as **"Collaboration Among Pharmacists and Physicians to Improve Outcomes Now: The CAPTION Trial"** (https://www.captionstudy.org/), have demonstrated a notable improvement in patient outcomes through the use of clinical **pharmacists and good clinical pharmacy practices.**

Considering the aforementioned, we must **elevate the position of clinical pharmacists. The ensuing twelve initiatives are suggested to improve clinical pharmacists' roles and quality of care.** In nations with limited resources, we must begin these initiatives gradually and step by step.

1. **A quick review** should be made to know the total number of clinical pharmacists and pharmacists employed by private and public hospitals in the country as well as the yearly production capacity of clinical pharmacists, and pharmacists at the schools of pharmacy in the country. Key informant interviews and focus group discussions involving clinical pharmacists and pharmacists should be conducted to obtain diverse perspectives on the hospital work environment and various clinical pharmacy-related concerns.
2. To **encourage more students to enroll in clinical pharmacy or pharmacy schools** and entice more students to attend master and doctoral courses in this field.
3. The **curricula** for clinical pharmacists and pharmacists should be updated, and modern teaching methods should be put in place. **Capacity-building activities** for faculty members of the schools of clinical pharmacy and pharmacy should be organized. This particular endeavor is pivotal to achieving the overarching objective of improving the clinical pharmacy domain. Clinical pharmacy is a branch of pharmacy, and the educational requirements of a clinical pharmacist are somewhat more extensive than those of an ordinary pharmacist. The school of clinical pharmacy should also be strengthened and modernized from several perspectives.
4. The **career ladder** for clinical pharmacists should be attractive enough to entice students to join the clinical pharmacy disciplines. If not, appropriate policy adjustments ought to be made.
5. Key informant interviews and focus group discussions should be held periodically to get information about the **difficulties and obstacles faced by clinical pharmacists** in their line of work as well as their general opinions on a variety of issues.
6. **Posts for clinical pharmacists** ought to be established in all kinds of hospitals across the country.
7. Programs for **continuing professional development (CPD)** ought to be made available, and a **license to practice clinical pharmacy** should only be granted following the completion of a predetermined number of CPD courses in the field.
8. A **clinical pharmacy council and clinical pharmacist associatio**n should be formed, if not yet available. Another option is that it could be incorporated into the pharmacy council and pharmacist association. The main purpose is to enhance the role and prestige of clinical pharmacists.
9. **To advance the field of clinical pharmacy**, hospital directors, senior clinical pharmacists, senior physicians, the clinical pharmacist association, the dean of the pharmacy school, and the clinical pharmacist council should collaborate closely.
10. A number of courses offered by the pharmacy school should cover and discuss the **eight major principles of the code of ethics for pharmacists.** Students studying clinical pharmacy or working with clinical pharmacists should carefully consider and comprehend a code of ethics for pharmacists or clinical pharmacists. If at all feasible, clinical pharmacy schools ought to develop a department dedicated to **pharmacy practice ethics.**

11. In order to **update the state-of-the-art knowledge on clinical pharmacology**, regular national and international seminars, forums, and workshops should be conducted. **Continuing pharmacy education (CPE)** credit units should be given to those clinical pharmacists attending training courses on relevant subjects of clinical pharmacy. The CPE units could be used for many other purposes.
12. Develop a **clinical pharmacist board certification** scheme modeled after the US medical board certification program. Clinical pharmacy programs are in various stages of development in developing countries. A country that is just beginning to develop its clinical pharmacy should establish connections with associations of clinical pharmacists in countries that have reached a respectable degree of development.

We need to practice a **patient-centered approach** to enhance the clinical pharmacy discipline. A quick assessment of the practice of clinical pharmacy, the performance of clinical pharmacists, and the number of clinical pharmacists available in health institutions (public and private) should be done. The following questions should be asked:

1. Do we have a **sufficient number** of clinical pharmacists in the country to fill the available clinical pharmacist posts in health institutions?
2. What is the **motivational status** of clinical pharmacists?
3. What is the l**evel of work performance** of clinical pharmacists in health institutions?
4. Are clinical pharmacists aware of the eight major principles of the **code of ethics for pharmacists?**
5. Is the clinical pharmacist **career ladder** attractive enough to draw in fresh students to clinical pharmacy programs?
6. Why are **clinical pharmacy courses** unappealing to students?

As per the findings, appropriate measures for improvement should be implemented. It is also necessary to create clinical pharmacist **job satisfaction indices**. The necessary adjustments to improve clinical pharmacists' job satisfaction should be made in light of the indices.

Conclusion

There is an urgent need to improve the field of clinical pharmacy while also enhancing the capacity and capability of clinical pharmacists in developing countries. This is an area worth investing in in the context of obtaining favorable outcomes for patients. We need to expand the **availability of clinical pharmacy services in health institutions** (public and private) and large medicine shops in the country. Through this, we can improve the medical knowledge base of the population. This could have several benefits for the population. **Medication errors** are happening all over the world. Some are fatal, and many have short- and long-term untoward effects on the patients. Enhancing the caliber of clinical pharmacists can definitely and effectively reduce the number of medication

errors in health institutions. As clinical pharmacists are integral members of the clinical care team for patients, we could significantly lower the incidence rate of medication errors. The role of clinical pharmacists is all the more important as new medicines are evolving with increasing momentum.

Recommended Readings

- Innovation in Clinical Pharmacy Practice and Opportunities for Academic-Practice Partnership—American College of Clinical Pharmacy (Pharmacotherapy 2014; 34 (5): e45–e54) doi: 10.1002/phar.1427

3. Expanding Mental Health Promotion Activities

"As mental health plays such a significant role in the mundane affairs of human beings, responsible professionals make every effort to enhance the mental well-being of the general public."

The preamble to the WHO constitution clearly states that **"health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."** The importance of mental health is noticeably emphasized. The WHO also conceptualizes mental health as **"a state of well-being in which the individual realizes his or her own abilities, can cope with normal stresses of life, can work productively, and is able to make a contribution to his or her country."** The US CDC mentioned that **"mental health includes emotional, psychological, and social well-being."** As per these connotations, mental health is an area that we should not neglect in carrying out the activities of the healthcare delivery system. Possessing a good mental health status is essential for every stage of life, from young age to adulthood to old age. In this article, mental health and mental well-being are used interchangeably.

It is noted that the WHO has formulated the **"Comprehensive Mental Health Action Plan 2013–2030."** Technical experts from 194 WHO Member States prepared the action plan. It was adopted at the 66th World Health Assembly. In 2021, the 74th World Health Assembly endorsed updates to the action plans. Each country needs to review this

action plan and carry out the action points to the extent possible. As this is prepared in a global context, each country needs to adapt the action points in line with the country's mental health scenarios. It is important to note that **mental health is a very broad topic.** There are several challenges to overcome, and every effort should be exercised to do so. Furthermore, while considering strategies and initiatives for mental health promotion to be implemented in different countries, we should keep this updated action plan front and center.

Moreover, many countries lack access to adequate mental health services. Additionally, a lot of people are **unaware that their mental health is subpar.** But whether they realize it or not, they are experiencing the negative consequences of inadequate or poor mental health. Services and initiatives for promoting mental health are typically not listed among the illnesses and ailments that the ministries of health have designated as priorities. We really ought to improve this situation, given the following circumstances:

1. Poor mental health is **associated with depression** and can lead to many physical health problems. This affects the family's social and financial situation and, hence, causes a host of problems for the family as well as the community.
2. There is potential for an **increase in homicidal and suicidal rates**, which is bad for the country. Alcoholism will become more common, which will have numerous negative consequences.
3. Mental health is an **integral component of health** and is more than the absence of mental illnesses. It includes social well-being, psychological fulfilment, and emotional satisfaction. This has positive implications for interpersonal relationships and connections. It may help the populace reach their goal of **gross national happiness.** A person's potential can be fully realized, and job productivity can rise when they are in good mental health or mental well-being. There are a multitude of reasons why we should promote the mental well-being of the population.
4. As mental health is a **basic human right**, every effort should be made so that people will have the highest attainable standard of mental health. By promoting mental health, we are giving people basic human rights.

If we want to revitalize and advance successful mental health promotion initiatives in the country, the following facts should be taken into account:

1. The **country's national health policy** ought to emphasize the significance of mental health.
2. The **"National Mental Health Promotion Task Force"** should be formed with specific terms of reference. The task force's ability to function effectively depends on its membership.
3. **National mental health surveys** should be conducted with technical assistance from the World Health Organization, the World Federation for Mental Health, the WHO

Collaborating Center for Research and Training in Mental Health Services, the WHO Collaborating Center for Capacity Building and Training in Global Mental Health at Columbia University, etc.

4. To ascertain the mental health state of elementary, middle, and high school pupils, **school health surveys** ought to be conducted. It might also be done with college students in mind.
5. Using **a variety of diagnostic techniques**, the factors influencing the country's population's mental health should be further explored.
6. Appropriate, affordable, and workable **national plans** for mental health promotion should be developed for the country based on the results of the mental health survey conducted countrywide and the mental health survey conducted in schools. By all means, the national plans ought to be put into practice. Furthermore, the World Health Organization stressed that **"mental health is determined by a complex interplay of individual, social, and structural stress and vulnerabilities"** and should be taken into consideration while creating initiatives for mental health promotion.
7. In order to address mental health concerns strategically and effectively, ways and means for obtaining the **various types of mental health workers** should be taken into account.
8. Expand **community-based mental health promotion initiatives** and encourage networking among themselves.
9. Plan out the ways in which the Ministry of Health could cooperate with **civil society groups** and pertinent local associations that support mental health in the country.
10. **School-based social and emotional learning programs** should be promoted in conjunction with experience-sharing platforms among the staff running the programs.
11. One sensible option to take into consideration is the **integration** of mental health services into the operations of the general healthcare delivery system.
12. Where there are experts available to provide care, community mental health services ought to be offered. **A network of community mental health service centers** could be formed for the sharing of experiences and giving services to the population.
13. Every effort should be made to conduct W**orld Mental Health Day and National Mental Health Days** all over the country. The WHO and the World Federation for Mental Health fixed October 10 as World Mental Health Day in 1992. It is celebrated by WHO Member States to raise awareness of mental health issues in support of mental health promotion activities. (https://www.who.int) The overall objective of World Mental Health Day is to raise awareness of mental health issues around the world and mobilize efforts in support of mental health. Each year has a theme. Some examples are: **"Mental health is a universal human right"** (2023)**; "Make mental health and well-being for all a global priority"** (2022)**; "Mental health care for all: Let's make it a reality"** (2021)**; "Move for mental health: Let's invest"** (2020)**;**

"Focus on suicide prevention" (2019)**; "Young people and mental health in a changing world"** (2018)**; "Mental health in the workplace"** (2017)**; "Psychological first aid"** (2016)**; "Dignity in mental health"** (2015)**; "Living a healthy life with schizophrenia"** (2014)**; "Mental health and older adults"** (2013); In fact, each country has to promote activities relevant to the theme of World Mental Health Day for that year. It should not be a one-day event. Some countries have conducted mental health weeks, such as Australia. It is mainly to create and raise awareness of the importance of mental health. In the context of individual countries, previous themes can be selected and conducted as **National Mental Health Days.**

14. World Mental Health Month was also initiated by the United Nations to celebrate awareness for the global community in an empathetic way with a unifying voice, helping those affected to feel hopeful by empowering them to take action and to create lasting change. This **world mental health month** is acknowledged across the world. (https://www.un.org). If funding is available, we may think of doing it.
15. In order to determine the best tactics and initiatives within the specific environment of each country, **implementation research** on mental health promotion initiatives should be conducted.
16. Increase the number of mental health-related topics, the significance of mental health, and mental health promotion initiatives included in the **curricula** of medical and nursing degree programs, as well as in bachelor's and master's degree programs in public health.
17. Provide additional **reorientation training sessions** on mental health promotion to internal staff members who oversee mental health promotion initiatives.
18. Make the **mental health information system** more robust and efficient. In general, most countries do not have this fully established. It is important to share the experience of countries with fully developed mental health information systems with countries where the information system is not up to par.
19. Another area that requires our attention is the improvement of **mental health among prisoners.** Mental health issues are the cause of many incarcerations. One solution we might take into consideration to prevent future incarcerations due to mental health issues is counseling sessions for inmates.
20. Conduct a **national seminar for the promotion of mental health.** Mental health experts, psychiatrists, psychologists, psychotherapists, mental health occupational therapists, professional counselors, public health specialists, epidemiologists, demographers, social scientists, mental health nurses, social workers, peer workers, mental health recovery and rehabilitation workers, policymakers, legislators, general practitioners, representatives of pertinent associations dealing with mental health promotion, representatives from the WHO and World Federation for Mental Health, etc. The action points coming out of the national seminar should be prioritized and incorporated into the **"National Strategies for Mental Health Promotion."**

Conclusion

Realizing **universal access to mental health services** is our ultimate goal. In order to determine if we are on the right track in achieving this goal, we should evaluate the country's current efforts to promote mental health using the pertinent and updated indicators found in the WHO's **"Comprehensive Mental Health Action Plan 2013–2030."** If all the stakeholders collaborate in the upcoming years, it is hoped that we will be able to alter the course and broaden the scope of the mental health area.

