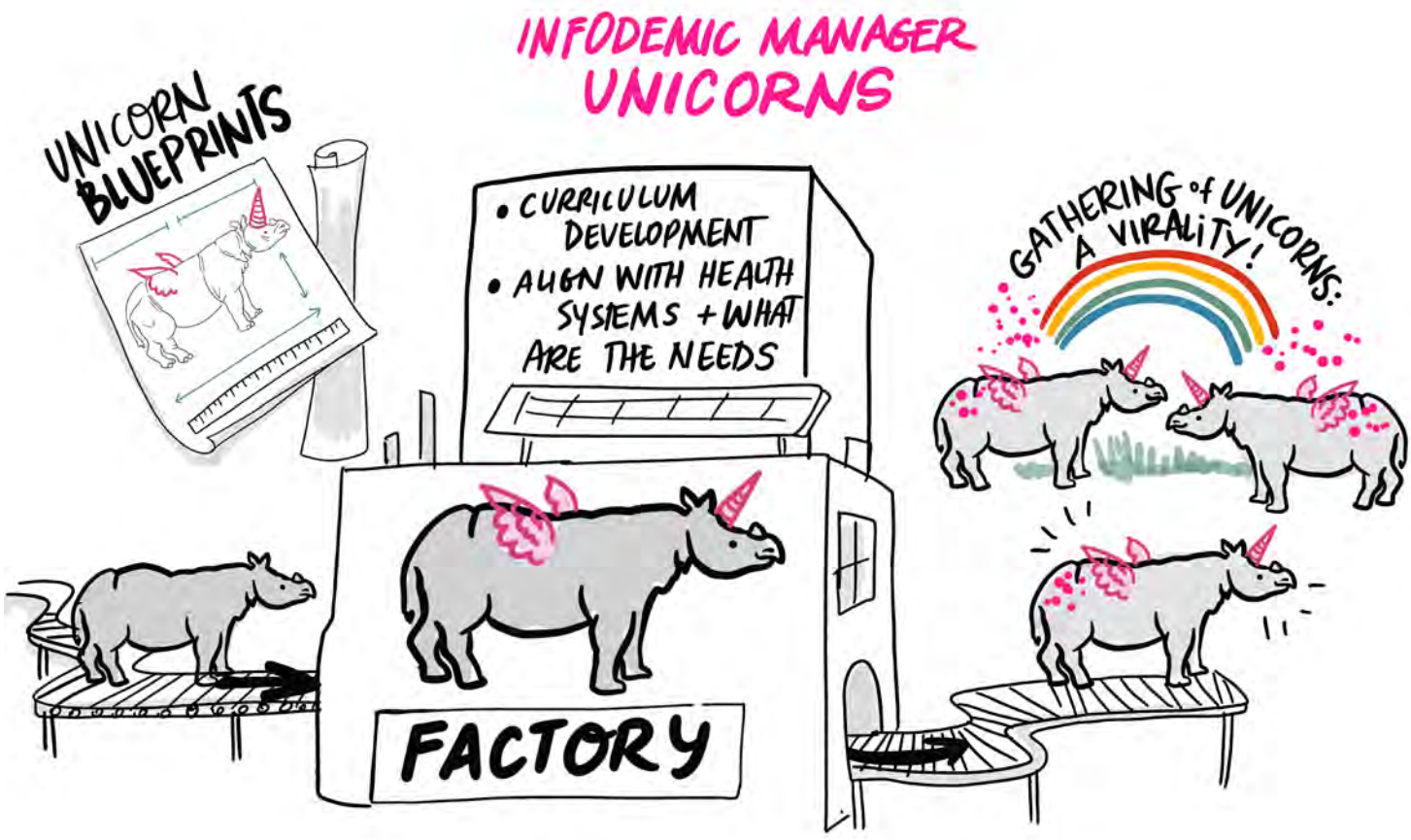
Mainstreaming infodemic management in learning and teaching programmes: a report from a WHO technical consultation

21–23 March 2023
Belgrade, Serbia



World Health Organization

Mainstreaming infodemic management in learning and teaching programmes: a report from a WHO technical consultation

21–23 March 2023
Belgrade, Serbia

Mainstreaming infodemic management in learning and teaching programmes: a report from a WHO technical consultation, 21–23 March 2023

Belgrade, Serbia

ISBN 978-92-4-008149-9 (electronic version)
ISBN 978-92-4-008150-5 (print version)

Suggested citation. Mainstreaming infodemic management in learning and teaching programmes: a report from a WHO technical consultation, 21–23 March 2023. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Photos by ©WHO/Damir Begovic.

Cover illustration by ©WHO/Sam Bradd.

Design and layout by ©WHO/Antonio Perez.

Contents

Acknowledgements

Mainstreaming infodemic management into learning and teaching programmes was the main outcome of the Sixth WHO Infodemic Management technical consultation, which took place from 21 to 23 March 2023.

The technical consultation was led by Tim Nguyen and Tina Purnat. Their work was directed by Sylvie Briand, Director of the WHO Department of Epidemic and Pandemic Preparedness and Prevention.

WHO is grateful to the Faculty of Medicine at the University of Belgrade for hosting the consultation, with special thanks to Lazar Davidović, Dean of School of Public Health, Faculty of Medicine, University of Belgrade, and his team Vesna Bjegović Mikanović, Stefan Mandic-Rajcevic, and Aleksandar Stevanovic.

WHO is grateful for the work and contributions of experts from all over the world who contributed to the technical consultation with lightning talks and discussions: Hanan Al Kadri, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia | Dilek Aslan, Haccettepe University, Türkiye | Isabella Ballalai, Brazilian Immunization Society, Brazil | Peter Benjamin, HealthEnabled, South Africa | Noel Brewer, University of North Carolina, USA | Ian Brooks, University of Illinois, USA | Lucie M Bucci, Canadian Public Health Association, Canada | Neville Calleja, Ministry for Health, Malta | Lucia Campos Pellanda, UCSPA, Brazil | Marcelo D'Agostino, WHO | Adam Dunn, University of Sydney, Australia | Isabella Guerra Uccelli, NYC Health Department, USA | Santi Indra Astuti, Islamic University of Bandung, Indonesia | Ashish Joshi, City University of New York, USA | Claire Jennings, TEPHINET, United States | Eftychia Kotronia, National Institute of Public Health, Poland | Stefan Mandic Rajcevic, University of Belgrade, Serbia | Filippo Menczer, Indiana University, USA | Elena Musi, University of Liverpool, UK | Robert Otok, ASPHER | Antonio Parrilla, Presidenza del Consiglio dei Ministri, Italy | Maddie Perlman-Gabel, NYC Health Department, USA | Elena Petelos, University of Crete, Greece | Laurent Petit, WHO Academy | Dimitri Prybylski, US CDC | Rafaela Rosário, University of Minho, Portugal | Elil Renganathan, Sunway University, Malaysia | Amy Rowland, Emory University, USA | Fabio Scano, WHO Country Office for Serbia |Theresa Senft, Macquarie University, Australia |Ravi Sreenath, WHO Europe | Irena Stanojevic, WHO Country Office for Serbia |Feili Tu Keefner, University of South Carolina, USA |Sander van der Linden, University of Cambridge, UK | Victoria Vivilaki, University of West Attica, Greece | Chris Voegeli, US CDC, USA |Claire Wardle, FirstDraft News, USA | Odette Wegwarth, Charité – Universitätsmedizin Berlin & Max Planck Institute for Human Development, Germany |Elisabeth Wilhelm, Brown University, USA.

Further important input in preparing for the technical consultation was provided generously by the working group supporting the preparation of the discussion documents for the meeting: Dilek Aslan, Haccettepe University, Türkiye | Vesna Bjegović Mikanović, University of Belgrade, Serbia | Neville Calleja, Ministry for Health, Malta | Adam Dunn, University of Sydney, Australia | Santi Indra Astuti, Islamic University of Bandung, Indonesia | Claire Jennings, TEPHINET, United States | Amber Lauff, TEPHINET, United States | Jamila Nabieva, Heidelberg Institute of Global Health, Germany | Janet Real Ramirez, Instituto Mexicano del Seguro Social, Mexico | Rafaela Rosário, University of Minho, Portugal | Aleksandar Stevanović, University of Belgrade, Serbia.

Abbreviations

ASPHER	Association of Schools of Public Health in the European Region
CC	Collaborating centre
COVID-19	Coronavirus disease
CPD	Continuing professional development
ECDC	European Centre for Disease Prevention and Control
FETPs	Field epidemiology training programmes
HCD	Human-centred design
IM	Infodemic management
RCCE	Risk communication and community engagement
RKI	Robert Koch Institute
TEPHINET	Training Programs in Epidemiology and Public Health Interventions Network
WHO	World Health Organization

Executive summary

This report summarizes major themes and outputs of the WHO Technical Consultation on Building a Global Curriculum for Infodemic Management held in Belgrade, Serbia, 21-23 March 2023 (Meeting programme in **Annex 1**). With the overall goal of consolidating and aligning global efforts to build the infodemic management preparedness capacities for the future, this global meeting was planned around its two objectives - reaching a consensus on the principles and approaches for mainstreaming infodemic management/infodemiology into existing learning and teaching programmes; and discussing the establishment of a network for education and training in the emerging public health practice of infodemic management and underlyingc science of infodemiology.

The two-day Technical Consultation on mainstreaming infodemic management into learning and teaching programmes, followed by a full-day workshop on immersive simulation design, convened a diverse group of academics from various disciplines, health authorities, field epidemiologists, professional associations, WHO experts and independent observers from across six WHO regions. Reflecting the multidisciplinarity of infodemiology and infodemic management, this diversity of expertise facilitated a comprehensive discussion of training current and future infodemic management workforce.

Meeting participants reached an understanding that there is an extensive practice of infodemic management which emerged in response to COVID-19 infodemic. The demand for infodemic management skills is likely to remain high, necessitating actions to prepare the health workforce for future infodemics, while bolstering the skills of the current workforce. To ensure that, emphasis should be made on mainstreaming infodemic management concepts within existing training programmes and priority job profiles.

Development of curricula for infodemic management should be adapted to various types of training programmes, while serving the needs of different job profiles and employing appropriate learning approaches. *Applied emergency and outbreak response worker training* focuses on the frontline public health experts that constitute the surge workforce during an outbreak or health emergency, and include profiles such as field epidemiology, emergency operations, crisis and emergency communications, and others. With an extensive list of priority profiles, *pre-service undergraduate or graduate training* covers a wide range of academic programme types and levels, and allows to integrate the infodemiology training at a certificate level. *Continuing professional development* and *in-service training* are effective ways to upskill the current health workforce; different in their scope and purpose, the two modalities of continuing education have different priority profiles for introducing infodemic management training.