The WHO also stated that **"there is no health or sustainable development without mental health; mental health is too important to be left to the professionals alone, and mental health is everyone's business."** As alluded to earlier, we should strengthen and promote community-based mental health services as much as possible. Slowly, we have to increase the number of community-based mental health services in a phase-by-phase manner.

We should not lose sight of the fact that the number of specialized and general health workers dealing with mental health issues is insufficient in developing countries. **Civil society movements for mental health promotion** are also few and far between. In essence, we need to strengthen several perspectives on mental health promotion in developing countries. If all the stakeholders collaborate in the upcoming years, it is hoped that we will be able to alter the course and broaden the scope of the mental health area.

The cross-cutting approaches and principles outlined in the WHO's **"Comprehensive Mental Health Action Plan 2013–2030,"** such as evidence-based practice, human rights, universal health coverage, a life-course approach, a multisectoral approach, and the empowerment of people with mental illnesses and psychosocial disabilities, must also be given careful consideration.

Recommended Readings

- Resolution WHA66/8: Comprehensive Mental Health Action Plan (2013–2030)
- Resolution WHA72: Comprehensive Mental Health Action Plan (2013–2030)

4. Increasing the Availability of Health Communication Specialists

"Health communication specialists play a critical role in times of epidemics, pandemics, natural disasters, and public health emergencies."

Information sharing with the general public or a targeted group of people is essential in the field of public health. Disseminating inaccurate, partial, prejudiced, or one-sided information can have a variety of negative impacts and reactions on the populace. There may be a significant **decline in public trust** in the issuing entity, and in such cases, irreparable harm may result. To ensure that crucial information or messages are communicated to the general public in a timely, clear, and effective manner, the Ministries of Health should have a sufficient number of highly qualified and skilled health communication specialists. Only then is possible to raise the population's level of health literacy. Numerous benefits could result for the population's general health as a result of this.

A *modus operandi* and a basic generic format should ideally be available for disseminating messages and information to the general public. One should not take it for granted that it is routine work. Rather, the intended audience should be given **accurate, timely, and up-to-date information** and action points, and this requires great seriousness. It is mandatory to provide the name of the issuing body, the targeted regions of the country, contact phone numbers for clarification, and the date of release when disseminating information and messages to the general public. The experts in health communication should handle all of these details.

The health program operations of the Ministry of Health must be tightly interwoven into and rooted in the community they serve. If the population is not involved at the grassroot level in the activities, the public health program will never reach its goals. The function of specialists in health communication is crucial in that regard. Health communication specialists are compared to the **umbilical cord in a human body,** which connects the mother and child, or, more specifically, the population and health initiatives. There should be no breaks in the communication line, and the linkage or channel should be as seamless as possible.

In light of this, we require a large number of health communication specialists to carry out this crucial task. In general, after **consulting with technical experts** of relevant

health programs, health communication specialists of the Ministry of Health should develop communication plans, roadmaps, and concise messages to be communicated to the public or recipients. They must also disseminate crucial information to the media in addition to successfully educating the general public, which comes from a variety of social and educational backgrounds.

Experts in health communication play a critical role during public health emergencies, natural disasters, and disease outbreaks or pandemics. During an epidemic or pandemic, efficient public health communication can aid in the prevention, control, containment, and reduction of the subsequent spread of diseases. Additionally, it might **steer the trajectory of the spread of disease or disaster** in a positive way. The gravity of the situation of the epidemic or pandemic can become mild.

The dissemination of precise information to be relayed to the public during epidemics and pandemics is extremely delicate and important. Additionally, it must be acceptable to the accountable epidemiologists and public health specialists. Here, the **timing of the release of the message or information** is crucial. The message's or information's phrasing needs to be carefully considered and chosen. The communication specialists also ought to be in charge of improving the web pages' communication aspects as well.

It is suggested that the following **seventeen points** be taken into consideration to have effective, extremely knowledgeable, and qualified health communication specialists in the Ministry of Health:

1. Do **a quick review** of the number of well-trained communication specialists available in the ministry. Then, their background educational level should be assessed. They should at least have a bachelor degree in communications, public relations, journalism, or a related communication field.
2. Do **a quick assessment** of their outputs in terms of the expected outputs that they need to produce. At the same time, reasons for nonachievement of the intended outputs should be explored.
3. Eventually, make sure that the school of public health or other pertinent institutions offer bachelor' or master's **degree programs in health communication** throughout the nation.
4. If the need for health communication specialists for the ministry is urgent, **diploma courses in health communications** should be conducted in collaboration with well-established schools in the country. The suitability of the course content should be assessed and improved by qualified health professionals from the Ministry of Health and those who have long experience in health communication initiatives. To produce health communication professionals of the highest caliber, teaching methods, instructional aids, and student assessment techniques are all equally crucial. If the course is the first of its kind, student feedback or recommendations are crucial for making future courses even better.

5. Create a **conducive working atmosphere** that will enable health communication specialists to collaborate closely as part of a team with Ministry of Health staff members who oversee health programs, i.e., epidemiologists, scientists, research managers, administrative officers, health program directors, and public health specialists.
6. Assure that communication specialists are **knowledgeable about the range of tasks** involved in diverse health initiatives, disasters, and public health emergencies. Make them aware of the country's underlying politics, the national health policy, important strategies, and numerous health initiatives run by the Ministry of Health.
7. Provide a bright future or **promising career ladder** for incoming health communication professionals to draw in more applicants for courses taught by health communication specialists.
8. There should be **regular forums** for the sharing of experience among health communication specialists working for the Ministry of Health. This could also serve as in-service capacity-building activities to the ultimate benefit of the population.
9. Hold one **national workshop** to develop national health communication plans and strategic initiatives, and also conduct **experience-sharing biennial conferences** for health communication experts.
10. Experts in health communication should constantly check the **most recent research findings**, recommendations, and SOPs listed on the websites of the US and European CDCs, the World Health Organization, and pertinent UN bodies. This is particularly crucial during pandemics and disease epidemics.
11. Health communication specialists should constantly be aware of **how the public is responding** to the strategic information that is being shared with them.
12. Let professionals in health communication **feel proud of their work**. Inform them that their work has the potential to significantly impact the population's health.
13. **Highlight the role** that health communication specialists play in the larger health team's efforts to enhance the general public's health.
14. Conduct **implementation research studies** on various aspects of the work of health communication specialists.
15. Specialists in health communication should **play a bigger role** in national initiatives to promote health literacy.
16. **Building and maintaining friendly and cooperative connections** between the public, media representatives, and the Ministry of Health is one of the key responsibilities of health communication specialists. According to that principle, they ought to have the capacity for both written and oral communication, **communication ethics,** and the qualities of tact and honesty. Instead of adopting a demand-driven approach, they ought to adopt a proactive one. In addition to their communication abilities, they should be knowledgeable about and proficient in health affairs.
17. As alluded to earlier, holding brief, **six-month training programs** for current Ministry of Health employees who are interested in health communication is one way to

address the issue of a shortage of health communication specialists relative to the size of the country. Professors with expertise in the fields of public health, social science, communication, and health sciences must instruct these short courses. For the purpose of conducting these quick courses, the World Health Organization

Conclusion

Specialists in health communication have a crucial role that is especially apparent during public health emergencies, disasters, pandemics, epidemics, and disease outbreaks. Reviewing and evaluating the steps taken by health communication specialists during these events as well as in regular circumstances is vital. The current state of the country's healthcare delivery system, its infrastructure, its traditional, ethical, and social systems, global health scenarios, and other pertinent factors should all be taken into consideration when creating the **job descriptions** of health communication specialists.

One of the important functions of health communication specialists is to promote a **positive public image of the Ministry of Health**. They should realize that they are representing the Ministry of Health in conveying important health information and messages to the recipient population. They must therefore be up-to-date on current events or the most recent information in the field they are working in. It should be highlighted that health information communication specialists employed by commercial companies have quite different duties and responsibilities than those of health information specialists employed by ministries of health. It is important to emphasize that health information communication specialists working for commercial enterprises have quite different roles and obligations than those working for ministries of health.

To become successful health information communication specialists, they need to **work very closely** with health program managers, public health professionals, epidemiologists, researchers and research managers, other health information specialists, health administrators, health strategists, and health policy makers. They should **not work in isolation or in silos**. They are essentially the Ministry of Health's proximal and distal arms and legs.

5. Enhancing the Utility of Resolutions of the World Health Assembly

"The resolutions are framed in a global context. Each country has to adapt to suit the local epidemiological situation, developmental status of the healthcare delivery system, the availability of human resources, and funds to carry out the selected action points in the resolutions."

The World Health Organization (WHO) holds the World Health Assembly (WHA) **annually,** which is attended by high-level delegations from 194 WHO Member States. The delegations are generally led by the Minister of Health of the respective countries. The World Health Assembly is the **premier decision-making body of the WHO** and **adopts the policy and strategies of the organization.** Several contemporary health topics or issues are discussed in depth by the high-level delegation members of Member States, and resolutions coming out are endorsed and adopted.

Each resolution is generally composed of **four sections**.

1. **A preamble** endorsing, noting, supporting, welcoming, and reaffirming a particular issue or subject matter under discussion;
2. **Urging the Member States** for consideration to take specific actions on a particular issue or subject matter under discussion;
3. **Inviting international organizations and other relevant stakeholders** for collaboration with respect to the particular issue or subject matter under discussion;
4. **Requesting the WHO Director-General f**or specific actions to be taken with respect to the particular issue or subject matter under discussion;

Each WHA adopted a set of resolutions. Many of the action points in the resolutions are still valid today. Although the resolutions are **not legally binding**, they are important international policy documents that can set the stage for public health actions implemented by 194 Member States. They can influence WHO program budget allocation as well as policy direction and fund use by donors.

Background documents for each health topic or issue are distributed in advance to the Member States before the WHA. These background documents give **a global synopsis**

of what is happening in the area or agenda to be discussed. These documents are very informative and beneficial for the health program directors. These are **must-read documents for health program directors.**

The WHA resolutions coming out should be thoroughly reviewed, analyzed, and referenced by upcoming public health professionals as soon as they are freshly coming out of the WHA. It will not only give broad views of the agenda, topic, or health issues under discussion but also **highlight the specific actions to be taken** if one would like to improve, augment, solve, or ameliorate the challenging situation. It would be even more productive if the resolution was scrutinized by a group of public health professionals and concerned professionals of the Ministry of Health responsible for the particular subject dealt with in the resolution.

The responsible senior officials of the Ministry of Health should assign several groups of professionals to deal with each resolution adopted at the recently held WHA in May of that year. One caveat, though, is that the **resolutions are framed in a global context**. Each country has to adapt to suit the local epidemiological situation, the developmental status of healthcare delivery system infrastructure, the availability of human resources, and funds to carry out the selected action points in the resolutions. One has to adjust or adapt it as per the requirements of the country concerned. In other words, the resolution is like **a menu card of food items available in the restaurant**. One can select the action points in the order of the sequence required to do so. In fact, the action points mentioned in the resolution should be **cross-referenced with the existing national strategies and activities** being carried out in the country. Necessary adjustments can easily be made.

The country's Minister of Health, who used to lead the country's delegation, has to ensure that undivided attention is given to the resolutions coming out of the WHA. It would be unethical if seriousness was not accorded to the resolutions. A high-level **"Technical Task Force on Implementation of WHA Resolutions"** should be formed to follow up on the extent of actions taken on the resolutions. Generally, many countries give less attention to the action points mentioned in the resolutions. The concerned WHO's country office staff can lend a helping hand in reviewing the resolution. This high-level **"Technical Task Force on Implementation of WHA Resolutions"** should assign tasks to relevant health program managers to do this. In this context, WHO headquarters should oversee how the WHA resolutions are viewed and taken up by the 194 Member States.