Past three years have seen a rapid evolution of the infodemic manager community of practice which can be formalized as a Network for education and training in infodemic management. Network's priority areas of action can, among others, include establishing collaborations with WHO and WHO Academy, fostering cross-institutional cooperation and joint initiatives, and mapping and engaging with existing training networks for public health. The Consultation concluded by recapitulating a great interest in the group to establish a formal network, and invited participants to share further ideas and suggestions for formalizing the Network for education and training in infodemic management.

1. Introduction

1.1 Background and objectives

The COVID-19 pandemic was accompanied by an infodemic, an overwhelming amount of information including mis- and disinformation in digital and physical environments, that widely contributed to confusion about health guidance and impacted individuals' health behaviour and decisions in the critical phases of early pandemic response. In response to this challenge, in early 2020 the World Health Organization established infodemic management (IM) as a new concept and area of concentrated interventions to mitigate the consequences emitting from an evolving information ecosystem and how individuals and communities interact with it.

The global response to COVID-19 pandemic demonstrated that managing infodemics exceeds the conventional set of skills and responsibilities of health authorities tasked with health emergency management. Building on the knowledge of risk communication, community engagement, socio-behavioural science, informatics and data science, health promotion, and epidemiology, infodemic management requires skills in conducting analysis of diverse datasets, a sensitivity to public health priorities and health equity, intercultural competence and strong communication skills.

WHO together with several public health partners held four infodemic management trainings, including a specialized training focused on vaccine demand promotion. Over 1400 infodemic managers from all fields of public health from 142 countries have learned how to apply evidence-informed interventions based on latest operational research.

Concurrently, elements of infodemic management were included in capacity development programmes in a wide variety of contexts. Higher education institutions introduced infodemiology in teaching, research and academic discourse; professional and medical associations added infodemic management issues to their continuing education programs, and some field epidemiology training programs (FETPs) have changed competencies to include infodemiology.

In order to consolidate and align global efforts to build the infodemic management preparedness capacities for the future, WHO organized a Technical Consultation on Building a Global Curriculum for Infodemic Management held in Belgrade, Serbia, 21-23 March 2023.

Two key objectives of the consultation were to:

- reach a consensus on the principles and approaches for mainstreaming infodemic management/infodemiology into existing learning and teaching programmes;
- discuss the establishment of a network for education and training in infodemic management and infodemiology.

To ensure a structured discussion during the Consultation, prior to the meeting, participants received a draft document with (i) proposed recommendations on education and training in infodemic management, and (ii) initial ideas for the network. Input sessions, panel discussions and group work during the meeting aimed to elicit participants' feedback on the recommendations, principles and approaches proposed in the draft document.

2. Approach to development of principles for mainstreaming infodemic management into learning and teaching programmes

2.1 A high-level summary of meeting proceedings

The three-day Technical Consultation on Building a Global Curriculum for Infodemic Management (21-23 March 2023) was hosted by the Faculty of Medicine at the University of Belgrade and brought together 47 representatives of academia (62%), health authorities (19%), field epidemiology (9%), professional associations (2%), WHO experts (2%) and independent observers (2%) from 25 countries across all six WHO regions (List of participants and organizing team in **Annex 2**). The diverse mix of academics with training in various health, information and communication sciences, health authorities representing different levels of health systems, public health practitioners and professional associations reflected the complexity and multidisciplinary nature of infodemiology, and offered a wealth of expertise and experience as the foundation for the discussion around building a global infodemic management curriculum. Declarations of Interest were reviewed and addressed as per the WHO policy on declaration of interests for experts.

The meeting programme consisted of a two-day Consultation on mainstreaming infodemic management into learning and teaching programmes (21-22 March 2023) and a full-day workshop on immersive simulation design (23 March 2023).

The Consultation was delivered in an interactive manner, with plenary sessions followed by structured discussions, engaging Q&A sessions using the online polling platform Slido, discussions in rotating small groups and a self-paced brainstorming exercise using a printed poster and sticky notes. A clearly defined structure and expected outputs for each working session, multiple designated facilitators and a balance of input sessions and group work created a favourable environment for effective discussions.

Recognizing that teaching via simulation is a highly effective learning approach for future infodemic managers, on the third day of the consultation participants were invited to join the representatives of local health authorities in a simulation exercise on generating infodemic insights and recommendations for action. The final session of the workshop on deconstructing the elements of design and delivery of a simulation exercise allowed the participants to exchange first-hand experience in participatory teaching techniques and approaches.

> *“It is most encouraging to note that there is good consensus within the academic community on the need to mainstream, not only infodemic management, but also information literacy… Maybe eventually we reach a level of information literacy at population level which is high enough to require less engagement at professional training level.”*
>
> —Neville Calleja, University of Malta, Malta

2.2 Consultation on mainstreaming IM

The programme of the Consultation was structured around two major themes i:

- Mainstreaming infodemic management into learning and training programmes;
- Leveraging networks and collaborations to advance learning and training programmes.

To set the scene for the discussion, the Consultation started with the review of the COVID-19 infodemic management in practice from the experience of infodemic management teams across different levels

of the health system. In a plenary session, seven discussants from Indonesia, Malta, South Africa, Serbia and USA shared their experience of managing the COVID-19 infodemic, key lessons learned in the process, and practical considerations for building the future infodemic management workforce.

The extensive discussion of tested and potential approaches for *mainstreaming IM into existing learning and training programmes* built on the participants' experience of teaching infodemic management from two perspectives – delivery methods for IM training and learning approaches to teaching IM. Over two plenary sessions, eight experts from universities in Brazil, Netherlands, Portugal, Türkiye and USA, the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) comprising 77 Field Epidemiology Training Programs (FETPs) in over 100 countries, and the WHO Regional Office for Europe presented their approach for mainstreaming infodemic management concepts into curricula for the special profiles they train. Together, these experts provided a comprehensive summary of approaches and tools currently utilized for teaching various elements of infodemiology and infodemic management for different profiles of current and future health workforce.

In another plenary session, representatives of universities in Saudi Arabia and USA, WHO Academy, and Association of Schools of Public Health in the European Region (ASPHER) shared their insights and experiences in delivering training in cross-disciplinary collaboration, including different types of certifications.

For the discussion in small groups, participants were organized in five rotating groups to further elaborate on designing new or updating existing learning and training programmes. The findings and highlights for each topic were summarized in the plenary session, and largely contributed to Section "Meeting outcome: Mainstreaming infodemic management into existing programmes" of this report.

To maximize the benefits of the current IM community of practice for building future infodemic management workforce, participants deliberated the opportunities of *establishing a network for education and training in infodemiology*, as well as *leveraging existing networks and collaborations* to advance learning and training programmes. In two plenary sessions, five discussants from universities in Greece, Malaysia, Serbia, UK and USA, joined by representatives of WHO Academy and Poland's National Institute of Public Health, described how they leveraged networks and made connections across disciplines while incorporating IM training in their programmes, and brainstormed a proposed network for education and training in infodemiology, its objectives, priority areas and ways of collaboration. The discussion in small groups further looked at how the network could support the members, and how WHO can contribute to the network's success.

On the third day of the meeting, Consultation attendees and invited health professionals and academics from Serbia participated in a simulation exercise on generating infodemic insights and development of recommendations, followed by a workshop on deconstructing an immersive infodemic management simulation, as an example of an effective training modality for future infodemic managers.

Similar to the field training programmes for frontline public health workers, the immersive simulation exercise for infodemic managers builds on the idea that teaching technical skills is not sufficient. Interdisciplinary and highly complex in nature, infodemiology requires public health practitioners to *deal with pressure of rapid work in a changing environment*, *understand relevance of infodemic insights* that are developed in rapid way, and *present the recommendations* backed by evidence to a decision-maker, who is often a politician. These three skills are especially important during emergencies when time is short and narratives shift hourly, and can be taught in an IM simulation. The building blocks of a simulation exercise and key discussions of the workshop are detailed in **Annex 3.**

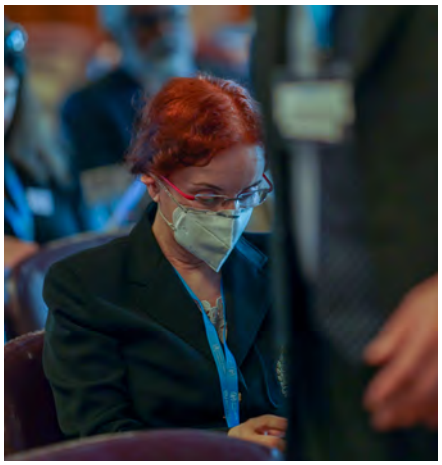
> *"Infodemiology and Infodemic management are new skills in the public health that will help us better respond to health threats in the future."*
>
> —Rafaela Rosário, University of Minho, Portugal


Feli TU-KEEFNER
Dilek ASLAN
Neville CALLEJA
CHAIR


Elena PETELOS


Claire JENNINGS


VILHELM
Neville CALLEJA
CHAIR



3. Meeting outcome: mainstreaming infodemic management into existing programmes

Over the course of the consultation, participants discussed into detail draft documents with recommendations *on* and key principles *of* education and training in infodemic management for health prepared by a working group prior to the meeting. The design of the meeting facilitated extensive discussions of topics that resulted in a summary overview of approaches and principles to mainstream IM into learning and training programmes.

Meeting participants reached an understanding that there is an extensive practice of infodemic management at different levels which emerged in response to COVID-19 infodemic. The demand for IM skills will likely persist after the COVID-19 pandemic, thus calling for actions to prepare the health workforce for future infodemics at different levels: strengthening the skills of the current workforce, while ensuring that the future workforce has the opportunity to study IM as part of their training. The diversity of participants' expertise allowed deepened, concentrated discussions of the draft document with recommended principles for teaching infodemiology and infodemic management, and generated rich insights on the approaches and processes that can be utilized for different types of programmes and professional profiles.

> *"Infodemic has brought us to the new challenges of misinformation. Evidence-based and data-driven decisions are an important part of infodemic management and they have supercharged our community engagement to a new level,"*
>
> —Santi Indra Astuti, MAFINDO, Indonesia

3.1 Key considerations

As the fundamental consideration, the experts agreed that at the early stages of infodemic management/infodemiology development, the main **focus should be on mainstreaming IM concepts (ie information ecosystem, health information equity, IM interventions) or training on specific IM skills within existing training programmes and job profiles as outlined below**, including domains, competencies, guidelines. To ensure faster translation of these skills into practice integrated within emergency preparedness and health system structures, the initial emphasis needs to be on health programmes and training of health professionals.

Curriculum development should reflect the mapping of skillsets and specific tasks identified by competency frameworks relevant to various professional profiles, as defined by individual health organizations and professional associations such as Association of Schools of Public Health in European Region.. The "*WHO competency framework: Building a response workforce to manage infodemics*"[1,2] designed to assist institutions in strengthening their infodemic management capacity by staff development and human resource planning is conceptualized around five workstreams for infodemic preparedness and response at a health authority. Structured around four domains, it identifies competencies to manage and monitor infodemics, to design, conduct and evaluate appropriate interventions, as well as to strengthen health systems; it further defines main activities, related tasks, and required knowledge and skills (Example ToRs and competencies breakdown in **Annex 4**). The competency framework is not a regulatory document or a training curriculum, but rather a reference tool to be used in accordance with local priorities and needs in various countries.

1 https://www.who.int/publications/i/item/9789240035287

2 https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-022-00733-0

The "*Core competencies in applied infectious disease epidemiology in Europe*"[3] report by the European Centre for Disease Prevention and Control (ECDC) defines the updated core competencies in applied infectious disease epidemiology for mid-career applied epidemiologists, including competencies on infodemic management. While the "*WHO-ASPHER Competency Framework for the Public Health Workforce*"[4] defines general competencies for public health practitioners without direct reference to infodemic management, it does emphasize a number of skills for effective science communication and evidence-informed decision-making in health emergencies.

Entry into infodemic management/infodemiology education and training varies across countries and disciplines, hence multiple pathways should be ensured for pre- and in-service trainings. Panel discussions established that following the infodemic that accompanied the COVID-19 pandemic apace, a wide range of seminars and courses on various aspects of infodemic management were offered to undergraduate and postgraduate students of medical and clinical sciences, health disciplines, information science, health communication and other related disciplines. While there are multiple ways to enter into IM training, it is critical to ensure that the training efforts do not only target future health workforce, but also upskill current health workforce, with on-the-job training, refresher courses and continuing professional development (CPD) among the most conventional approaches.

Concurrently, advocacy directed at audiences beyond traditional health workforce can further raise awareness about the infodemic and the need for building skills for infodemic management. To give an example, the Haceteppe University of Türkiye initiated a Task Force supported by the Turkish Medical Association to offer open lectures, scientific events, collaboration with media and public health practitioners to raise awareness about infodemic management. Similarly, the University of South Carolina held presentations about integrating the elements of IM training at various departments within and beyond the health sciences, e.g. public health, nursing, social work, education, data and communication.

Education and training of professional profiles based on practical case studies and situation-based problem-solving should be prioritized, with introduction of practical problem-solving and real-world challenges. While academic programmes already train on specific skills and theories that contribute to an infodemiological analysis and application, managing infodemics as part of health emergency response requires a multidisciplinary skillset that is best built in a competency-based, practical, immersive training.

Field Epidemiology Training Programmes (FETPs) have long served as an example of effective competency-based training. Building competencies for public health surveillance, outbreak investigation and scientific communication in the real-life environment, FETPs ensure a balance between the core and constantly emerging topics, to support field epidemiologists with a diversity of skills and tools they need to work in outbreak investigation and response, including news ones for infodemic management.

IM learning and training programmes should be in line with the WHO Academy learning and quality cycle and have clearly defined aims, learning outcomes, plans, content and evaluation criteria which would allow them to be mapped to the WHO academy curriculum and certification processes. WHO Academy offers three types of awards: (i) award of completion which is based on the evidence of engagement with learning experience and self-reflection; (ii) badge issued based on the demonstration of competence in a simulated setting; (iii) certificate that verifies the transfer of learning to practice and integration of multiple competencies and practice tasks.

IM learning and training programmes should be based on modularity and flexibility, and take a multidisciplinary approach; this would also facilitate application of these skills both to emergency response and to preparedness and prevention, as well as to other health topics that are affected by health and medical misinformation. Multi- and interdisciplinarity as a fundamental characteristic of infodemic management learning and training was extensively discussed over the course of two days. A small group discussion of how to take into account the interdisciplinary nature of infodemic management when designing learning and training programmes elicited a number of practical cosniderations:from practice-based research to transdisciplinary development; from employing different language for

3 https://www.ecdc.europa.eu/en/news-events/competencies-applied-epidemiologists-now-available-all-eueea-languages

4 https://apps.who.int/iris/handle/10665/347866

different audiences to providing a common language for infodemiology and IM; finally, from curricula with non-negotiable core competencies, supported by additional modules, to awareness raising activities about the multidisciplinary nature of infodemic management.

Learning and training programmes link graduates with the WHO infodemic manager community. An important component of maintaining skills and access to tools in a rapidly developing field of infodemic management practice is for trainees and graduates to keep an active participation in a global community of research and practice for infodemic management. Trained infodemic managers can seek advice, resources, and mutually support each other through their work placements and assignments, and support global, regional and national emergency response activations as needed by WHO and partners.

3.2 Curriculum by type of programme, priority profiles and learning approaches

Given that management of infodemics requires a multidisciplinary team with expertise in various subjects, learning and training curricula for enhancing competnecies in infodemic management and related skills in infodemiology need to be adapted to various **types of training programmes**, while serving the needs of **different job profiles** and employing **appropriate learning approaches**.

Applied emergency and outbreak response worker training

Considering that **applied emergency response** specialists constitute the surge workforce during an outbreak or health emergency, mainstreaming IM training into their existing learning experience needs to be prioritized. Depending on the country and programme, **priority profiles** are those involved in frontline response functions or patient care. Selected examples include field epidemiology, emergency operations, and crisis and emergency communications. Proposed **learning approaches** that may be more applicable to this specific type of programme include flipped classroom, short courses or summer schools, experiential learning and exchange/twinning, simulations, MOOC/e-learning, and field placement/rotation.

To cite the example of the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), its 77 Field Epidemiology Training Programmes delivered in over 100 countries focus on building competencies for public health surveillance, outbreak investigation and scientific communication, ensuring the balance between the core and constantly emerging topics. Infodemic management can be integrated into the FETP community by expanding on the competency areas in Scientific Communication and Public Health Surveillance within the existing curriculum, and supplemental modules that can be offered as elective modules.

Innovative learning approaches used by TEPHINET members can be applied to infodemic management curricula as well. Training the trainers through experiential teaching and learning can support the process of needs assessment and curriculum revision to integrate infodemic management, while promoting peer learning and exchange of experience. Learning from the feedback of previous training participants through surveys, workshops and assessment of course evaluations can be used to revise the IM curricula according to the changing needs of learners.

Undergraduate/graduate training (classes, modules and programmes)

Depending on the country, pre-service training may be at **undergraduate or graduate level**, and curricula in infodemic management/infodemiology should be integrated into programmes at the level certified to perform health or medical related job functions and apply these in practice. Examples of **job profiles** in this training programme category that should be prioritized for IM training include public health, nursing, pharmacists, dentistry, health promotion, health education, social and behaviour change, communication/community engagement, and library/information science.

Learning approaches befitting to undergraduate and graduate training programmes in infodemiology and infodemic management include short courses or summer schools, workshops and seminars, practicums, fellowships, tutorials, simulations, MOOC/e-learning, field placement/rotation, and problem-based case studies and learning scenarios. Delivery modes of training curricula for undergraduate and graduate learners are diverse, with full or part time studies, virtual/in-class/blended learning, synchronous/asynchronous learning and blended teaching among the most popular.

Representatives of academia shared that integrating the new IM courses into accredited structured degree

curricula was one of the early challenges which was partly addressed by offering the training as elective interdisciplinary courses. Another reason for the initial reluctance of higher education institutions to teach infodemic management as a separate course was the lack of clarity regarding the distinction between infodemic management and health communication. Currently, universities are increasingly introducing elements of infodemic management training as part of compulsory curriculum of undergraduate and postgraduate programmes.

Presently, while universities have access to reliable evidence and validated tools for teaching various aspects of infodemic management, further research on IM to produce additional evidence for teaching is among priority actions. Interdisciplinarity and engagement of public health practitioners are important features of the studies aimed to understanding infodemic and infodemic management.

Continuing professional development and in-service training

Upskilling the current public health experts with their practical experience and topical expertise is one of the effective approaches to building infodemic management workforce. Continuing professional development (CPD) and in-service training are two major learning modalities for current workforce, and offer ample opportunities for integrating infodemic management training components.

Continuing professional development is usually conducted at the individual level at broad scope to keep up to date with latest trends and guidance, increasing knowledge and competence. Continuing education may be driven by requirement of employer or need to maintain personal certification with a specific professional association or regulatory body and in-service training. Suggested **profiles to be prioritized** for IM training as part of their continuing professional development comprise medical doctors, nurses, dentists, allied health experts, health and medical librarians, health communication experts, health promotion specialists, health care managers, public health professionals, health informatics experts, pharmacists, and social workers. **Learning approaches** recommended as the most appropriate for CPD include, in addition to conventional training modalities, flipped classroom, short courses or summer schools, workshops and seminars, fellowships, and MOOC/e-learning.

In-service training, on the contrary, is narrow in scope, delivered in the workplace, and organized by the employer to refine and develop new skills and knowledge related to job performance. Curricula to introduce infodemiology and infodemic management as part of the in-service training should **prioritize** such **profiles** as medical doctors, nurses, emergency responders and community health workers. The practical nature of in-service training calls for immersive learning modalities such as flipped classroom, on-the-job work experience, experiential learning and exchange/twinning, and simulations.

Small group discussion about the practical guidance participants expect from WHO when designing new or updating existing educational and learning programmes for infodemic management elicited a number of areas of technical support. First, WHO's role in fostering community of practice by bringing experts together was unanimously highlighted. Second, WHO's technical support and guidance in developing IM quality assurance and training standards was reported to be of eminence. Some experts noted that offering collaborative incentives for mainstreaming infodemic management into training and learning programmes could contribute to interest *in* and commitment *to* the growing discipline of infodemiology. Further, technical guidance for bridging the gap between research and practice of infodemic management by adapting appropriate knowledge translation approaches and tools would stimulate a wider recognition of infodemiology as a discipline and practice. Finally, formalizing the Network for IM/infodemiology and supporting its operation in the initial phase could accelerate the benefits of establishing the community of practice for infodemiology.