Another duty of the responsible officials of the Ministry of Health is to see whether the WHO is taking any action on the points mentioned under the rubric **"Requesting the WHO Director General to take action."** If not, the international health division or responsible department of the Ministry of Health should coordinate and collaborate with the WHO country's office to get it done. The 194 Member States' health systems will benefit many things. Several points mentioned in that section may be highly relevant to many countries.

The resolutions are also very useful to WHO staff at the country, regional, and headquarters levels. It also gives important information directly or indirectly to relevant UN organizations and INGOs, especially from the section named **"It urges the WHO Director General."** Sometimes, specific requests or suggestions were made to the INGOs.

Conclusion

All in all, the resolutions are **guiding lights for the countries' health systems.** There are many resolutions pertaining to medical care in the countries, although the majority of the resolutions are related to public health and its affiliated topics. The WHA can be regarded as a **global platform** to share experience among 194 Member States. One has to reap the full benefits of this by attending the assembly seriously. Each country may create a **resolution repository** under different headings. We can even do research on WHA resolutions from different perspectives.

NB. *The author has attended the World Health Assembly twelve times while serving in WHO SEARO as Chief of Internal Review and Technical Assessment, Director of Programme Management (DPM), advisor to the then Minister of Health, Myanmar and also as Union Minister for Health and Sports, Myanmar.*

6. Strengthening Medical Education Units in Academic Institutions

"Academic institutions' ability to produce high-quality products is contingent upon the availability and performance of their medical education units."

The medical education units in academic institutions are like **mitochondria in human cells**. They give energy or serve as a booster, making the whole education process in academic institutions solid, operational, and effective. **Getting quality product**s, i.e., human resources for health, from an academic institution depends on the availability or existence of:

1. Capacity and capability of faculty members;
2. State-of-the-art teaching aids and instruments;
3. A result-oriented teaching system;
4. An up-to-date and realistic curriculum;
5. Effective student assessment methods;
6. A conducive teaching environment;
7. A state-of-the-art library with easy access to the web;
8. Wide-ranging extracurricular activities for the students;
9. A built-in suitable practicum for students;
10. Mentor-mentee programs;
11. Good research environment;
12. An attractive career ladder system for the faculty members and staff;
13. Perks and privileges for the faculty, etc.

Concerned authorities should try to make all of the aforementioned requirements available, facilitate, support, and enhance them.

The **functions of medical education units**, among others, should:

1. **Oversee the process** of medical or nursing or public health or medical technology or pharmacy or community health or any discipline and improve the scenario in line with the contemporary developments happening all over the world;
2. Provide **educational services** to support and assess areas requiring attention;
3. Provide and pave the way for **faculty development and faculty exchange programs**;
4. Provide **technical and strategic support** to improve the (a) existing curriculum, (b) teaching methods, (c) teaching environment, (d) student assessment methods, (e) examination system, (f) extracurricular activities, (g) student-teacher interactions and relationships, (h) mentor-mentee program, (i) lunch-time talk or seminar, (j) continuing medical education (CME) programs, (k) continuing professional development (CPD) programs for faculty members, (l) assessment of clinical skills, (m) patient-centered education, (n) accreditation process of academic institutions; (o) overall aspects of undergraduate and postgraduate medical education; etc.
5. Strive to make the medical education system in alignment with the existing **"National Human Resource for Health Policy"**;
6. Follow the objectives and planned activities as mentioned in the existing **"National Human Resource for Health Strategic Plan"**;
7. Ensure that teaching and discussion of **ethics** (medical, nursing, public health, etc.) In academic institutions are included **in the curriculum**;
8. Arrange for conducting the **"National Conference on Medical Education,"** at least biennially;
9. Pay special attention to **"Capacity-Building Training Workshops for Faculty Members"** and **"Faculty Exchange Programs"** with sister universities from abroad and in the country;
10. Provide an **annual performance report** on its work to the union minister for health and the union minister for education through the normal office procedures;

The process for improving, consolidating, strengthening, innovating, assisting, supplementing, reinforcing, supporting, emphasizing, and underpinning the above-mentioned entities should be carried out on a continuous basis. The medical education units can be directly or indirectly involved in the **healthcare transformation** in the country. This can be achieved through extensive improvements in the education and training of healthcare professionals.

The medical education units should **not function in isolation**. They should be well connected with the Ministry of Health and the Ministry of Education. In addition, **networking** with their counterpart units or departments in academic institutions in other countries should be done. **Regular communications** with the World Federation for Medical Education **(WFME)**, the World Medical Association **(WMA)**, the International Council of Nurses **(ICN),** the Global Medical Technology Alliance **(GMTA)**, the World Federation of Public Health Associations **(WFPHA)**, regional and global-level societies for different clinical, para-clinical, and public health disciplines, etc. It is essential that **strong linkages** with WHO regional associations for medical education, e.g., the South-East Asian Regional Association for Medical Education **(SEARAME)**, the Association for Medical Education in the Western Pacific Region **(AMEWPR)**, the Association for Medical Education in the Eastern Mediterranean Region **(PAFAMS)**, the Association for Medical Education in Europe **(AMEE)**, the Pan American Federation of Associations of Medical Schools **(PAFAMS)**, and the Association of Medical Schools in Africa **(AMSA)**, be established. Likewise, medical education units in other academic institutions (dental, nursing, public health, pharmacy, medical technology, community health, traditional medicine, etc.) should keep in touch with respective global and regional-level associations, federations, and councils. The objective is to get **information on the latest developments in respective disciplines i**n the context of promoting the education system.

The purpose of initiating **networking** with these entities is to get up-to-date information in several perspectives of medical education in terms of information on curriculum, teaching methods including integrated teaching, teaching aids, student assessment methods, faculty capacity building activities, ethical standards, research capacity building and research promotion, continuing medical education **(CME)**, continuing professional development **(CPD)**, functions and management of Institutional Review Boards **(IRB**), faculty exchange programs, evaluation methods used for medical education related issues, problems, issues, and challenges encountered in other academic institutions, career ladders of faculty members, inter-academic institutions' conferences and seminars, extracurricular activities of academic institutions, etc. Relevant information should be utilized to further improve the medical and other academic institutions in the country.

Medical education units should be run by professionals who have at least a postgraduate master's degree in medical education. Interested faculty members from various disciplines working in academic institutions can be recruited, at least on a part-time basis, to help run the unit. This is required because a sufficient number of medical educators are not available in resource-limited or developing countries. **Academic institutions without medical education units** will be at a disadvantage in producing quality products.

Conclusion

Prioritizing the reinforcement of medical education units at academic institutions is crucial. The generation of high-quality human resources for the health sector can be ensured by **robust and efficiently operating medical education units.** Various categories of health professionals produced by the academic institutions will manage and run the nation's healthcare delivery system. In other words, the efficiency and performance of the healthcare delivery system depend on the effective functioning of medical education units in academic institutions.

The medical education units in academic institutions should facilitate producing **"technically savvy, ethically-minded, fully committed, research-oriented, analytically insightful, and futuristic-thinking health professionals"** in the country. These six characteristics are certainly important for the development of the country's healthcare delivery systems. The medical education units from various academic institutions should network and **work as a closely knitted team**. This will reinforce the capacity and capability of one another. Regular experience-sharing meetings among medical education units of academic institutions could yield very crucial information. The quality of medical education in the country can be greatly improved if the medical education units are dynamic and strong.

NB. Medical education denotes education for all categories of health professionals, not necessarily in the medical domain.

Recommended Readings (B denotes book number, and A denotes article number.)

- Producing ethically minded and future-oriented health professionals **[B2-A3]**.
- Producing well-qualified MPH graduates **[B2-A11]**.
- Reinforcing human resources for health **[B3-A4]**.

7. Forming a Policy Analysis and Oversight Unit

"In order to make the healthcare delivery system more adaptable, successful, and efficient, the policy analysis and oversight unit is required . It is like a gatekeeper of the Ministry of Health, where all undesired entities, strategies, programs, and activities will be fine-tuned, adjusted, changed, or eliminated."

There should be a **mandatory establishment** of a policy analysis and oversight unit in the Ministry of Health. The benefits that can be obtained from the services of this unit are immense for the country's health system. The purpose of establishing this unit in the Ministry of Health is to review the existing national health policy, national health research policy, key strategies of major health programs, policies of other relevant ministries that can exert implications on the health domain, and specific issues related to the below-mentioned entities *vis-à-vis* existing epidemiological situations in the health domain and beyond.

It is desirable that the members of the policy analysis and oversight group are **highly experienced professionals**, with some upcoming technocrats. Preferably, the members of the unit should consist of public health experts, epidemiologists, social scientists, health economists, health administrators, statisticians, research scientists, policy analysts, health strategists, planners, members of parliament, public health ethicists, hospital directors, health program directors, etc. The group must do their work with the **utmost unbiasedness.** The members of the group should have **no vested interest**, and the suggestions and decisions made should be fully unbiased. The members of the group should sign the **"Disclosure Form and Declaration of Vested Interes**t."

The output of the work of the unit will **yield strategic information** that can be applied in

1. **Formulating or reformulating** national health policy;
2. **Developing** strategies for various health programs;
3. **Deployin**g health personnel appropriately;
4. **Allocatin**g rational funding to various health programs;
5. **Initiating** new health programs;
6. **Sunsetting** some existing health programs;

7. **Opening** new hospitals and health centers;
8. **Formulating or reformulating** national health research policy and other affiliated policies;
9. **Conducting** innovative training workshops;
10. **Updating and resetting** the continuing medical education (CME) and continuing professional development programs (CPD);
11. **Updating the curriculum** of various undergraduate and postgraduate training courses;
12. **Modifying** the career ladder of various health disciplines;
13. **Streamlining** the national health supply chain management system;
14. **Rationalizing** the overall management and administrative system;
15. **Modernizing** the staff assessment and promotion system;
16. **Promoting** healthy public policy; etc.

The **work spectrum** of the unit is wide-ranging. There are two major categories of the work of the unit, i.e., policy analysis and oversight. The work on these two should go hand in hand. The oversight function of the unit is to ensure that policies are adhered to and that existing strategies and activities are effective, efficient, and achieve their intended objectives. We may conduct quick surveys and implementation research, and some specific indicators will be used to assess it.

Conclusion

The efficiency of the policy analysis and oversight unit is generally and directly related to the efficiency of the healthcare delivery system, which in turn can deliver good healthcare services to the populace. The personnel of health programs should view this policy analysis and oversight unit as one of the supporting pillars for getting good healthcare services and also making their programs effective. The task of the group is very huge, and a **Gantt chart** should be prepared to make their work systematic and timely. The findings of the group should be thoroughly reviewed by high-level officials of the Ministry of Health before being submitted to the health minister. The health minister can take action as appropriate.

Recommended Readings (B denotes book number, and A denotes article number.)

- Tripartite collaboration for promoting public health **[B1-A3]**.
- Achieving a long-term dividend in population health **[B1-A4]**.
- Rational decision-making in public health **[B1-A11]**.
- Reviewing and revising the national health plan: a practical perspective **[B1-Part A-A14].**
- Can we improve the effectiveness and efficiency of the healthcare delivery system? **[B2-A8]**.
- Restructuring the Ministry of Health **[B2-A19]**.

- Ringing the bell for the Ministry of Health **[B2-A20]**.
- Improving the health status of the population **[B2-A21].**
- Formulating or reformulating national health policy **[B4-A16]**.
- Principles and generic approaches to tackle the strategic challenges **[B3-A1]**.
- Promoting tripartite collaboration **[B3-A3]**.
- Strengthening the public health domain **[B3-A5]**.
- Enhancing the effectiveness and efficiency of the healthcare delivery system **[B3-A6]**.
- Stopgap measures to increase the effectiveness of public health programs **[B3-A25]**.
- Thinking "outside-the-box" in the context of developing countries' health scenarios **[B3-A28]**.
- Managing a health program with a suboptimal number of health staff **[B3-A29]**.
- Decision-making in public health **[B3-A30]**.
- Formulating or reformulating national health policy **[B4-A16]**.
- Wide-ranging initiatives to shape the health domain **[B4-A18]**.
- Evolving health issues requiring priority attention **[B4-A19]**.

8. Establishing a Resource Flow Analysis Unit

"Resource flow analysis can yield critical information for resource allocation in the Ministry of Health for subsequent years."