3.3 Certification

Mainstreaming infodemic management/ infodemiology into certification programmes can support learners in demonstrating pertinent knowledge and skills they acquired in the learning and training programme. It is therefore critical to consider creating or using different types of certifications that may be applicable for the design and delivery of relevant skills for a certain job profile. Certification of IM training would accelerate the professionalization of the unique skillsets infodemic managers acquire in training, and increase their visibility in the workforce. Organizations and institutions interested in offering joint IM training programmes or mutually recognize certification should clearly outline criteria for learners obtaining different types of certificates.

WHO Academy broadly outlines three types of certifications: award of completion, badges and certificates. An **award of completion** requires metacognitive activity, engagement with learning experience and self-reflection, and implies self-efficacy in learning. This type of microcredential is obtained through shorter, more narrowly focused education or training, which can be useful for rapid upskilling. A **badge** demonstrates competence in a simulated setting, observation through simulation, engagement in exercises and activities, and social learning. Receiving a badge implies competence - action in context. A **certificate** ascertains a transfer of learning into practice, involves direct observation in practice, authentic experience and supervised practice, and implies proficiency/mastery - integration of several competencies in practice. Certificates are issued in more comprehensive training programmes that aim to synthesize connections between different skillsets, and train on higher-level technical and interpersonal skills needed to manage infodemics.

Plenary discussion elicited that most of the training and education institutions represented in the Consultation use various forms of micro-credentials, badges and other recognitions of achievement that vary across levels and types of training programmes, as well as countries and regions. Experts reached a common understanding that IM curricula offering any type of certification should meet basic quality standards, and have clearly defined learning objectives; a description of the target audience; content tailored to the needs and scope of the profiles they train; a delivery platform that assures objective and quality procedures, and evaluation criteria.

International professional organizations that already have certification programmes can support mainstreaming infodemic management skillsets by mutually recognizing certificates of other professional organizations. In health care, many practitioners may be members of multiple professional organizations, and this skillset may be applicable to several organizations and they may be accessing infodemic management/ infodemiology training through various channels.

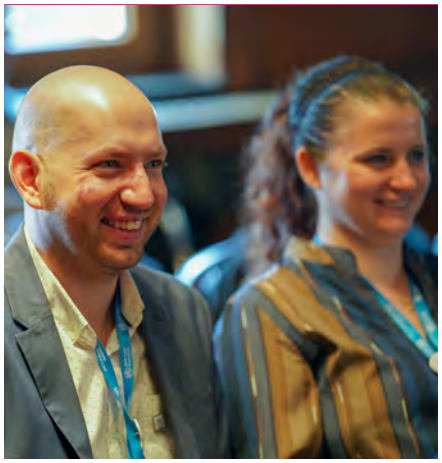
A number of further ideas and suggestions emerged in the discussion:

- Establishing the “Infodemic management friendly” badge for universities; WHO Secretariat could provide technical support to develop standards and criteria universities need to meet to receive and retain the badge.
- Considering partnerships not only with academic institutions, as it would allow to cover non-public health experts involved in public health practice, e.g. natural disasters, with infodemic management training.
- Using the European Public Health Week (planned for 22-26 May 2023) to advocate the infodemic management.
- Announcing the Infodemic Management Day; potentially on the day the UN Secretariat announced the infodemic as a public health threat.
- Hosting a hackathon for IM to sensitize the high school students about infodemics.
- Using the regional events for field epidemiology to highlight the significance of infodemic management.


Verica JOVANOVIĆ


Jelena IANKOVIC


Tim NGUYEN



4. Next steps: network for education and training in infodemic management

Meeting participants and organizers reached a common understanding that there is a strong interest in the group to establish a formal network, and that the next step for the WHO Secretariat is to support the group by identifying the most optimal modality and format for its operationalization. Participants were invited to continue engaging with the WHO Secretariat, and share further ideas and suggestions for formalizing the Network for education and training in infodemic management.

4.1 Principles of operation and suggested next steps

To formalize the current infodemic manager community of practice that has evolved in the past three years of collaboration and training with WHO, the draft document circulated prior to the meeting outlines proposed principles of collaboration for a Network for education and training in infodemic management, and suggested next steps. On the second day of the Consultation, participants deliberated the purpose and objectives of such a Network, possible ways of collaboration and priority action areas.

Suggested **purpose and objectives** of the Network are to (i) support harmonized training curricula for academic/research training programmes, and for professional/practice training programmes; (ii) facilitate collaboration across organizations, and exchange of trainees and learners; (iii) interface the training programmes with the WHO global infodemic manager community of practice and research.

Two ways of collaboration were proposed in the draft document:

- Designation of WHO collaborating centres (CC);
- Joint training programmes, workshops, fellowships and certifications.

The option of the formal engagement of academic institutions with WHO through establishment of **collaborating centres5** was discussed in a plenary session with representatives of four active WHO collaborating centres. It was highlighted that while the benefits of being a WHO collaborating centre are manifold, work and dedication required to establish a collaborating centre are enormous, and the funding from WHO is limited. To be appointed a WHO collaborating centre, interested institutions need to undergo a multi-step procedure, where the first step is securing a documented collaboration with WHO for the period of at least two years. Further important considerations evolved with respect to establishing a WHO collaborating centre as a mode of operating the Network.

The second option of the Network operation - through **joint training programmes and certifications** – was believed to offer other ways of collaboration with WHO, including informal collaboration and cross sharing. There is a group understanding that a specific format and operation mode of such a Network are to be clearly defined before its formal establishment.

Priority areas of work for the Network can include, but are not limited to:

- Coordination of / communication with the member institutions of the Network;
- Development of reference curricula and evaluation tools (e.g. competencies, tasks, job profiles, assessments) for in-training programmes;
- Delivery of WHO certified curriculum either through WHO Academy or by external organizations certified by the WHO Academy;
- Advocacy for the establishment and further development of infodemic management education programmes by universities, organizations, and health authorities.

5 https://www.who.int/about/collaboration/collaborating-centres/information-for-who-collaborating-centres

Specific action items following the meeting:

- Formation of a global catalogue of training programmes by type and audience;
- Collection of competency frameworks and learning programmes with IM components;
- Review and update of the WHO competency framework and definition of a job tasking analysis mapped against job and learner profiles;
- Preparation for surge support in infodemic management by defining what student certification requires and certifying university students.

Small group discussions about the potential contribution of participating institutions to support the Network demonstrated that partners are willing to contribute to the development of IM curricula; pilot testing the teaching and evaluation material and tools within their degree and other relevant programmes; support training of trainers; share methodologies and tools for curriculum development and delivery; support the IM training implementation in public health organizations; and engage outside academia as needed for promotion of infodemiology and infodemic management.

Annex 1. Provisional programme

Day 1 – Tuesday, 21 March 2023

Morning welcome and opening starts at:
Faculty of Medicine, University of Belgrade, Dr Subotica Starijeg St 8, Belgrade, Serbia

08:00	(optional for those who are staying at the Hotel Metropol or nearby) **Pick up by bus at Hotel Metropol Lobby and transport to Faculty of Medicine**
08:15 – 9:00	**Registration at the Faculty of Medicine** (participants arrive either by bus from Hotel Metropol or on their own) Welcome coffee and tea
09:00 – 09:10	**Welcome to the Faculty of Medicine, University of Belgrade** **Lazar Davidović, Faculty of Medicine, University of Belgrade, Serbia**
09:10 – 09:25	**Opening of the meeting** **Fabio Scano, WHO Country Office for Serbia** **Jelena Jankovic, Ministry of Health, Serbia** **Verica Jovanovic, Institute of Public Health Batut, Serbia** **Tim Nguyen, World Health Organization**
09:25 – 9:40	**Welcome, affirmation of chair, housekeeping and ways of working** **Tina Purnat, World Health Organization** **Ofelia Cazacu, World Health Organization**
09:40-10:00	**Slido warmup** **Tina Purnat, World Health Organization**
10:00 – 11:45	**Start of working session** **Setting the scene: Experience from infodemic manager teams globally and across different levels of the health system**

10 minutes per speaker:

- **Santi Indra Astuti, MAFINDO, Indonesia**
- **Neville Calleja, Ministry for Health, Malta**
- **Chris Voegeli, US Centers for Disease Prevention and Control, USA**
- **Peter Benjamin, COVID-19 infodemic insights team, South Africa**
  Maddie Perlman-Gabel and Isabella Guerra Uccelli, Center for Health Equity and Community Wellness, NYC Health Department, USA
- **Stefan Mandic Rajcevic, University of Belgrade, Serbia & Irena Stanojevic, WHO Country Office Serbia**

Questions for speakers to answer in their talks, 10 min, max 5 slides

- how did the infodemic and your response to it start in your country/organization
- how did it grow and change in the past few years
- what key lessons are you taking from the COVID-19 experience as you routinize your work

Lightning Q&A rounds across speakers:

- What advice would you give yourself in January 2020, and what advice would you give to your leadership in January 2020.
- What are 2-3 skills that you wish that schools of public health and other programmes would teach to help prepare staff for the challenges that the infodemic brings, especially during the next pandemic or health emergency response

Review of questions submitted via Slido

11:45 - 12:00	**Group photo**
12:00 – 14:00	**Bus transfer to lunch and meeting venue** **Lunch** Hotel Metropol Palace, Bulevar kralja Aleksandra St 69, Belgrade **https://goo.gl/maps/9Vd7g4R1e9zosMkq6**
14:00 – 14:20	*Setting the scene (continued)* **WHO competency framework for building a response workforce for infodemic management** • **Elisabeth Wilhelm, Brown University, USA** • **Tina Purnat, World Health Organization**
14:20 – 14:45	**Experience with training programme delivery in infodemic management** *Perspectives by four discussants (7 minutes each)* • **Dilek Aslan, Faculty of Medicine, Hacettepe University, Turkiye** • **Elena Petelos, University of Maastricht** • **Feili Tu Keefner, University of South Carolina, USA** • **Ravi Sreenath, WHO Europe** **Questions for discussants to answer in their talks:** • How did you begin to mainstream IM concepts into training for specific profiles you are training? • What has the response been to the training, have you made any changes or improvements based on this feedback? What do you want to do next?