Resource flow analysis is one of the essential activities of the Ministry of Health. The budget allocated to the Ministry of Health is huge. Naturally, there will be waste, inappropriate allocation, and inappropriate use. Monitoring these aspects is of crucial importance. The functions of the resource flow analysis unit are that it will assess the **appropriateness of the budget** allocated to it in terms of the following aspects: i.e. (a) technical viewpoint; (b) ethical standpoint; (c) availability of human resource perspective; (d) conforming to budgetary rules and regulations; (e) socioeconomic implications; (f) political implications; (g) in the context of national health policy, national health research policy, and overall national health strategy perspectives; (h) existing trend of budget utilization; (i) morbidity and mortality trend of an entity, if applicable; (j) availability of technology and strategy to tackle the condition or situation;

(l) social and cultural consequences; (m) the gravity of the situation of the entity under consideration; (n) long term implications if a particular condition is not managed properly, etc. **The budget should be allocated taking into account all these variables.**

Generally, there are **budgetary and financial units** in the ministry. But they are generally reviewing the budget allocation and utilization pattern from a financial and existing budgetary and financial rules and regulations perspective. They are not considering the above-mentioned **fifteen variables**. If we can review and assess the appropriateness of the **budget allocation and utilization pattern** using these variables, we can have the most desirable budget allocation and probably efficient utilization of budget in the Ministry of Health.

One example noted in Myanmar is that there are several research divisions in the Department of Medical Research. The resources (human resources, funding, etc.) allocated and received by these divisions are unequal. By **conducting resource flow analysis**, we will know the exact allocation and utilization of resources as well as the reasons for the unequal allocation of resources. If the reasons are not rational, appropriate adjustments can be made. **Similar scenarios** can be found among various health programs in the Ministry of Health.

In order to do so, a resource flow analysis unit should be run by **professionals with the expertise to tackle the above-mentioned fifteen variables.** The likely professionals that can be involved are public health experts, epidemiologists, clinicians, social scientists, health economists, health administrators, biostatisticians, research scientists, financial experts, members of parliament, public health ethicists, anthropologists, representatives from the hospital domain, representatives from local NGOs and community-based organizations, etc. Concerned health program managers can be invited as special invitees to attend meetings conducted by the resource flow analysis group. Representatives from UN agencies, bilateral and multilateral donors, and INGOs may also be invited as appropriate, especially when substantial financial contributions were made to health programs or sectors.

It is important that meeting minutes of the resource flow analysis group be **well recorded for future reference**. The members of the group should have no vested interest, and the decisions made should be fully unbiased. The members of the resource flow analysis group should sign the **"Disclosure Form and Declaration of Vested Interest."**

Resource allocation also depends on the absorption capacity of the resources allocated to a particular entity. If such a case is found in one particular project, which is also very important for the country, the resource flow analysis group should give technical suggestions to increase the **absorption capacity** rather than reducing the budget allocation for subsequent months or years. In other words, the resource flow analysis group is more than purely analyzing the resource allocation. This is the reason why

there are several technical disciplines in the group, as well as relevant health program managers joining the group as **special invitees**.

This group should oversee all the financial resources (government as well as from outside) allocated to the Ministry of Health. Depending on the work load, the group can also analyze resources received other than financial resources, e.g., human resources, buildings and infrastructure, transport vehicles, supplies and equipment, scholarship training programs, etc. The work of the group can be greatly facilitated if a **"National Health Account"** document is available. The findings of the group should be thoroughly reviewed by high-level officials of the Ministry of Health before being submitted to the health minister. The health minister can take action as appropriate.

Conclusion

A resource flow analysis unit is essential for the Ministry of Health. It should be established as soon as possible, and proper support should be given so that the unit can function fully. One of the additional duties of the resource flow analysis group is to conduct a series of **"Training Workshops on Resource Allocation"** for health staff regarding the most desirable approaches and methods for resource allocation to health programs in the Ministry of Health. The principles and rationale underpinning the most appropriate methods for resource allocation should be imparted. If we can appropriately allocate resources to health programs, the efficiency of the healthcare delivery system can be significantly increased.

Recommended Reading (B denotes book number, and A denotes article number.)

- Initiating rational budget allocation **[B3-A16].**

9. Planning for Efficient Management of Disasters

"The most crucial element for the successful management of a disaster is adequate disaster preparedness combined with synchronized zcoodination across the relevant ministries and stakeholders."

The healthcare delivery system has to be r**eady to deal with any catastrophic disaster** (natural or man-made) that may occur at any moment. Common disasters of large magnitude, such as damaging earthquakes, floods, droughts, tsunamis, tropical cyclones, hurricanes, wildfires, landslides, extensive urban fire outbreaks, pandemics, volcanic eruptions, toxic and hazardous chemical explosions, and large population displacement due to several reasons, can occur in the country. In any disaster, the livelihood of people and human life are affected. **Rapid industrialization and disaster go hand in** hand. Due to this, it is likely that the incidence of man-made and natural disasters will be on the rise. During these times, the negative impact of a disaster may be greater due to population congestion.

Every effort should be made to **ensure disaster preparedness**, both adequately and effectively. The preparedness work is really **cost-effective** and can save hundreds, if not thousands, of lives. The social and psychological behavior disturbances and disruptions are immense, and the **aftereffects on the communities will last for many years.** The public health effects of disasters such as:

1. Nutritional deficiencies due to **countrywide food shortages;**
2. **Outbreaks** of infectious diseases;
3. Flare-ups of noninfectious diseases due to the nonavailability of medicines for chronic diseases;
4. An increase in **suicide and homicide** rates due to alcoholism and social and psychological disturbances;
5. **Disruptions of hospital services**, leading to many long-term untoward incidences;
6. **Sudden population displacement** resulting in many social, public health, and medical problems;
7. **Disruption of many medical and public health services**, leading to many untoward events; etc. These issues will not be discussed at length here.

Good planning and preparation should be done involving relevant ministries, the National Red Cross Society, medical, midwifery and nursing associations, large NGOs, relevant INGOs, pertinent UN organizations, and agencies in the country. As the major impact will be on health aspects, the Ministry of Health should serve as a focal entity to **coordinate the planning and preparation** (tabletop exercise **(TTX or TTE)**, simulation exercise, procurement of relevant supplies and equipment, hospital readiness, public health readiness, etc.) for various types of disasters. The management of disasters is an **extremely vast domain**, and some key points only from health perspectives are emphasized here. In fact, disasters are public health emergencies.

The following essential activities are envisaged. These can be considered disaster preparedness measures for successfully managing incoming disasters. Disaster preparedness is an ongoing activity, and it should be taken seriously.

1. Activate the **"National Disaster Prevention and Management Committee."** The committee should be headed by someone higher than the ministerial level. If necessary, revamp the committee in line with contemporary requirements and its terms of reference.
2. Review and update the **"National Disaster Management Policy and Strategy"** to reflect the contemporary and evolving scenario. Here, technical inputs could be solicited from WHO headquarters, the IFRC, and relevant ministries.
3. Necessary **budgetary provision** for disaster prevention, preparedness, management, and rehabilitation should be made available in relevant ministries' budgets. We should also ensure that a sufficient amount of medicine, food, water, and other emergency essentials are made available in time.
4. Conduct **"National Disaster Prevention, Preparedness, Management, and Rehabilitation Committee"** meetings annually to review the evolving scenarios and available reports of disaster management done during the last year. These meetings are crucial for our readiness to manage future disasters effectively.
5. Disaster prevention activities should be initiated on a **continuous basis**, involving all the stakeholders. This is very important. The activities should be reviewed and evaluated unbiasedly. Good disaster prevention activities can save millions of dollars for the country.
6. The necessary **standard operating procedures and guidelines** for prevention, preparedness, and management of specific disasters should be developed and updated by the concerned professionals from relevant ministries. It should be **widely distributed** to community-based organizations and also posted on the **websites** of relevant entities. These standard operating procedures and guidelines need to be updated regularly.
7. As **post-disaster rehabilitation activities**, including social and psychological perspectives, are equally important, they should be reviewed and discussed in detail and appropriate action taken by concerned entities. The post-disaster rehabilitation activities may be different from one disaster to another.

8. The specific role to be played by **community-based organizations and Red Cross personnel** in disaster management should be clearly spelt out. The morbidity and mortality rates of disaster-stricken populations can be drastically reduced if community-based organizations and Red Cross personnel play proactive roles in disaster management.
9. **Synchronized coordination** of activities in managing a disaster is of paramount importance. Every effort should, therefore, be exercised to achieve this end. If synchronized coordination is not practiced, there will be many finger-pointing episodes, which is not good for successful disaster management.
10. Undivided attention should be given to conducting **tabletop exercises and simulation exercises** for various types of disasters. Detailed planning for conducting these exercises is essential.
11. **Disaster-resilient hospitals and hospital readiness** to treat injured people are extremely important. Special and undivided attention should be given to this aspect. Planning for a make-shift hospital could also be considered if the number of injured people is excessively high. Hospital readiness to manage injured people effectively is the first priority of the Ministry of Health.
12. **National workshops for healthcare preparedness**, healthcare readiness, hospital utilities management, hospital supply chain management, and overall hospital readiness for disasters should be conducted to effectively take care of injured persons. The outcomes and recommendations of these workshops should be strictly followed up and implemented. Hospital readiness should also focus on the timely availability of orthopedic surgeons, neurosurgeons, burn treatment specialists, emergency medicine physicians, and emergency care nurses, among others. **Training on triage mechanisms** and the availability of **efficient ambulance systems** for transporting injured people from disaster sites to different hospitals should also be improved. The wide availability of **cardiopulmonary resuscitation (CPR)** and first aid training courses for Red Cross workers and nursing staff should be ensured.
13. A national workshop for **"Disaster Prevention, Public Health Emergency Preparedness, and Readiness for Various Types of Disasters from a Public Health Perspective"** should be held. The proper selection of participants for the workshop is crucial. The outcome and recommendations of the workshop should be strictly followed up and implemented.
14. Establish **a regular line of communication** with the **International Federation of Red Cross (IFRC)** and Red Crescent Societies for possibly getting funds through IFRC emergency appeals **(Disaster Response Emergency Fund, DREF)**. **Update the IFRC** network country plan as well.
15. As soon as the disaster strikes, communicate with the respective WHO Regional Office to get funding support. In the WHO South-East Asia Regional Office, there is the **"WHO South-East Asia Regional Health Emergency Fund—SEARHEF."** The fund is made available within the first 24 hours for life-saving interventions.

16. A **post-disaster review** should be done without fail. It will clearly elicit the effectiveness, efficiency, strengths, and weaknesses of managing the disaster. Several heavily paid lessons can be learned that could be used to improve future disaster management. We need to treat this post-disaster review with the utmost importance. It can have an enormously beneficial effect on the management of future disasters in the country.

Each of the above **16 entities** has numerous sub-activities, and these should be **handled carefully and shrewdly.** The **16 entities** are just the tip of the iceberg. We need to take advantage of each disaster in terms of fine-tuning the management of future disasters. Our main aim is to reduce the morbidity and mortality of people to the bare minimum.

Professionals from different disciplines should be actively involved in disaster management, depending on the type of disaster. The professionals commonly involved are public health experts, epidemiologists, clinicians, nurses, sociologists, psychologists, supply chain management specialists, health administrators, engineers, climatologists, oceanographers, geologists, red cross personnel, firefighters, paramedics, various types of volunteers, police and army personnel, communication specialists or public information officers, etc. It is important to note that there will be several viewpoints of different natures on the disaster from these professionals with different backgrounds. Meticulous attention should be paid so that there will be **no conflict of ideas** in identifying and carrying out disaster management activities.

Conclusion

In fact, **disaster prevention, preparedness, and management can be considered an art.** Many unexpected events and unfavorable episodes can happen in every disaster. To tackle these events and episodes, excellent epidemiological thinking skills are required, involving many professionals from different disciplines. There is **no one-man show or one-ministry show** in disaster prevention, disaster preparedness, disaster management, or the handling of post-disaster situations. All stakeholders need to **actively collaborate and exercise synchronized coordination** in their activities. Reliable information sharing among the stakeholders and timely information dissemination to the disaster-stricken population are crucial.

There will always be unforeseen disasters. To effectively handle disasters, we must be well-prepared. Disasters are **invariably accompanied by chaos and confusion**. It could be overcome if we practice synchronized coordination among the stakeholders as well as with the disaster-stricken population.