14:45 – 15:45	**Discussion in small groups** Groups rotate through answering questions on 5 white boards; 10 minutes each plus 10 minutes walk and talk **Group facilitators: Stefan Mandic-Rajcevic, Aleksandar Stevanovic, Tim Nguyen, Noha Hassan, Agnese Pastorino** **Questions per group** • How could specific infodemic management/infodemiology competencies and skills be included in existing programs that you're involved in at your institution that lead to certification? • What kind of partnerships would you need to build externally or internally, to be successful in this training? • How do you take into account the interdisciplinary nature of infodemic management when designing learning and educational programmes? • To what extent are the different training and teaching modalities used or incorporated in your program at your institution? • What practical guidance would you want from WHO when designing new or updating existing educational and learning program for infodemic management/infodemiology?
15:45 – 16:00	**Coffee and Tea Break**
16:00 – 16:30	**Experience with learning approaches to teach infodemic management** *Perspectives by four discussants (7 minutes each)* • **Rafaela Rosario, University of Minho, Portugal** • **Claire Jennings, TEPHINET** • **Lucia Campos Pellanda, UCSPA, Brazil** • **Elisabeth Wilhelm, Brown University, USA** **Questions for discussants to answer in their talks:** • How did you begin to mainstream IM concepts into training for specific profiles you are training?
16:30 – 17:15	**Slido discussion: Identifying Strengths, Gaps and Needs** • What are some of the disciplines that your program is very strong in that can support infodemic management training? • What are some of the disciplines or expertise that you are missing that you think are needed to support infodemic management training? • Beyond including the right disciplines and expertise, what do you see would be the biggest challenges to build out an infodemic management training programme? • What burning questions do you still have about infodemic management but you're too afraid to ask? **Discussion (**review Q1 and Q2, and discussion on Q3 and Q4 on suggested solutions and answers)

17:15 – 17:30	**Housekeeping, schedule for the next day** **Tina Purnat, World Health Organization** **Ofelia Cazacu, World Health Organization**

18:00 Assembly at the hotel lobby

Group walk with guides by the University of Belgrade to external dinner venue **18:45 – 21:00**
Dinner at Tri Sesira, https://trisesira.rs/en/

Day 2 – Wednesday, 22 March 2023

Meeting venue:
HOTEL METROPOL PALACE, Bulevar kralja Aleksandra St 69, Belgrade https://goo.gl/maps/9Vd7g4R1e9zosMkq6

09:00 – 09:15	Welcome and housekeeping **Tina Purnat, World Health Organization Ofelia Cazacu, World Health Organization**
09:15 – 09:45	*Mainstreaming infodemic management into training and educational programmes*
	Training in cross disciplinary collaborations and certification of trainees *Perspectives by four discussants (7 minutes each)* • **Laurent Petit, WHO Academy** • **Hanan Al Kadri, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia** • **Ian Brooks, University of Illinois, Urbana Champaign, IL, USA** **Robert Otok, ASPHER** **Questions for discussants to answer in their talks:** • How have you built collaborations in your training programs that cater to cross disciplinarity or application of skills to real world problems. • How does the certification process work in your programme and how may infodemic management topics fit into this process?
09:45-10:45	**Slido Discussion** In your training programs, do you use (and how) micro certifications and badges or other similar recognitions of achievement? • What are types of informal and formal mechanisms for collaboration in provision of educational programs with other organizations? • What practical guidance would you want from WHO when designing new or updating existing educational and learning program for infodemic management/ infodemiology? • How would we link the trainees to further job opportunities specifically focused on infodemic management? • What would be needed to make the linkage between training and job placement for infodemic management more successful? Discussion/review through the answers

10:45 – 11:05	**Coffee and Tea Break**
11:05 – 11:30	**Review of stickies on the boards on priority professional profiles and learning modalities** **Facilitator: Tina Purnat, World Health Organization** **Slido – any other comments on the principles background document**
11:30 – 11:45	*Mainstreaming infodemic management into training and educational programmes* **Establishing a network for education and training in infodemic management and infodemiology** **Tim Nguyen, World Health Organization**
11:45 – 12:00	*Housekeeping* **Tina Purnat, World Health Organization**
	Ofelia Cazacu, World Health Organization
12:00 – 13:30	**Lunch break**
13:30 – 14:00	***Leveraging networks and collaborations to advance learning and training programmes*** *Perspectives by four discussants (7 minutes each)* • **Amy Rowland, Emory University, USA** • **Elil Renganathan, Sunway University, Malaysia** • **Elena Musi, University of Liverpool, UK** • **Laurent Petit, WHO Academy** **Questions for discussants to answer in their talks:** • How have you leveraged networks or made connections across disciplines in your early thinking about incorporating infodemic management into training curricula. • Looking ahead, what do you think would be needed to make a network of programs and participants at this meeting successful?

14:00 – 15:00	**Discussion in small groups** Groups rotate through answering questions on 5 white boards; 10 minutes each plus 10 minutes walk and talk **Group facilitators: Stefan Mandic-Rajcevic, Aleksandar Stevanovic, Tim Nguyen, Noha Hassan, Agnese Pastorino** **Questions for Discussion** • What content, resources and tools from a global level and from other countries would be beneficial to you? • What unique strengths does your institution bring to incorporating infodemic management topics into learning and training programmes? • How might your training program contribute to the network? What comparative advantage or specific expertise could your organization contribute to this discussion? • What can the network do to ensure your training program feels supported to implement IM training components? • How can WHO best support this network and the partners within it to make it successful?
15:00 – 15:20	**Coffee and Tea Break**
15:20 – 16:00	**Discussion and next steps** **Tim Nguyen, World Health Organization Chair**
	Discussants responding to Tim's summary points – 5 minutes each • **Victoria Vivilaki, University of West Attica, Greece** • **Eftychia Kotronia, National Institute of Public Health, Poland** • **Vesna Bjegovic-Mikanovic, University of Belgrade, Serbia** **Plenary discussion**
16:00 – 16:15	**Wrap up of day, closing Slido, housekeeping** **Tina Purnat, World Health Organization** **Ofelia Cazacu, World Health Organization**
16:15 – 16:30	**Closing of meeting** **Vesna Bjegovic-Mikanovic, University of Belgrade, Serbia** **Tim Nguyen, World Health Organization**

Day 3 – Thursday, 23 March 2023 – World Building for Infodemic Management: Adding Immersive Simulations to Your Teaching Arsenal

Meeting venue:
HOTEL METROPOL PALACE, Bulevar kralja Aleksandra St 69, Belgrade https://goo.gl/maps/9Vd7g4R1e9zosMkq6

08:30 – 09:00	Registration
09:00 – 09:15	Welcome and housekeeping **Tim Nguyen, World Health Organization** **Tina Purnat, World Health Organization**
09:15 – 12:30	*Simulation on generation of infodemic insights generation and development of recommendations with faculty and public health professionals* ***Facilitators:*** • Tina Purnat, World Health Organization • Elisabeth Wilhelm, Visiting Fellow, Information Futures Lab, Brown University, USA ***Coaches, facilitators, role players:*** • Aleksandar Stevanovic • Stefan Mandic Rajcevic • Noha Hassan • Agnese Pastorino • Catherine Bertrand Ferrandis • Rafaela Rosario • Chris Voegeli • Maddie Perlman-Gabel • Neville Calleja • Claire Jennings • Amber Lauff • TBD/further volunteers
12:30-14:00	**Lunch break**
14:00 – 14:10	***Welcome to the workshop*** **-– World Building for Infodemic Management: Adding Immersive Simulations to Your Teaching Arsenal** • **Tina Purnat, World Health Organization** • **Elisabeth Wilhelm, Brown University, USA**
14:10 – 14:40	***Slido: Reflection on simulation exercise design from earlier in the day*** • **Tina Purnat, World Health Organization** • **Elisabeth Wilhelm, Brown University, USA**

14:40 – 15:10	*Unveiling the WHO infodemic manager training experience* *Discussion (7 minutes each)* • **Stefan Mandic-Rajcevic, University of Belgrade, Serbia** • **Santi Indra Astuti, MAFINDO, Indonesia** • **Catherine Betrand Ferrandis, OLYLO** *Reflecting on the experience this morning and your trainee/coach experience…* • How did the similar experience of the WHO infodemic manager training change your approach to infodemic management and how you train others to do this work? • Beyond learning new technical skills in this training how were soft skills, including cultural humility emphasized in this training modality? • How could trainees feel psychologically safe learning an entirely new way of approaching a public health issue and working with people with extremely diverse backgrounds and levels of experience?
15:10 – 15:20	**Coffee and Tea Break**
15:20 – 16:45	*Design, delivery and considerations for immersive simulation design for teaching infodemic management* • **Tina Purnat, World Health Organization** • **Elisabeth Wilhelm, Brown University, USA**
16:45 – 17:15	*Ideas/suggestions for strengthening or innovating on this type of design* • Designing the simulation world • Designing the tasks in the simulation world • Introducing humor and causing the infodemic experience • Teaching cultural humility/psychological safety • Providing support to trainees • Considerations for virtual vs in person delivery • Preparing and assembling the team • Delivering the performance and simulation experience
17:15 – 17:30	**Wrap up of workshop, housekeeping** **Tina Purnat, World Health Organization** **Ofelia Cazacu, World Health Organization**
17:30 – 17:45	**Closing of workshop** **Tina Purnat, World Health Organization** **Elisabeth Wilhelm, Brown University, USA**

Annex 2. List of participants

Hanan Al Kadri
Dean
College of Public Health & Health Informatics
King Saud bin Abdulaziz University for Health Sciences
Saudi Arabia

Mara Rubia André Alves de Lima
Member of UFCSPA Internationalization Committee
Fulbright Visiting Scholar, Global Health
Chair, Rutgers University (Fall 2021)
Postgraduate Student of Diplomacy in Global Health (FIOCRUZ, PAHO, WHO, Brazil)
Global Health Team & Clinical Medicine Department
Universidade Federal de Ciências da Saúde de Porto Alegre - UFCSPA
Brazil

Dilek Aslan
Professor of Public Health
Faculty of Medicine
Haccettepe University
Turkiye

Santi Indra Astuti
Lecturer
Faculty of Communication Science
Journalism Department
Islamic University of Bandung - UNISBA
Indonesia

Susana Barragan
Scientific Officer Behaviour Change
Communication DPR
European Centre for Disease Prevention and Control - ECDC
Sweden

Haitham Bashier
Capacity Building Team Lead
EMPHNET
Sudan

Jelena Begović
Minister of Science, Technological Development and Innovation
Ministry of Science, Technological Development and Innovation
Serbia

Peter Benjamin
Director
HealthEnabled
South Africa

Vesna Bjegović Mikanović
Professor
Institute of Social Medicine
School of Public Health
Faculty of Medicine
University of Belgrade
Serbia