Recommended Readings

- World Disasters Report 2022 Trust, equity, and local action Lessons from the COVID-19 pandemic to avert the next global crisis, IFRC. [A good overview.]
- The Public Health Consequences of Disasters, edited by Eric K. Noji, Oxford University Press, 1997 [A must-read book.]
- Information bulletins and papers on the websites of the WHO, US CDC, FEMA, IFRC, etc. [Very informative.]
- The WHO Disaster Management Guidelines: Emergency Surgical Care in Disaster Situations A comprehensive manual that details the management of common injuries encountered in disaster situations
- Emergency Preparedness and Response, Centers for Disease Control and Prevention, CDC, Atlanta, USA
- Disaster Risk Management for Health and Mass Casualty Management by the WHO, United Kingdom Health Protection, and partners. [Very informative.]

10. Strengthening Collaboration with the Partners

"Public health endeavors cannot be one-man show, one department show, one organization show, or one agency show. The ultimate positive impact is the collaborative work of all the entities involved in an endeavor."

The word **"entities"** refers to like-minded and relevant ministries and departments, UN agencies and organizations, bilateral and multilateral agencies and organizations, donor agencies, INGOs, NGOs, associations, and community-based organizations. **Working collaboratively with external entities** is one of the desirable intentions of the Ministry of Health. This intention should be fulfilled as much as possible by using strategic and practical approaches. It will reinforce the work of each entity involved in their public health endeavors. The weaknesses of one entity can be **counterbalanced**

by another collaborating entity. The progress of the collaborative output or outcome of an endeavor can be geometric rather than arithmetic. In other words, one plus one can become four. It can tremendously benefit the targeted population.

While the Ministry of Health is working collaboratively with other entities, it is important to **follow certain principles.** These are mutual respect, mutual understanding, a spirit of cooperation, a compromising attitude, noting and appreciating the mission and vision statements of the collaborating partners, balanced thinking, equality, openness, work ethics, etc. Collaboration can be done using various approaches. While the collaboration among the partners is progressing, it would be beneficial to conduct implementation research to find out the best *modus operandi* for collaboration.

It is also important to note that to have stable, steady, and strong collaboration with partners, the officials of the Ministry of Health have to be proactive rather than passive. The concerned international health division of the Ministry of Health should take the lead in making it happen. To have effective collaboration, it is desirable to have **regular platforms** to discuss various public health issues for collaboration or even sorting out the bone of contention.

In Myanmar, there is one committee called the **"Myanmar Health Sector Coordination Committee – (M-HSCC)."** This committee is a **national coordinating body for all public health sector issues.** The committee members are senior officials of the Ministry of Health, representatives of UN agencies and organizations (WHO, UNFPA, UNAIDS, UNICEF, UNODC, WFP, IOM), members of parliament, donors (USAID, SWISS Development Cooperation, DFID, JICA, French Embassy, Sweden Embassy), international financing institutions (World Bank, Asia Development Bank), bilateral and multilateral agencies and organizations, INGOs (Marie Stopes International, Burnet Institute, World Vision International, Save the Children, FHI 360, International Rescue Committee, ICAP at Columbia University, HelpAge International, NGOs, etc. As this committee is chaired by the union minister, the decisions can be made right away. This committee is serving as **an effective platform** for discussing and coordinating various public health projects and activities carried out in the country. The collaborative work of the Ministry of Health has been greatly facilitated.

The responsible officials of the Ministry of Health should regard this collaboration with external entities as a matter of importance. Every effort should be made to make the process of collaboration smooth and functional. The **line of communication** with external entities should be enhanced so that external entities can easily and quickly communicate with the international health division of the Ministry of Health as well as with respective health program directors. This line of communication is one of the most important aspects of reinforcing the collaborative process.

Among the partners, we can get numerous technical and some funding support from the WHO. As WHO is the technical agency, we should take full advantage of it. The WHO has numerous technical units (country level, regional level, and headquarters level)

covering almost the whole spectrum of public health. **The beauty of WHO support** is that WHO works closely with the Ministry of Health and always develops a **biennial work plan** with funding support from the WHO. This biennial workplan for the country ensures accountability, responsibility, and oversight performance. This is a very desirable initiative.

With UNICEF, the United Nations Children's Fund, the Ministry of Health can collaborate in the areas of immunization, children and mothers' health, rights of children, protection of children in war, disasters, poverty and all forms of violence, adolescent development, early childhood development, gender equality, water, sanitation, and hygiene, nutrition, HIV/AIDS, social and behavioral change, etc. **With UNFPA** (United Nations Population Fund), the Ministry of Health can collaborate in the areas of sexual and reproductive health, family planning, preventable maternal death, gender-based violence, harmful practices, etc. Likewise, the Ministry of Health should work collaboratively with other relevant UN agencies.

Here, collaboration with various INGOs working in the country is extremely crucial. There are numerous INGOs working in every country. If we have a **collaborative road map**, there will be less duplication or redundancy of work. This could save a lot of funding for the collaborating partners. It would be very beneficial to have a **directory of all INGOs** officially working in the country. The directory will consist of each INGO's vision and mission statements, general and specific objectives, technical areas covered, major activities being implemented, geographical areas covered, human resources for health, etc. Collaborative work can be facilitated greatly if we have the directory. In addition, areas of collaboration can be mapped out, and specific collaborative work can be initiated quickly. There are **multiple benefits** if we have the directory. Likewise, the Ministry of Health should collaborate and work closely with USAID (now no more), JICA, AusAID, CIDA, SIDA, GIZ, DANIDA, JICA, KOICA, KOFPI, and several others working in the country.

Conclusion

There are numerous entities helping individual countries throughout the whole spectrum of the public health domain. We should be thankful to these entities. We should try to **get the most out of their support**. One of the most effective ways to harness their support is to closely collaborate with them based on the principles mentioned above. It is to be noted that the **budgetary and funding system, style of working, style of delivering services, and available human resources are different from one entity to another.** These facts should be taken into account when health program directors of the Ministry of Health collaborate with various entities.

The Ministry of Health had numerous collaborative public health projects working with several entities. It is, therefore, mandatory that an **"Internal Review and Technical Assessment Unit for Collaborative Projects"** be formed with specific terms of reference.

The members of the unit should be **technically proficient** public health professionals, epidemiologists, research scientists, social scientists, biostatisticians, health economists, health planners and administrators, public health ethicists, budget and finance experts, etc. Relevant health program directors can be coopted as temporary members. The reports of the unit should be regularly submitted to the health minister for guidance.

Recommended Readings (B denotes book number, and A denotes article number.)

- Strengthening international health coordination **[B1-Part A-A7].**
- Getting the most out of WHO support **[B1-Part A-A8].**
- Networking of health institutions **[B1-Part A-A19]**.
- Harnessing the contribution of NGOs **[B2-A15].**
- Collaborating with the WHO and external entities **[B3-A11].**

11. Reducing the Burden of Infectious Diseases

"Strong collaboration between the local population and health professionals is the key predictor for successfully reducing the incidence and early containment of infectious disease outbreaks or epidemics."

The **role of population and community-based organizations** is equally as important as that of health professionals in reducing the incidence and early containment of infectious disease outbreaks or epidemics. In that context, it is crucial that we strategize to find appropriate ways and means so that the representatives of the **population will be part and parcel of the health team** in carrying out various public health initiatives in the community. An additional crucial element is the population's health literacy level, which pertains to their understanding of fundamental infectious disease transmission dynamics or how infectious disease transmission occurs.

The network of community-based organizations needs to strengthen and streamline its operations in order to be more effective. Early information about the increasing number of infectious illness cases in the community should reach the Ministry of Health as early

as possible. It is only at that point that the Ministry of Health can start taking steps to stop infectious disease outbreaks in the neighborhood. These proactive measures are essential to averting full-blown outbreaks or epidemics.

Special attention should be paid to the following in order to prevent infectious diseases that can be prevented by immunization:

1. Obtaining the **necessary amount and type of vaccines** at the required time and location;
2. Establishing **a trustworthy cold chain system** from vaccine storage to the immunization site by having an effective health supply chain management system;
3. Administering the **appropriate vaccine dose and right timing** to the appropriate individuals;
4. Providing vaccinators with the necessary **training;**
5. Developing a **system for monitoring the effectiveness and efficacy of vaccines;**
6. Improving the system for observing **"Adverse Events Following Immunization;"**
7. Formulating **standard operating procedures and guidelines** for immunizations;
8. Giving short **health education talks** to the vaccinees at the sites of vaccination;
9. Establishing a **public information dissemination system** to increase vaccine coverage; etc.

A robust immunization program [B2-A9] can lessen the likelihood of a vaccine-preventable disease outbreak or epidemic. Immunizations can prevent the following diseases from occurring: Pertussis (Whooping Cough), Diphtheria, Tetanus (Lock Jaw), Measles, Rubella (German Measles), Mumps, Hemophilus Influenzae Type b (Hib) infections, Tuberculosis, Polio, Chickenpox (Varicella), Pneumococcal Infections, Hepatitis A, Hepatitis B, Japanese Encephalitis (JE), Meningococcal Meningitis, Rotavirus Disease, Respiratory Syncytial Virus (RSV) Infections, Typhoid Fever, Flu (Seasonal Influenza), Dengue, Shingles (Herpes Zoster), Yellow Fever, Cholera, Anthrax, COVID-19, and so on. Vaccine efficacy and effectiveness are different for different diseases.

The prevention of outbreaks and epidemics should be our top goal [**B2-A4] [B2-A5] [B3-A14]**. In light of this, accountable Ministry of Health officials should be aware that successful implementation of preventive, outbreak, or epidemic control operations requires **more than just technical expertise.** The community's involvement **[B4-A1]**, staff dedication, political will, and operational efficiency are all crucial factors in preventing and quickly containing outbreaks and epidemics.

Recent SARS-CoV-2 infections in nations all over the world have **exposed numerous critical gaps** in the pandemic's containment, as well as inadequate precautions against COVID-19 in nations where the virus was discovered later in the pandemic. Undoubtedly, the knowledge gained will be crucial in averting such pandemics. It is strongly advised at this time for **every nation to assess how COVID-19 was handled in its own nation. Every weak link** in the COVID-19 preventive and control chain needs to be strengthened and fixed. The policy and operational experience gained from the 2003 severe acute respiratory syndrome **(SARS)**, the 2012 Middle East respiratory disease **(MERS)**, and the 2013 **Ebola** outbreak in West and Central Africa must also be reviewed.

The preventive aspects and preparedness for outbreaks or epidemics should be a **continuous process** of proper planning, conducting simulation and table-top exercises, and the improvement of standard operating procedures and guidelines pertaining to preventive measures and control aspects for outbreaks or epidemics. When weighed against the expenses we would incur in the event of an outbreak or epidemic, these are incredibly economical. These are very cost-effective. Social, psychologic, school absenteeism, temporary workforce reduction, and economic consequences will be too much for the country if there is a big outbreak or epidemic.

For the benefit of health personnel, we ought to prepare a **reference manual or compendium** on preventive measures and control of infectious disease outbreaks or epidemics. It should also be updated as and when necessary **[B3-A7]**. One approach to strengthening the whole process of prevention and control of outbreaks or epidemics is to fulfil the requirements of the **International Health Regulations (IHR) (2005)**. However, many countries are still struggling to meet the basic requirements for compliance. Good compliance with **IHR (2005)** can help facilitate the preventive aspects of outbreaks and epidemics.

In line with the above-mentioned scenarios, we need to do the following: (not in order of priority, but preferably to be carried out simultaneously)

1. Initiate a series of activities to increase the **health literacy level of the population [B2-A2]** in terms of the transmission dynamics of infectious diseases and preventive aspects of infectious diseases. This task should be primarily taken care of by basic health service workers (health assistants, public health supervisors, public health nurses, midwives, etc.) who work at rural health centers and sub-rural health centers.
2. Improve the **system of information flow** among the networks of community-based organizations to the health professionals working at the ground level. This is a very crucial and important activity for the early detection of outbreaks or epidemics.
3. Enhance the **national immunization program coverage** while improving the cold chain system for vaccine storage and transport to reduce outbreaks or epidemics of vaccine-preventable infectious diseases.
4. Improve the **overall public health surveillance system,** including infectious disease surveillance and sentinel surveillance **[B2-A15] [B3-A26] [B4-A15]**. This is very desirable for the early detection of outbreaks or epidemics of infectious diseases.
5. Keep in touch with the WHO's early warning and response system **(EWARS)**, established jointly in 2006 by the World Health Organization, the Food and Agriculture Organization, and the World Organization for Animal Health. If we can develop **a miniature version** for each country, we can at least forecast, prevent, and control outbreaks or epidemics in the country.
6. Initiate measures to reduce the **incidence of zoonotic diseases**. These measures should be practical and realistic. A technical team should be formed to outline possible preventive activities for reducing the incidence of zoonotic diseases.
7. Conduct training workshops **[B1-A21] [B3-A8] [B4-A21]** for different categories of

health staff on various preventive measures and early containment of outbreaks or epidemics. The staff must be well prepared to deal with scenarios leading to outbreaks or epidemics.