Ian Brooks
Research Scientist & Director
Center for Health Informatics
School of Information Sciences
University of Illinois
Urbana Champaign, Illinois
United States

Neville Calleja
Chair
Public Health Department
Faculty of Medicine & Surgery
University of Malta
Malta

Lucia Campos Pellanda
Dean
Universidade Federal de Ciências da Saúde de Porto Alegre - UFCSPA
Brazil

Lazar Davidović
Dean
School of Public Health
Faculty of Medicine
University of Belgrade
Serbia

Xhelandin Dracini
Professor of Surgery and Dean
Faculty of Medicine
University of Tirana
Albania

Deepti Ganapathy
Visiting Assistant Professor
Chairperson
Centre for Management Communication
Indian Institute of Management Bangalore - IIMB
India

Danica Grujičić
Minister of Health
Ministry of Health of Serbia
Vice-Dean
Faculty of Medicine
University of Belgrade
Serbia

Isabella Guerra Uccelli
Program and Research Coordinator
New York City Department of
Health and Mental Hygiene
New York City, New York
United States

Claire Jennings
Project Manager Learning
The Task Force for Global Health
Atlanta, Georgia
United States

Ashish Joshi
Dean & Distinguished University Professor
School of Public Health
University of Memphis
Memphis, Tennessee
United States

Verica Jovanović
Director
Institute of Public Health of Serbia
Serbia

Eftychia Kotronia
EPIET-EU Track Fellow
National Institute of Public Health NIPH
NIH National Research Institute of Poland
Poland

Amber Lauff
Communications Manager
TEPHINET
The Task Force for Global Health
Atlanta, Georgia
United States

Henrique Lopes
Health Education Chair Coordinator,
Word Committee of Learning
And
Director of Centre for Global Health, Universidade
Nova de Lisboa (UNIV. Nova—IMS)
Portugal

Stefan Mandic Rajcevic
Assistant
School of Public Health
Faculty of Medicine
University of Belgrade
Serbia

Mark Marku
Head, EJO Team Leader in Albania
Journalism & Communication Department
University of Tirana
Albania

Raul Antonio Morais Melo
Associate Professor
Faculty of Medical Sciences FCM
University of Pernambuco (UPE)
Brazil

Elena Musi
Senior Lecturer
Department of Communication & Media
University of Liverpool
United Kingdom

Robert Otok
Association of Schools of Public
Health in the European Region
Belgium

Maddie Perlman-Gabel
Special Project Coordinator
Office of Vector Surveillance and Control
New York City Department of
Health and Mental Hygiene
New York City, New York
United States

Elena Petelos
Lecturer EBM
Senior Reseach Fellow in Public Health
Health Services Research
CAPHRI Care and Public Health Research Institute
Faculty of Health, Medicine and Life Sciences
University of Maastricht
Netherlands

Salman Rawaf
Professor of Publi Health
Director, WHO Collaborating Centre
Department of Primary Care and Public Health
School of Public Health
Faculty of Medicine
Imperial College London
United Kingdom

Elilarasu Renganathan
Professor of Public Health and Policy
School of Medical and Life Sciences
Sunway University
Malaysia

Rafaela Rosário
Adjunct Professor
Research Unit in Health Sciences:
Nursing Coimbra School of Nursing
University of Minho
Portugal

Amy Rowland
Director of Communication
Emory Global Health Institute - EGHI
Emory University
Atlanta, Georgia
United States

Branko Ružić
Minister of Education
Ministry of Education
Serbia

Aleksandar Stevanović
Institute of Social Medicine
University of Belgrade
Serbia

Feili Tu-Keefner
Associate Professor
School of Information Science
College of Information and Communications
University of South Carolina
Columbia, South Carolina
United States

Sandra Varaidzo Machiri
African Field Epidemiology Network - AFENET
Zimbabwe

Luís Miguel Velez Lapao
Assistant Professor with Aggregation
Institute of Hygiene and Tropical Medicine
Universidade Nova de Lisboa (IHMT/UNL)
Portugal

Viktoria Vivilaki
Associate Professor
Midwifery Department
University of West Attica
Greece

Christopher Voegeli
Behavioral Scientist
Acting Vaccine Confidence and Demand Lead
National Center for Immunization
and Respiratory Diseases
Immunization Services Division
US Centers for Disease Control and Prevention
Atlanta, Georgia
United States

OBSERVERS

Catherine Bertrand-Ferrandis
CEO OLYLO
Contractor for the WHO Infodemic Management Team
France

Elisabeth Wilhelm
Behaviour Change Commuunicator
and Infodemic Manager
Information Futures Lab
School of Public Health
Brown University
Providence, Rhode Island
United States

WORLD HEALTH ORGANIZATION HEADQUARTERS

Ofelia Cazacu
Technical Officer
High Impact Events Epidemic and
Pandemic Preparedness - IEP
Epidemic and Pandemic Preparedness
and Prevention - EPP

Noha Hassan
Technical Officer
High Impact Events Epidemic and Pandemic Preparedness - IEP
Epidemic and Pandemic Preparedness and Prevention - EPP
World Health Emergencies Programme

Tim Nguyen
Unit Head
High Impact Events Epidemic and Pandemic Preparedness - IEP
Epidemic and Pandemic Preparedness and Prevention - EPP

Agnese Pastorino
Technical Officer
High Impact Events Epidemic and Pandemic Preparedness - IEP
Epidemic and Pandemic Preparedness and Prevention - EPP

Laurent Petit
Head of Learning Production
WHO Academy

Tina Purnat
Team Lead for Infodemic Management
High Impact Events Epidemic and Pandemic Preparedness - IEP
Epidemic and Pandemic Preparedness and Prevention - EPP

Annex 3. Workshop on immersive simulation design, 23 March 2023

A three-hour simulation exercise on generating infodemic insights and development of recommendations was used as an example of an effective training modality for future infodemic managers. The exercise was followed by a workshop on deconstructing an immersive infodemic management simulation.

The design of the presented immersive infodemic management simulation comprises eight essential components:

- **Designing the simulation world** that evokes familiarity professionally and socially, and recreates the information environment during a health emergency when overwhelming information noise makes it difficult to identify accurate information and reliable lines of communication, while managing competing priorities and pressure to act swiftly.
- **Designing the tasks in the simulation** to facilitate team work by relying on previous experience and learning from one another, while ensuring that tasks resemble real functions expected in the workplace, require a specific type of output on a short timeline without clear instructions of the processes. A critical, final task in a simulation should be interpreting the evidence collected during the exercise to a busy high-level policymaker.
- **Introducing humour and causing infodemic experience.** Humour can serve as a cross-cultural, cross-generational, cross-hierarchical leveller and a coping mechanism in a rapidly changing emergency response situation. Hence, inserting humorous elements into the simulation ensures that the world created feels more real. Borrowing from social and cultural influences globally can further contribute to the realness to the simulation experience, while avoiding stereotypes and thinly fictionalized groups of people who are marginalized, and building in shocks to complete characters and institutions that trainees interact with.
- **Teaching cultural humility/psychological safety** by emphasizing that infodemic management is a new topic and there is no one perfect answer and no correct way to address the problem. While most participants are not expert in IM, they usually come with field experience and disciplinary knowledge, but cannot be expected to perfectly operate in other cultural contexts, hence it is critical to recognize the importance of learning from others. Selected examples of teaching cultural humility include introducing simulation participants by name and professional background intentionally omitting their titles and prominence in the real world; or not prescribing the ways of working in designated teams, so they have to decide how to operate together in a fictitious world.
- **Providing support to trainees** during and after the simulation exercise. Coaches supporting the learning and development of a small team during a simulation oversee the group dynamic and offer perspectives that can pull back a team to the big picture, if needed, but refrain from leading the work of the team. Depending on the length of the simulation exercise, additional channels of support may include email or messenger helpline, summary slides with immediate tasks, or group chats connecting the simulation participants. After longer simulation-based training, establishing virtual alumni networks can facilitate continued experience sharing, and lead to potential collaborations and joint initiatives among alumni.
- **Considerations for in-person versus virtual delivery.** The *in-person delivery* of an immersive simulation requires a high level of coordination among the facilitation team, and attention to the design of a physical space, including effective tools for brainstorming and ideation, such as stickies, posters, worksheets, etc. Simulation leading is a performance and may require personas and support materials to make the performance real. The asynchronous nature of the *virtual delivery*, and varied digital skills and internet quality of participants require information, emotion and experience pacing. Designing the virtual simulation exercise aimed to develop the same skills as the in-person simulation requires a solid understanding of online learning modalities. For example, a feeling of uncertainty, which is a salient

element of the infodemic management simulation exercise, can be created by intentionally assigning people to teams where members are from conflicting time zones, different backgrounds.

- **Preparing and assembling the delivery team** may often require more people than initially assumed. It is therefore critical that from the very beginning all team members (course directors, coaches, IT/ helpdesk support, lecturers, etc.) have defined roles, receive clear instruction and join a designated communication channel for organizing and flagging issues. Team composition should ensure diversity of profiles and experiences in coaches; paired coaches should come from different skillsets and experiences.
- **Delivering the performance and simulation experience** builds on the recognition that a human-centred design (HCD) is key to infodemic management. It is expected that an infodemic manager understands how the designed environment affects people's feelings, experience and behaviour. HCD also recognizes that the best way to meet end user needs is an iterative development process aimed at understanding end users' needs and experiences. Hence, simulation delivery teams should be able to identify the situations that require changes in the way a simulation exercise is delivered, and promptly adapt as needed.

Annex 4. Example ToRs and competencies breakdown

Appendix to the WHO meeting report for infodemic management curriculum development (04 May 2022)

Four domains of competencies of the WHO competency framework for infodemic management were described in further detail through 109 competencies that were mapped into seven flavors of infodemic manager and related profiles that are similar and can be used to fill skills gaps in the field for infodemic response.

Annex 4 contents

The challenge

More health agencies are recruiting people who can do social listening and infodemic management, but do not have a reliable set of competencies to draw on in their organizations

In Nov 2020-Mar 2022, WHO built an infodemic manager competency framework with technical involvement of US CDC, UNICEF and external review of WHO partners.

This framework would become a basis to further build competencies and job profiles, based on evolution and professionalization of the field since 2020.

The solution

Developed more detailed list of competencies and mapped them to functions in the field, ground-truthed through review of Immunization Demand Hub Digital Workstream and WHO partners.

The competencies were meant to be exhaustive—no one will have all of them, but instead, profiles are matched to facilitate HR experience and skills mapping into job advertisements.