8. **"Rapid Response Teams"** for outbreaks or epidemic management should be formed. The senior and experienced team members should conduct the above training workshops.
9. Existing **standard operating procedures and guidelines** for managing outbreaks or epidemics should be updated and put on the relevant websites of the Ministry of Health. Regular updates should be made as necessary. **[B3-A7]**.
10. As much as possible, **implementation research [B3-A15]** should be carried out while we are preventing and controlling outbreaks or epidemics. The research findings should be used to improve preventive approaches and the containment of outbreaks or epidemics.
11. **A central outbreak or epidemic control team** should be composed of epidemiologists, public health professionals, laboratory personnel or technicians, health information officers (communication specialists), veterinarians, entomologists, research scientists, concerned health program directors, health assistants, public health supervisors, public health nurses, midwives from the outbreaks or epidemic areas, etc. The number of outbreak or epidemic control teams to be formed depends on the size of the outbreak or epidemic.
12. For large and widespread outbreaks or epidemics, **a central coordination team** should be formed to streamline the system of communications and outbreak or epidemic control measures.

After the outbreak or epidemic is controlled, **a thorough evaluation** should be made to elicit the strengths and weaknesses of the outbreak or epidemic control measures being taken. The findings should be used for future control of outbreaks or epidemics. All control measures being taken should be properly recorded and used as **teaching materials for training workshops** for infectious disease control.

Conclusion

Each outbreak or epidemic is different from one another in several aspects. We should note down all these characteristics. Thus, the role of epidemiologists and public health professionals is crucial. Outbreaks or epidemic control can be considered **a learning process for health professionals.** Many new epidemiologic ideas, administrative, management, and logistics issues can also evolve. These facts can be taken into account in the future prevention and control of outbreaks or epidemics. Whatever the case may be, we should not forget that **the role of the population [B2-A10]** in outbreaks or epidemics is *sine qua non*. We should think of the factors facilitating the proactive involvement of the population. Generally, there is a bit of confusion or chaos in managing big outbreaks or epidemics. It can be overcome if we have **a well-coordinated central coordination team for outbreaks or epidemics.**

12. Safeguarding our Own Health

"The ideal mantra we should live by today is "Exercise is Medicine." The amount of regular exercise we are currently doing and thewholesomeness and healthfulness of the food and drinks we are currently taking are closely correlated with how healthy we will be when we get older."

If we look at the morbidity and mortality of diseases and conditions in the population, disease-causing organisms (viruses, bacteria, protozoa, fungi, etc.), unwanted items, and hazardous materials can enter or attack the human body through **various portals of entry**, such as the **mouth, nose, skin, eyes, mucous membranes, ears, blood vessels, and sexual organs, including the anal canal**. It is only through these portals of entry that organisms and unwanted things enter our bodies, resulting in various diseases, either immediately or after some time.

The **mouth** is the primary point of entry for food products (as well as counterfeit and subpar medications), whereas the **nose** is the second point of access for pollutants and pathogens that cause respiratory diseases. We have to make sure that nothing untoward will happen through these portals of entry. The health literacy level of the population greatly controls this route for less disease transmission and spread. One of the major strategies to attain good health is, therefore, increasing the health literacy level of all of us. **[B2-A21].**

Therefore, the **health status of all of us** mainly depends on the following:

1. The **quality, amount, type, cleanliness, freshness, and wholesomeness of the food** that we are eating are linked to liver diseases, kidney diseases, cardiovascular diseases, gastro-intestinal diseases, diabetes,malignancies, and so on. Adulterated foods, industrial dye-tainted foods, and preservatives used in food play an important role in making us unhealthy in the long run.
2. The medicines that we are taking through our mouth and blood vessels are linked to many untoward conditions. This is due to their side effects, overdosage, or taking **fake or spurious medicines.**
3. The **quality of the water** that we are drinking is linked to gastrointestinal diseases, blood diseases, kidney diseases, and so on.

4. Consumption of **dangerous liquids and alcoholic beverages** has been linked to liver diseases, heart diseases, diabetes, and other complications.
5. The **quality of the air** that we breathe, as well as polluted air, tobacco smoke, or organisms that enter our lungs, is linked to malignancies, lung diseases, and so forth.
6. The **social activities** that we are engaged in are linked to sexually transmitted diseases, HIVAIDS, liver diseases, alcoholism, drug addiction, accidents, and so on.
7. **Unhealthy lifestyles** (promiscuity, alcoholism, drug addiction, etc.) are linked to a variety of diseases, accidents, and unfavorable conditions.
8. Our **daily activities** - **Activities of Daily Living (ADL)** - are associated with accidents, mental illnesses, and so on.
9. **Unprotected skin** has been linked to vector-borne diseases, cancers, and skin diseases, among other things.
10. Organisms entering our body through the **eyes and ears** are not very common, but we need to be careful.

If we are careful about these portals of entry, the chance of having a disease is slim, **except for autoimmune, congenital, hereditary, and other genetic diseases**. Mental illness and physical illness are also linked. Poor mental health is one of the risk factors for chronic physical conditions. These are issues that we need to pay attention to. Therefore, our preventive approaches should focus on these portals of entry and on psychological well-being. The **role of the FDA is crucial**. From a public health perspective, one of the most cost-effective actions is to promote the health literacy level of all of us. It will pay off in the long run.

We need to be health literate in terms of being clearly aware of the factors leading to poor health as well as the factors pulling us up to be healthy in life. Here, peer pressure and social factors are like gatekeepers for being healthy or unhealthy. One of the most beneficial actions in addition to the above is practicing the motto **"Exercise is Medicine."** This could result in multiple health benefits that can lead to a healthy adult life. Our **quality-adjusted life years** can be very prolonged. The concerned health education units or health literacy promotion units of the Ministry of Health should disseminate the above information to the population at large as widely as possible.

13. Promoting Public Health as a Spearhead Activity

"One of the most effective ways to enhance the general state of thepopulation's health is to promote public health initiatives. Successfully implementing public health initiatives depends on the availability of reliable, adaptable, robust, and responsive health information and public health surveillance systems. The ability to think from a futuristic perspective through the application of a beyond-the-box thinking approach will be an asset for promoting public health in the country. Implementing population health literacy promotion activities should be a major part of all public health initiatives."

There are several reasons for advancing the public health domain in the country. One of the major reasons is that it can significantly increase the positive health impact of the Ministry of Health in the country. Public health promotion initiatives need to be conducted nationwide if we really want to enhance the population's general state of health. In reality, if we want to raise the number of individuals who have more years of quality-adjusted life, **enhancing public health programs is the most effective and best strategy.** The entire health state of the population cannot be improved by the clinical domain alone. The benefits listed below would be attained if our public health-promoting initiatives were widespread and successful across the nation.

1. If we have **effective and efficient nationwide immunization program**s, the incidence and prevalence of vaccine-preventable diseases, such as childhood infectious diseases, will decrease.
2. If we have **effective environmental sanitation initiatives**, the incidence and prevalence of water-borne diseases and water-associated diseases will decrease.
3. If we have **good health literacy promotion programs and successful "Exercise is Medicine"** programs, the incidence and prevalence of communicable and noncommunicable diseases will be decreased by the population practicing healthy

lifestyles. With these two initiatives, we could accomplish several long-term improvements in our health and reap countless advantages.

4. If we have **effective communicable disease prevention, control, and surveillance programs**, the incidence and prevalence of communicable diseases, as well as epidemics of diseases, will be considerably decreased.
5. If we have **effective health-promoting school programs,** the incidence and prevalence of many infectious and non-infectious diseases will decrease. School children will also be practicing healthy lifestyles, leading to a hugely healthy population in the long run. Alcohol, cigarettes, and other addictive substances will be used less.
6. If we have **effective adolescent health promotion programs,** the incidence and prevalence of drug addiction, alcoholism, sexually transmitted diseases, etc. will be reduced.
7. If we have **effective maternal and child health programs**, the incidence and prevalence of childhood diseases, morbidity, and mortality among pregnant mothers will be reduced.
8. If we have **effective HIV/AIDS, TB, and vector-borne disease prevention and control programs**, the incidence and prevalence of these diseases will be reduced.
9. If we have **effective occupational health promotion programs**, there will be fewer occupational diseases in factories, hospitals, and offices.

If we have **effective public health programs**, as described above, the hospital admission rates and outpatient attendance rates in hospitals and health centers will greatly decrease. This could reduce stress for the medical staff working in hospitals and health facilities and also save a significant amount of money on the health budget. In principle, any public health initiative can significantly lower the incidence, prevalence, morbidity, and mortality of many diseases while also improving the conditions that are associated with those diseases.

Even though more hospitals might be needed, this is not the best way to improve the general health of the community. Therefore, we should all be concerned about having **successful and effective public health initiatives**. To develop successful public health initiatives across the nation, there are many prerequisites. A few examples of the prerequisites are as follows:

1. Effective **capacity-building workshops** or training programs for different categories of public health professionals;
2. Overall improvements in **public health training institutions and schools**;
3. Adherence of health staff to the **principles of public health ethics and medical ethics**;
4. Promoting the conduct of **implementation research** and adherence to the principles of research ethics;
5. Strengthening the **overall public health information system**, including monitoring and evaluation;

6. Collaboration and coordination of **public health initiatives** should be the order of the day;
7. Availability of a **good national health policy and national health plan**;
8. **A strong policymaker with experience in public health;**

Therefore, every effort must be made to strengthen the public health programs and public health infrastructure in the country as a first priority. This initiative should be accompanied by the capacity-building of health staff working in the public health domain. Improvements in the public health domain can complement improvements in the clinical domain. An effective strategy to involve the general public in public health initiatives must be put in place. Public health initiatives should feel like they belong to the people. The population should have a sense of ownership of public health initiatives. The most important takeaway message is that **"good public health programs are the only way we can improve the general health status of the population in the country."**

If we want to promote the public health domain in the country, we need to **nurture young public health practitioners** by all means. Senior public health professionals have an obligatory responsibility to mentor and train aspiring and eager public health practitioners. The trainees' positive attitude is the most crucial factor in achieving our objective of promoting public health in the country. This practical training ought to be a continuous process that is based on real-world health scenarios that occur over time. It is like a mentor-mentee relationship. When nurturing the novice public health practitioner, at least **three important things** should be told to them. These are:

1. When solving a particular public health problem, always consider the **viewpoints of the affected population**. This information could be obtained through community-based organizations.
2. The **basic principles of public health, principles of epidemiology, basic tenets of public health ethics, and medical ethics** should be at the back of the mind when analyzing a public health scenario.
3. If all the parties involved in public health work together, adhering to the principles of **mutual respect, mutual understanding, the spirit of compromise, medical ethics, and public health ethics**, there is no way that we cannot achieve the shared goal of enhancing the health status of the population. **[B3-Preface]**

The public health scenarios that we have been facing are different in terms of the causal determinants identified, challenges faced, degree of severity or consequences seen, long-term implications observed, population groups affected, actions to be taken, etc. In other words, **epidemiological situations are different from one scenario to another,** and we should know those differences vividly to tackle the scenario effectively. This aspect should be clearly made known to young public health practitioners so they can get proactively involved in public health initiatives. **[Thought process of a seasoned public health professional.] [B2].**

If we would like to promote the public health domain in the country, the following **generic activities** should be carried out by each health program director. These are: [not in order of priority]

1. Produce an **annual program report** that has a chapter on challenges and future directions;
2. Develop **a plan (Gantt chart)** for staff's capacity-building initiatives;
3. Construct **checklist-style assessment questions** and carry out program monitoring;
4. Establish **discussion forums** as necessary;
5. Review the **resolution**s adopted at the annually held World Health Assembly and WHO Regional Committee meetings and take the required actions;
6. Strengthen **connections with UN bodies** and pertinent health-related groups;
7. Strengthen **ties with relevant ministries, pertinent INGOs, and local NGOs** in the country;
8. Conduct **staff assessments** on a regular basis;
9. Review **program strategie**s and make necessary adjustments, if required;
10. Update regularly all the **SOPs and GLs** of the program;
11. Review the **recommendations** made at meetings of the WHO Technical Advisory Groups **(WHO TAG)**, WHO Scientific Working Groups **(WHO SWG)**, and WHO Expert Advisory Panels **(WHO EAP**), and take into account any information relevant to the respected national health programs;
12. Regular **interactions** with relevant WHO Collaborating Centers;
13. Give **close attention to** the recommendations made at the meetings of the WHO's program directors and managers on diverse topics;
14. Conduct **program evaluations** (internal and external) from time to time;
15. Do a **yearly program budget review** (allocation and utilization);
16. Consistently maintain **excellent communications** with pertinent UN agencies, organizations, INGOs, and organizations with similar goals;
17. Keep an eye out for significant **international gatherings and forums**; Always keep an eye out for UN General Assembly **(UNGA)** sessions on health-related topics like the world drug problem, HIV/AIDS, etc.;
18. Always be on the lookout for **reports of external evaluation missions, consultant assignment reports**, etc.
19. Be ready to work collaboratively with **like-minded program directors** or managers;
20. Maintain consistently **updated program websites** for the public and the health ministry's staff in particular;
21. Always do a **critical and unbiased review** of the findings of implementation research projects carried out on the program. **[B4-A4]**

We can promote public health if our health program directors have most of the characteristics listed below. These are listed randomly and not in order of importance.

1. The **ability to instill a sense of ownership** in his or her staff regarding the health program activities they are in charge of;
2. The **capability to streamline** the health program activities into something compact,

integrated, and responsive using clear-cut indicators and parameters;

3. **Research-minded** and the ability to incorporate built-in implementation research into the health program itself;
4. As needed, a **keen sense for conducting checklist-type monitoring and evaluation**;
5. Capable of setting up **regular discussion platforms** among the concerned staff;
6. Keen to conduct an **annual evaluation** of the health program involving all categories of staff;
7. **Receptive to listening to the voices of the staff and the populace** through various channels;
8. **Possessing epidemiological reasoning skills**, making rational inferences, and initiating feedback mechanisms from the staff;
9. The **ability to create a conducive work environment** in the program;
10. Eager to **provide social support** to the staff in need;
11. A **fact-finding approach** rather than a **fault-finding approach**;
12. Committed to leading and **conducting capacity-building initiatives**;
13. **Recognizing the value of information systems** and the reliability and validity of data;
14. **Capacity to collaborate effectively** with similar health programs. **[B4-A4]**

All in all, promoting public health is the duty of all of the health professionals working in the Ministry of Health.

Recommended Readings (B denotes book number, and A denotes article number.)

- Increasing the effectiveness of capacity-building activities **[B1-A21].**
- Health literacy promotion: A far-sighted strategy **[B2-A2].**
- Principles and steps for managing an epidemic/pandemic [B2-A4].
- Preparedness for future waves of COVID-19 **[B2-A5].**
- Supply chain management: The backbone of the health system **[B2-A7].**
- Expanded program on immunization: A priority focus of attention **[B2-A9]**.
- Role of the population vis-à-vis the health status of the country **[B2-A10].**
- Viewpoint: Disease Surveillance System **[B2-A18].**
- Updating the standard operating procedures and guidelines **[B3-A7].**
- Conducting capacity-building activities **[B3-A8].**
- Be prepared to tackle future pandemics **[B3-A14].**
- Conducting implementation research **[B3-A15].**
- Enhancing the effectiveness of disease surveillance systems **[B3-A26].**
- Promoting community participation **[B4-A1].**
- Strengthening public health surveillance systems **[B4-A15].**
- Using electronic communication tools in training programs [**B4-A21].**

14. Paying Close Attention to the Population's Point of View

"The viewpoints and opinions of the general public are like gold mines from which we can extract crucial notions, ideas, and concepts to enhance the general health of the population."

Health professionals generally tend to **ignore the viewpoints of the general population** residing in different parts of the country, including internally displaced persons, patients, parliamentarians, politicians, the prison population, factory workers, social scientists, and related disciplines beyond the health domain, etc. Their considered views on the services rendered by the Ministry of Health and the performance of the healthcare delivery system are **essential inputs** for formulating the national health policy, the national health research policy, the national health plan, and several major health strategies for the country. Public satisfaction in the whole health domain can be obtained. All the major strategies in the health domain should be adjusted depending on the ground reality and the changing epidemiological situations from various perspectives.

It is desirable to establish a so-called **People Health Assembly** in the country so that the populace can air their views regarding the health services given to them by the Ministry of Health. By conducting the assembly, the staff of the Ministry of Health will know the **ground reality**. This could actually force them to go into the fields to see what is actually happening at ground level. This can prompt them to change or modify their strategies and approaches in various health disciplines and initiatives. It may potentially result in **health policy changes** in the country. In fact, there are many inappropriate activities happening in the health institutions in urban and sub-urban parts of the country. All these need to be exposed, and improvements should be made as much as possible.

It is essential that professionals from various clinical disciplines and the public health domain be properly and thoroughly trained so that they possess **top-notch clinical and public health acumen**. This will greatly benefit the population at large. The perspectives of the population on the healthcare services they are receiving should be truly exposed and improved. In the long run, there will definitely be a reduction in the morbidity and mortality rates of various diseases in our country. It is proposed that the Ministry of

Health should strategize how to make it happen. A series of meetings, seminars, and forums may be held to develop **a practical road map** to achieve this end in the country. The benefit accrued to the population in the long run will be enormous. We are also going to have a large cohort of healthy people.

We have seen a lot of congestion of patients in the hospitals, both inpatients and outpatients. We also noted the long waiting time for elective surgery, chemotherapy for patients suffering from various forms of malignancy, etc. This could lead to several untoward implications, such as high nosocomial infection rates, a long duration of hospital stay, overstressed hospital staff, high hospital death rates, untoward interactions between patients and hospital staff, several patient safety issues, etc. It is proposed that the Ministry of Health do a quick study by conducting **key informant interviews and focus group discussions with the general population** as well as with the concerned hospital staff. We are also aware that these congestion issues are seen in several developing or resource-limited countries. Whatever the case may be, we would like to sincerely propose that the Ministry of Health do something to alleviate this issue of patient congestion in hospitals and health centers.

To put it candidly, the level of health literacy among the population is low. We are also aware that the occurrence of many diseases, both communicable and noncommunicable, is unnecessarily on the rise among the population because of low health literacy. It is strongly urged that the Ministry of Health give **full attention to increasing the level of health literacy** for strategic health issues among the population by applying various practical strategies and interventions. The population should be ready to collaborate with the staff of the Ministry of Health.

Active participation by community-based associations or organizations in health initiatives implemented across the nation by the Ministry of Health is vital. This represents an optimal method for **fostering a sense of community ownership** over national public health initiatives. It has the potential to raise people's health literacy levels, either directly or indirectly.

Health-promoting school activities conducted by the Ministry of Health should be thoroughly reviewed and improved by all means. It could have multiple health benefits for the population in the long run. We need to expose the health-promoting school activities from the **perspectives of the teachers and school-going children.**

The COVID-19 pandemic experience acquired by the population is another area that we should not ignore. Many perspectives from the population side should be put into the limelight. It might include facts that we health professionals have never thought of. The information obtained should be considered in doing preparatory work for the prevention and control of future pandemics. In that context, focus group discussions and key informant interviews with the community are seriously called for.

In addition to the previously mentioned exploratory methods, we can think about conducting focus group discussions and key informant interviews to learn more about **the public's perceptions** of the effectiveness of the healthcare delivery system.

Conclusion

The viewpoints and opinions given by the population on health matters should be **thoroughly analyzed by a group of professionals** composed of public health professionals, clinicians, epidemiologists, professionals working in hospitals and health institutions, social scientists, researchers, health administrators, and other relevant personnel in the health domain and beyond. The findings and recommendations made by this group should be taken into account in streamlining, **modifying, and improving** the existing rules and regulations, standard operating procedures and guidelines, strategies, national health plan, and even national health policy. It is also important to note that viewpoints and opinions given by the population residing in different parts of the country vary.

If we are not paying close attention to the viewpoints and opinions of our target population, we will be managing the problems using the wrong approaches or methods. It will be **a sheer waste of time and resources**. We will not reach our common objective of achieving a healthy population in the country. In fact, we need the combined efforts of the personnel responsible for rendering healthcare services and the population at large.

15. Reformulating National Health Policies in Developing Countries

"The overarching determinant that shapes the direction of healthcare delivery systems is national health policy. The country's national health policy will guide the development of its health plans and strategies. When necessary, policy reviews and analysis should be done involving all the stakeholders in the health domain."

Every developing nation has formulated national health policies based on the current state of human resources, health systems, political, economic, and social conditions, as well as population health. **The policy might be suitable and consistent with the situations at that time.** However, because of the rapidly evolving and changing epidemiological and health situations in the country, advancements in the field of medicine and public health, the findings of several scientific research endeavors, particularly in the domains of genetics, immunology, public health, socioeconomics, medicine, vaccines, pharmaceuticals, etc., changing and increasing demand from the population, and competing health needs of the population, there may be a need for reformulating the existing national health policy.

It is imperative that we review the current national health policy in the context of the **aforementioned parameters,** as well as the specific strategies of the Ministry of Health's various health programs and the resource allocation scenarios according to the national health budget. This could be done by conducting a national-level seminar on **"Reformulation of Health Policy."** It is to be noted that our intended national health goals and objectives may not be met by inappropriate, misfit, or weak national health policies, which could lead to wastage of resources. At the same time, the current health programs should also undergo **resource flow analysis.** The findings will be extremely helpful as we develop or reformulate a new national health policy. It could be followed by the development of national health strategies and plans.

We might not alter the national health policy and strategies if the country's health indicators are satisfactory and on the correct track, either increasing or decreasing. We might need to make a small modification only. **The national health plans and strategies that are now in place must be in line with the national health policy.** The appropriate distribution of resources among various health programs is crucial to the execution of the national health policy.

Practically speaking, **national health policy ought to be revisited roughly every ten years or so.** The reasons are that a number of health-related incidents, usual and unusual, are occurring more frequently.

These include, among others,: (i) a rise in the number of internally displaced people; (ii) alterations in the population's social and health practices; (iii) changing population structure or population pyramid; (iv) political upheavals; (v) emergence of new health initiatives; (vi) shifting patterns of disease occurrence; (vii) rising incidence of noncommunicable diseases; (viii) evolving and expanding roles of local and international nongovernmental organizations; (ix) new discoveries in the fields of medicine, vaccines, human genetics, immunology, and pharmaceuticals; (x) WHO and other UN health resolutions; (xi) changing trends in financial aid to health projects being implemented in developing countries; (xii) urgent national health security issues; (xiii) brain drain from both inside and outside the country; (xiv) challenges in political and governmental structures; [xv] occurrence of big epidemics or pandemics of novel diseases; (xvi) level of population health literacy; (xvii)

sophistication of computerized information and other systems in the health domain; (xviii) rapid development in communication information technology; (xix) increasing healthcare cost; (xx) evolving scenarios in artificial intelligence [AI]; etc.

It is also important to understand that **reformulating national health policy** is **not an easy undertaking.** Relevant personnel from several health-related ministries, professionals from health and health-related disciplines, health administrators, epidemiologists, public health specialists, health economists, biostatisticians, ethicists, health program directors, demographers, representatives from communities and community-based organizations, representatives from NGOs and INGOs, representatives from UN agencies, medical, nursing, public health, health-related associations and councils, social scientists, senior researchers and research managers, donors, and last but not least, political leaders should be involved in the reformulation process.

The Ministry of Health's senior staff should act as a secretariat. With distinct responsibilities, a number of task forces or technical groups could be established for smoothly carrying out the reformulation process. It is necessary to create a Gantt chart and outline specific logistical plans. **Enough budget should be set aside for the entire process**. A senior technical team or committee should be in place to supervise and **make decisions in the event of ambiguity or uncertainty.**

Using a set of criteria, we should also create a list of entities, illnesses, and conditions that should be given priority when health policy is reformulated. Both subjective (political, social, economic, ethical, etc.) and objective criteria (morbidity and mortality trends, disease rates, cost-benefit, cost-effectiveness of interventions, etc.) should be incorporated into the framework. It should not be developed in isolation.