In a perfect world, a manager should look at competencies map, determine what skills are already covered, and which ones needs to be recruited for

Templated TORs were developed for the following “flavors” of infodemic manager and related profiles:

- Infodemic Manager – Generalist
- With specialist background in behavioral science
- With specialist background in social media analysis

- With specialist background in data analysis
- With specialist background in policy and partnership building
- With specialist background in health communication
- With specialist background in health promotion/health education

Templated TORs are meant to help facilitate faster recruitment and rostering of skilled staff and consultants to promote healthy behaviors, infodemic management and response, and promotion of adherence to PHSM or vaccine acceptance and demand. They have been used by WHO, UNICEF and other Immunization Demand Hub Partners in recruitment of surge support and staff.

Collection of terms of reference for infodemic management personnel

BACKGROUND

On 30 January 2020, the World Health Organization (WHO)declared the new coronavirus (SARS-CoV-2) epidemic an emergency of public health of international interest and on 11 March, announced it as the first pandemic of coronavirus disease (COVID-19). With this new pandemic, the amount of information on COVID-19, both accurate and inaccurate, increased significantly which was then defined by WHO as an 'infodemic'. During an infodemics, people are overwhelmed by the amount of circulating information which can hamper their ability to follow public health guidance, both impacting the public health response and creating confusion which could ultimately impact trust in health authorities and governments.

Just prior to the pandemic in 2019, WHO named 'vaccine hesitancy' among the top 10 threats to global health, citing its potential to undermine global efforts to eradicate polio, eliminate measles and contain cervical cancer. Vaccine confidence and demand issues are key drivers of under-vaccination. Mis- and disinformation about vaccines is as old as vaccination itself. However, information voids present an ever-evolving challenge, along with the inability for health systems to swiftly fill these voids with accurate, credible information quickly to reduce the spread of mis- and disinformation among people who are vulnerable to it.

CONSIDERATIONS

There are several things to consider when looking to add an infodemic management unit or personnel to a team:

Infodemic management is a complex process from planning and analysis to intervention implementation and evaluation. One single employee will not have all the skills, resources, or time to perform all necessary infodemic management functions successfully. It is necessary to analyze the needs of your unit to identify the specific skills that don't already exist that an infodemic manager would need to fill.

- Infodemic management does not occur in a silo and infodemic managers must be well integrated within health program and emergency response structures.
- A mix of theoretical knowledge and practical field experience is most valuable in infodemic management personnel, to better bridge the data to analysis to action gap, especially when leveraging human-centered approaches in intervention design, development and evaluation.
- Infodemic management is a new field, and most candidates will not have direct experience. It is important to look for candidates with transferable or relatable skills and to determine what skills are able to be taught.

SAMPLE TERMS OF REFERENCE FOR INFODEMIC MANAGEMENT PERSONNEL

Terms of Reference (TOR) may look different depending on the needs of your [agency, unit, etc.]. Below are sample TORs for potential types of infodemic management personnel you may need:

- Infodemic Manager – Generalist
- With specialist background in behavioral science
- With specialist background in social media analysis

- With specialist background in data analysis
- With specialist background in policy and partnership building
- With specialist background in health communication
- With specialist background in health promotion/health education

TERMS OF REFERENCE

INFODEMIC MANAGER - Generalist

[THESE ARE GENERIC TERMS OF REFERENCE TO SUPPORT IDENTIFICATION OF A PROFESSIONAL TO LEAD/HELP WITH SOCIAL LISTENING, MISINFORMATION MANAGEMENT AND DIGITAL ENGAGEMENT. THESE TORS WILL BE ADAPTED TO COUNTRY CONTEXT, REQUIRED TYPE AND VOLUME OF SUPPORT]

PURPOSE AND OBJECTIVES

All infodemic management personnel are expected to:

- Connect infodemic management and social listening goals and objectives to overarching program goals and strategies
- Establish systems and methods for detect key topics and narrative information deficits and open questions, and mis/disinformation in offline and online populations, across multiple data sources and types
- Work with a multidisciplinary team to contribute to an integrated analysis, develop interventions and communications and research to understand behaviors
- Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
- Provide technical support for partners within government and across other organizations and provide surge support during a crisis or emergency
- Work within program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strengthen health programs and systems
- Establish and strengthen relationships with other professionals working infodemic management to leverage expertise and expand the science of infodemic management

In addition to the above, an **infodemic management leader or generalist** will be responsible for:

DELIVERABLES

All infodemic management personnel will contribute to the development and delivery a regular (i.e. monthly, bi-weekly, etc.) report that outlines key topics and narrative information, deficits and open questions, and mis/disinformation in offline and online populations across multiple data sources and types and providing evidence-informed recommendations for priority follow-up actions on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included.

- Deliverable 1
- Deliverable 2
- Deliverable 3

TASKS AND TIMEFRAME

Activities/tasks	Deliverables	Timeline
[TO BE SPECIFIED]		

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in ToR.
- Compliance with the established deadlines for submission of deliverables.
- Quality of deliverables.
- Demonstration of high standards of work based on experience and portfolio

QUALIFICATION REQUIREMENTS

All infodemic management personnel should have experience:

- Navigating scientific and organizational clearance
- Presenting and explaining results of research or evaluation and proposed interventions or public health actions
- Establishing SMART goals and objectives and systems for process and quality improvement
- Working across government and non-governmental organizations, especially across different levels from local to national
- Identifying and analyzing target audiences for interventions
- Analyzing quantitative and qualitative data

In addition to the above, a **infodemic management leader or generalist** should have experience:

TERMS OF REFERENCE

INFODEMIC MANAGER – specialist with background in applied behavioral science

[THESE ARE GENERIC TERMS OF REFERENCE TO SUPPORT IDENTIFICATION OF A PROFESSIONAL TO LEAD/HELP WITH SOCIAL LISTENING, MISINFORMATION MANAGEMENT AND DIGITAL ENGAGEMENT. THESE TORS WILL BE ADAPTED TO COUNTRY CONTEXT, REQUIRED TYPE AND VOLUME OF SUPPORT]

PURPOSE AND OBJECTIVES

All infodemic management personnel are expected to:

- Connect infodemic management and social listening goals and objectives to overarching program goals and strategies
- Facilitate a collaborative process including staff with specialization in communications, behavioral science, informatics, data management, and epidemiology to contribute to integrated analysis
- Establish systems and methods for detect key topics and narrative information deficits and open questions, and mis/disinformation in offline and online populations, across multiple data sources and types
- Work with a multidisciplinary team to contribute to an integrated analysis, develop interventions and communications and research to understand behaviors

- Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
- Provide technical support for partners within government and across other organizations and provide surge support during a crisis or emergency
- Work within program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strengthen health programs and systems
- Establish and strengthen relationships with other professionals working infodemic management to leverage expertise and expand the science of infodemic management

In addition to the above, a **behavioral scientist or specialist** will be responsible for:

- Identifying, analyzing, and evaluating the evidence-basis of main narratives and claims about health issues circulating in the population
- Establishing criteria and approach for determining and applying threat or impact matrix to analyze topic and themes to adapt program needs
- Providing evidence-informed recommendations for priority follow-up actions on detected high-risk signals
- Identifying and defining target populations for interventions from policy and health system to community and individual levels as well as potential barriers and facilitators of a desired health behavior or outcome within those populations
- Applying analytical and evaluative frameworks to assess the quality and the risk of mis/disinformation to behaviors
- Defining the knowledge or desired health behavior and identify evidence-based or emerging best practices for intervention development and identifying the most appropriate model of change to apply to intervention development and develop clear process and outcome indicators
- Determining how to expand or adapt current routine surveys or surveillance mechanism to gather additional necessary data and supporting message testing with target audiences
- Coordinating with health program staff to implement designed interventions, including the designing of community engagement strategies and activities and establishment of community and social listening feedback loops
- Building capacity of healthcare workers, partners, and influencers to share accurate, credible information and address concerns, information gaps, and misinformation effectively

DELIVERABLES

All infodemic management personnel will contribute to the development and delivery a regular (i.e. monthly, bi-weekly, etc.) report that outlines key topics and narrative information, deficits and open questions, and mis/disinformation in offline and online populations across multiple data sources and types and providing evidence-informed recommendations for priority follow-up actions on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included. In addition, a **behavioral scientist or specialist** will create/develop:

- A protocol for data analysis and reporting using an established and/or adapted framework using behavioral models.
- Qualitative data collection tools to assess audience perceptions, attitudes, and concerns
- Implementation guidance for proposed and developed interventions
- Reports on pilot testing or message testing interventions

TASKS AND TIMEFRAME

Activities/tasks	Deliverables	Timeline
[TO BE SPECIFIED]		

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in ToR.
- Compliance with the established deadlines for submission of deliverables.
- Quality of deliverables.
- Demonstration of high standards of work based on experience and portfolio

QUALIFICATION REQUIREMENTS

All infodemic management personnel should have experience:

- Navigating scientific and organizational clearance
- Presenting and explaining results of research or evaluation and proposed interventions or public health actions
- Establishing SMART goals and objectives and systems for process and quality improvement
- Working across government and non-governmental organizations, especially across different levels from local to national
- Identifying and analyzing target audiences for interventions
- Analyzing quantitative and qualitative data

In addition to the above, a **behavioral scientist or specialist** should have experience:

- Conducting literature reviews and analysis
- Analyzing and evaluating individuals' behaviors, focusing on personal, social and environmental determinants
- Discerning data collection and social listening tools and platforms and data analysis techniques and approaches to different data sources and to establish best use cases and address specific program needs
- Writing and editing content for a variety of stakeholders about findings informed by theory and strategic planning
- Working with human-centered design principles
- Pre-testing or piloting new or adapted interventions in the field with target populations
- Interpreting latest scientific research and literature and translate it into interventions
- Developing and implementing interventions that address individual, community, cultural and societal-level factors affecting trust and resilience
- Developing testing design, theories, and methods for message testing including conducting A/B testing and focus groups
- Developing strategies that leverage social norms and social norm modeling to promote healthy or desired behaviors
- Conducting research and evaluations, rapid assessments about a specific topic or interventions and supporting local governments and organizations in these activities
- Writing policy briefs and concept notes to translate findings for key stakeholders and the public

TERMS OF REFERENCE

INFODEMIC MANAGER - specialist with background in applied social media analysis

[THESE ARE GENERIC TERMS OF REFERENCE TO SUPPORT IDENTIFICATION OF A PROFESSIONAL TO LEAD/HELP WITH SOCIAL LISTENING, MISINFORMATION MANAGEMENT AND DIGITAL ENGAGEMENT. THESE TORS WILL BE ADAPTED TO COUNTRY CONTEXT, REQUIRED TYPE AND VOLUME OF SUPPORT]