One caveat is that **senior professionals should not impose dogmatic ideas and rigid notions** or give orders to the junior professionals in the discussion process. Critical and epidemiological thinking should be encouraged during several brainstorming sessions for not missing out on important components or elements in the national health policy.

The national health policy may consist of multiple elements. **Every element should have a justification for being at a particular priority level**. When developing the elements of the national health policy, ethical considerations should be taken into account. We frequently overlook the ethical dimension. The **national health research policy and the national health policy are complementary.** When creating the national health research policy, we should also take that into consideration.

Conclusion

Before we undertake the formulation of national health policy, full attention should be accorded to the process of formulating the policy. Accurate and sufficient data for the last four to five years should be collected beforehand. **Policy formulation based on unreliable data and information will lead nowhere and be doomed to fail**. Focus group discussions, key informant interviews, brief seminars, and short discussion forums should be held to obtain the necessary input for formulating the national health policy. We also need to work out the framework for national health policy monitoring as well. **The process of national health policy formulation is very fascinating and intriguing.**

We should aim that the newly formulated national health policy should be very clearcut, directional, encompassing, reflecting the overall health and country's scenarios, output- and outcome-oriented, and aligning with other relevant policies of the country. The principle of healthy public policy should be developed and practiced by other relevant ministries and entities. The process of reformulation should be followed by reviewing various existing health strategies and health plans. Necessary adjustments should be made to the existing health strategies and plans in order to achieve the goals of the national health policy. In essence, **the skeletal framework of the whole health system should be strong and well established in line with the national health policy.**

Recommended readings (B denotes book number, and A denotes article number.)

- Formulating or reformulating national health policy **[B4-A16]**
- Reviewing and revising the national health plan: a practical perspective **[B1-Part A-A14]**
- Epidemiologicavl methods for policy analysis **[B1-Part A-A18]**
- Research and health policy formulation **[B1-Part B-A5]**
- Formulation and reformulation of national health research policy and strategies **[B1-Part B-A6]**
- Promoting health policy research **[B1-Part B-A9]**
- Restructuring the Ministry of Health **[B2-A19]**

ANNEX 1.

List of 103 articles written by Dr. Myint Htwe

(B denotes book number, and A denotes article number.)

PUBLIC HEALTH (11)

1. Genuine power of public health **[B1-A1].**
2. Improving the domain of public health **[B1-A2].**
3. Tripartite collaboration for promoting public health **[B1-A3].**
4. Approaches to universal health coverage **[B1-A5].**
5. Rational decision-making in public health **[B1-A11]**.
6. Being a versatile public health professional **[B2-A1].**
7. Basic health service staff *vis-à-vis* Achieving UHC **[B2-A12].**
8. Strengthening the public health domain **[B3-A5].**
9. Inauguration speech delivered by Dr. Myint Htwe **[B3-Annex 2].**
10. Making public health associations functional **[B4-A13].**
11. Evolving health issues requiring priority attention **[B4-A19].**

POPULATION HEALTH (5)

1. Achieving a long-term dividend in population health **[B1-A4].**
2. Domino effect on population health **[B2-A6].**
3. Role of the population *vis-à-vis* the health status of the country **[B2-A10].**
4. Improving the health status of the population **[B2-A21].**
5. Promoting community participation **[B4-A1].**

HOSPITAL SYSTEMS (7)

1. Challenges in managing a hospital **[B2-A13].**
2. Reducing the number of patients in the hospital **[B3-A13].**
3. Minimizing the challenges observed in the hospital domain **[B3-A17].**
4. Stopgap measures to ease the challenges of the hospital system **[B3-A24].**
5. Improving patient satisfaction in hospitals **[B4-A2].**
6. Enhancing the clinical acumen of doctors **[B4-A6].**
7. Reducing the occupational hazards of health workers **[B4-A17].**

HEALTH SYSTEMS (11)

1. Are we ready for healthcare reform? **[B1-Part A-A6].**
2. Supply chain management: the backbone of the health system **[B2-A7].**
3. Can we improve the effectiveness and efficiency of the healthcare delivery system? **[B2-A8].**
4. Establishing a resilient national health supply chain management system **[B3-A10].**
5. Enhancing the effectiveness and efficiency of the healthcare delivery system **[B3-A6].**
6. Removing the demarcation line between the clinical domain and the public health domain **[B3-A12].**
7. Initiating rational budget allocation **[B3-A16].**
8. Key predictors for the good performance of healthcare delivery systems **[B4-A14].**
9. Strengthening public health surveillance systems [**B4-A15].**
10. Formulating or reformulating national health policy **[B4-A16].**
11. Wide-ranging initiatives to shape the health domain **[B4-A18].**

HEALTH PROGRAMS (11)

1. Basic characteristics of good health program development **[B1-Part A-A16].**
2. Eight basic probes before initiating a health program: "Drinking Water and Health" **[B1-Part A-A17].**
3. Health literacy promotion: a far-sighted strategy **[B2-A2].**
4. Expanded program on immunization: priority focus of attention **[B2-A9].**
5. Updating the standard operating procedures and guidelines **[B3-A7].**
6. Stopgap measures to increase the effectiveness of the public health programs **[B3-A25].**
7. Managing a health program with a suboptimal number of health staff **[B3-A29].**
8. Selecting a health program director **[B4-A4].**
9. Improving prison healthcare **[B4-A7].**
10. Streamlining the FDA's operations **[B4-A8].**
11. Running the IDP camp efficiently **[B4-A9].**

COMMUNICABLE AND NONCOMMUNICABLE DISEASES (8)

1. Enhancing the work efficiency of the director of communicable disease control **[B3-A27].**
2. Principles and steps for managing an epidemic/pandemic **[B2-A4].**
3. Preparedness for future waves of COVID-19 **[B2-A5].**
4. Viewpoint: Disease Surveillance System **[B2-A18].**
5. Be prepared to tackle future pandemics **[B3-A14].**
6. Enhancing the effectiveness of disease surveillance systems **[B3-A26].**
7. Enhancing the performance of the NCD director **[B4-A3].**
8. Addressing diabetes and cardiovascular diseases **[B4-A10].**

COLLABORATION (7)

1. Strengthening international health coordination **[B1-Part A-A7].**
2. Getting the most out of WHO support **[B1-Part A-A8].**
3. Networking of health institutions **[B1-Part A-A19].**
4. Harnessing the contribution of NGOs **[B2-A15].**
5. Promoting tripartite collaboration **[B3-A3].**
6. Collaborating with the WHO and external entities **[B3-A11].**
7. Intensifying collaboration among ministries: road traffic accidents *vis-à-vis* the cost to the Ministry of Health **[B3-A22].**

HEALTH INFORMATION (6)

1. Quick assessment of the health information system [**B1-Part A-A12].**
2. Transforming data into information **[B1-Part A-A20].**
3. Strengthening the health research information system **[B1-Part B-A4].**
4. Consolidating the health information systems **[B3-A8].**
5. Expanding the use of computerized systems **[B3-A21].**
6. Effective utilization of hospital data [**B4-A12].**

HUMAN RESOURCES FOR HEALTH (13)

1. General practitioners: A strong workforce for promoting public health **[B1-Part A-A9].**
2. Message to MPH students and junior public health professionals **[B1-Part A-A13].**
3. Role of the Myanmar Medical Association in "Human Resources for HealthDevelopment" **[B1-Part A-A16].**
4. Increasing the effectiveness of capacity-building activities **[B1-A21].**
5. Producing ethically minded and future-oriented health professionals **[B2-A3].**
6. Producing well-qualified MPH graduates **[B2-A11].**
7. Strengthening the nursing domain: an issue of critical importance **[B2-A14].**
8. Reinforcing human resources for health **[B3-A4].**
9. Conducting capacity-building activities **[B3-A8].**
10. Launching staff briefing programs for new employees **[B3-A18].**
11. Reinforcing nursing professionals **[B3-A19].**
12. Reinforcing paramedical professionals **[B3-A20].**
13. Using electronic communication tools in training programs [**B4-A21].**

METHODOLOGY (7)

1. Public health approaches and epidemiologic thinking **[B1-Part A-A10].**
2. Reviewing and revising the national health plan: a practical perspective **[B1-Part A-A14].**
3. Epidemiological methods for policy analysis **[B1-Part A-A18].**
4. Principles and generic approaches to tackle the strategic challenges **[B3-A1].**
5. Initial steps for consideration **[B3-A2].**
6. Decision-making in public health **[B3-A30].**
7. Establishing a checklist question repository **[B4-A20].**

BEYOND-THE-BOX THINKING (8)

1. Restructuring the Ministry of Health **[B2-A19].**
2. Ringing the bell for the Ministry of Health **[B2-A20].**
3. What if scenario "A" **[B2-A16].**
4. What if scenario "B" **[B2-A17].**
5. Senior officials of the Ministry of Health *vis-à-vi*s strategic challenges **[B3-A23].**
6. Thinking "outside-the-box" in the context of developing countries' healthscenarios **[B3-A28].**
7. Encouraging beyond-the-box thinking **[B4-A5].**
8. Enhancing the analytical skills of health professionals [**B4-A11].**

RESEARCH (9)

1. Characteristics of a good health research institution **[B1-Part B-A1].**
2. Strengthening health research institutions in support of public health **[B1-Part B-A2].**
3. Research institutions and national health development **[B1-Part B-A3].**
4. Research and health policy formulation **[B1-Part B-A5].**
5. Formulation and reformulation of national health research policy and strategies **[B1-Part B-A6].**
6. Promoting utilization of research findings **[B1-Part B-A7].**
7. Research prioritization **[B1-Part B-A8].**
8. Promoting health policy research **[B1-Part B-A9].**
9. Conducting implementation research **[B3-A15].**

ANNEX 2.

AUTHOR'S PROFILE

Dr. Myint Htwe
Union Minister for Health and Sports
(April 1, 2016 – January 31, 2021)

Dr. Myint Htwe, MBBS, DP & TM, MPH, and DrPH, took on the responsibilities of Union Minister for Health and Sports in the Union of Myanmar from April 1, 2016 to January 31, 2021. He earned his medical degree (MBBS) in 1973 and a diploma in preventive and tropical medicine (DP & TM) from the Institute of Medicine 1, Burma, in 1979. He also holds a master's degree in public health (MPH) from the Institute of Public Health, University of the Philippines Systems, in 1982, and in 1992 he received a doctorate in public health (DrPH) from the Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD, U.S.A. Prior to taking on the role of Union Minister for Health and Sports, he held a number of important positions, including those of Chair of the Preventive and Social Medicine Society of the Myanmar Medical Association and Chair of the Ethics Review Committee (Institutional Review Board) of the Department of Medical Research at the Ministry of Health. He also assumed responsibility for the development of health policy within the government of the Republic of the Union of Myanmar. He has served on the Myanmar Academy of Medical Sciences' Executive Committee. He also served as the Myanmar Liver Foundation's vice chair. Additionally, he received the renowned **"Distinguished Hopkins Alumnus for 2020"** honor from his alma mater.

Dr. Myint Htwe is a public health expert with years of experience working in the medical field. He has worked for the WHO Regional Office for South-east Asia, for more than 16 years and has held a variety of roles, including those of Regional Advisor (Research Policy and Cooperation), Regional Adviser (Evidence for Health Policy), Coordinator (Regional Director's Office and Liaison with WHO Country Offices), Chief of Internal Review and Technical Assessment, and Director of Programme Management, where he oversees and gives guidance on all the technical programs of the WHO Regional Office for South-east Asia.

Dr. Myint Htwe joined the WHO Regional Office for South-east Asia in August 1994 and worked there until September 2010. He worked in the Ministry of Health from 1976 to 1994 in various capacities, such as faculty member of the Department of Anatomy, the Department of Preventive and Social Medicine, Institute of Medicine I, Rangoon, epidemiologist and malariologist for the Vector-borne Disease Control Division, the Health Systems Research unit in charge, and the Chief of the International Health Division.

He gained extensive experience in international health while working as the Director of Programme Management for the WHO Regional Office for South-east Asia. This included coordinating and offering general technical guidance to health professionals of the WHO Regional Office for South-east Asia who worked in a variety of technical areas like communicable and noncommunicable disease control programs (vector-borne and zoonotic diseases, disease surveillance programs, etc.), family and community health services, expanded immunization programs, emergency and humanitarian assistance, epidemiological and outbreak control services, medical education, research policy, coordination and promotion, health information, health situation and trend assessment, human resources for health, and other areas such as health system strengthening and regional collaboration.