PURPOSE AND OBJECTIVES

All infodemic management personnel are expected to:

- Connect infodemic management and social listening goals and objectives to overarching program goals and strategies
- Establish systems and methods for detect key topics and narrative information deficits and open questions, and mis/disinformation in offline and online populations, across multiple data sources and types
- Work with a multidisciplinary team to contribute to an integrated analysis, develop interventions and communications and research to understand behaviors
- Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
- Provide technical support for partners within government and across other organizations and provide surge support during a crisis or emergency
- Work within program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strengthen health programs and systems
- Establish and strengthen relationships with other professionals working infodemic management to leverage expertise and expand the science of infodemic management

In addition to the above, a **social media analyst or specialist** will be responsible for:

- Creating content, key messages, talking points and associated communication products (i.e. digital, print, graphics, etc.) and disseminating through appropriate channels, including supporting spokespersons and health officials and adapting for variety of target populations and stakeholders
- Evaluating social listening tools and platforms and developing standard operating procedures to use these tools and platforms for data collection, analysis, and the establishment of community feedback loops to implement and monitor interventions
- Identifying and evaluating potential new data sources for social and community listening and leveraging or establishing partners to expand access to necessary data
- Developing or adopting taxonomies of classification for topic(s), including the development of Boolean search strings and an associated code book
- Establishing, maintaining, and strengthening relationships with technology companies, government agencies, trusted messengers/influencers, content amplifiers, and other appropriate organizations related to infodemic management
- Coordinating with [country/government] to ensure a cohesive social media strategy and provide evidence-informed recommendations for priority actions based on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included.
- Establishing transparent, bilateral data sharing mechanisms with team members, collaborators, and partners

DELIVERABLES

All infodemic management personnel will contribute to the development and delivery a regular (i.e. monthly, bi-weekly, etc.) report that outlines key topics and narrative information, deficits and open questions, and mis/disinformation in offline and online populations across multiple data sources and types and providing

evidence-informed recommendations for priority follow-up actions on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included. In addition, a **social media analyst/specialist** will create/develop:

- Process for collecting and analyzing social media data
- Strategy for developing and disseminating social media content and managing engagement
- Reports on social media activity, including recommendations for optimizing content and engagement

TASKS AND TIMEFRAME

Activities/tasks	Deliverables	Timeline
[TO BE SPECIFIED]		

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in ToR.
- Compliance with the established deadlines for submission of deliverables.
- Quality of deliverables.
- Demonstration of high standards of work based on experience and portfolio

QUALIFICATION REQUIREMENTS

All infodemic management personnel should have experience:

- Navigating scientific and organizational clearance
- Presenting and explaining results of research or evaluation and proposed interventions or public health actions
- Establishing SMART goals and objectives and systems for process and quality improvement
- Working across government and non-governmental organizations, especially across different levels from local to national
- Identifying and analyzing target audiences for interventions
- Analyzing quantitative and qualitative data

In addition to the above, a **social media analyst or specialist** should have experience:

- Developing and managing qualitative and quantitative social media data
- Identifying and evaluating data sources and platforms for limitations and weaknesses inherent to each source
- Performing audience analysis, platform/channel mapping, and persona development for target audiences and demographics
- Developing a social media strategy from content development, message and intervention testing, and message dissemination based on platform standards and best practice including the development of goals, objectives, and key indicators
- Using health communication science best practices

TERMS OF REFERENCE

INFODEMIC MANAGER - specialist with background in applied data analysis

[THESE ARE GENERIC TERMS OF REFERENCE TO SUPPORT IDENTIFICATION OF A PROFESSIONAL TO LEAD/HELP WITH SOCIAL LISTENING, MISINFORMATION MANAGEMENT AND DIGITAL ENGAGEMENT. THESE TORS WILL BE ADAPTED TO COUNTRY CONTEXT, REQUIRED TYPE AND VOLUME OF SUPPORT]

PURPOSE AND OBJECTIVES

All infodemic management personnel are expected to:

- Connect infodemic management and social listening goals and objectives to overarching program goals and strategies
- Detect key topics and narrative information deficits and open questions, and mis/disinformation in offline and online populations, across multiple data sources and types
- Ability to work with a multidisciplinary team to develop interventions and communications and research to understand behaviors
- Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
- Provide technical support for partners within government and across other organizations and provide surge support during a crisis or emergency
- Ability to work with program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strengthen health programs and systems
- Establish and strengthen relationships with other professionals working infodemic management to leverage expertise and expand the science of infodemic management

In addition to the above, a **data analyst or specialist** will be responsible for:

- Conducting a desk review to identify available and appropriate resources, tools, and templates and determine how to expand or adapt current routine mechanisms to gather additional necessary data and leveraging partnerships to identify potential additional data sources
- Developing or adopting taxonomies of classification for topic(s), including the development of Boolean search strings and an associated code book
- Creating and utilizing a standard operating procedure for collect, analyzing, and managing data used for thematic analysis and establishing mechanisms for transparent, bilateral sharing with collaborators and partners
- Establishing a system for weighting data sources against each other based on limitations and weakness of each data source
- Supporting message testing, audience mapping, and intervention development, using data to identify barriers to and facilitators of a desired health behavior or outcome for identified target audiences
- Identify evaluation data needs, collection and evaluation methods, an develop goals, objectives, and key indicators for evaluation of infodemic management process and employed interventions

DELIVERABLES

All infodemic management personnel will contribute to the development and delivery a regular (i.e. monthly, bi-weekly, etc.) report that outlines key topics and narrative information, deficits and open questions, and mis/disinformation in offline and online populations across multiple data sources and types and providing evidence-informed recommendations for priority follow-up actions on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included. In addition, a **data analyst/specialist** will create/develop:

- Process for collecting and analyzing qualitative and quantitative data sets
- Strategy for weighting data sources and conducting integrated analysis
- Data visualizations to show data trends over time including interpretation

TASKS AND TIMEFRAME

Activities/tasks	Deliverables	Timeline
[TO BE SPECIFIED]		

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in ToR.
- Compliance with the established deadlines for submission of deliverables.
- Quality of deliverables.
- Demonstration of high standards of work based on experience and portfolio

QUALIFICATION REQUIREMENTS

All infodemic management personnel should have experience:

- Navigating scientific and organizational clearance
- Presenting and explaining results of research or evaluation and proposed interventions or public health actions
- Establishing SMART goals and objectives and systems for process and quality improvement
- Working across government and non-governmental organizations, especially across different levels from local to national
- Identifying and analyzing target audiences for interventions
- Analyzing quantitative and qualitative data

In addition to the above, a **data analyst or specialist** should have experience:

- Accessing and collecting data from routine and ad hoc data sources and evaluating data collection tools to determine best use cases
- Evaluating data analysis techniques and approaches to different data sources and the soundness of research methodologies to address specific program or topic needs
- Developing and presenting trainings and seminars on data analysis systems and methodologies
- Using health communication science best practices

TERMS OF REFERENCE

INFODEMIC MANAGER - specialist with background in policy and partnerships development

[THESE ARE GENERIC TERMS OF REFERENCE TO SUPPORT IDENTIFICATION OF A PROFESSIONAL TO LEAD/HELP WITH SOCIAL LISTENING, MISINFORMATION MANAGEMENT AND DIGITAL ENGAGEMENT. THESE TORS WILL BE ADAPTED TO COUNTRY CONTEXT, REQUIRED TYPE AND VOLUME OF SUPPORT]

PURPOSE AND OBJECTIVES

All infodemic management personnel are expected to:

- Connect infodemic management and social listening goals and objectives to overarching program goals and strategies
- Detect key topics and narrative information deficits and open questions, and mis/disinformation in offline and online populations, across multiple data sources and types
- Ability to work with a multidisciplinary team to develop interventions and communications and research to understand behaviors
- Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
- Provide technical support for partners within government and across other organizations and provide surge support during a crisis or emergency
- Ability to work with program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strengthen health programs and systems
- Establish and strengthen relationships with other professionals working infodemic management to leverage expertise and expand the science of infodemic management

In addition to the above, a **policy and partnership specialist** will be responsible for:

- Collaborating, coordinating, and strengthening partnerships with a variety of community and health-focused organizations ranging from local and national levels to solicit feedback about a specified topic, identify technical assistance needs, and connecting organizations with appropriate communications resources, interventions, and tools
- Establishing mechanisms to build the capacity for healthcare workers, influencers, partners and trusted messengers to hare accurate, credible information and address concerns, information gaps, and misinformation effectively
- Developing mechanisms for community and social listening feedback loops and quickly responding to community questions and concerns
- Identifying key partners, colleagues, and policy makers to develop, implement and support interventions and who are conducting research to better understand information voids, perceptions, and opinions and their impact on the desired health behavior and connect to appropriate staff and team members
- Identifying policy gaps or bottlenecks that impact ability to assess infodemic issues and quickly react
- Coordinating internal communication to ensure alignment of key messages across all levels, local to national, as well as ensure that messages match the health authority's channels and style of communication
- Conduct policy analysis to determine existing gaps within a health system and determine potential impacts for new policies
- Leveraging existing partnerships to identify new relevant and reliable data and data sources and seeking out and build partnerships with organizations that specifically address needs to disproportionately affected or vulnerable populations

DELIVERABLES

All infodemic management personnel will contribute to the development and delivery a regular (i.e. monthly, bi-weekly, etc.) report that outlines key topics and narrative information, deficits and open questions, and mis/disinformation in offline and online populations across multiple data sources and types and providing evidence-informed recommendations for priority follow-up actions on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included. In addition, a **policy and partnership specialist** will create/develop:

- Reports on policy changes and updates related to topics of interest
- A tracking mechanism for engagements with partners and collaborators and subsequent actions or interventions implemented
- Recommendations for expanding partnerships and identifying partnership opportunities
- Policy briefs and reports

TASKS AND TIMEFRAME

Activities/tasks	Deliverables	Timeline
[TO BE SPECIFIED]		

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in ToR.
- Compliance with the established deadlines for submission of deliverables.
- Quality of deliverables.
- Demonstration of high standards of work based on experience and portfolio

QUALIFICATION REQUIREMENTS

All infodemic management personnel should have experience:

- Navigating scientific and organizational clearance
- Presenting and explaining results of research or evaluation and proposed interventions or public health actions
- Establishing SMART goals and objectives and systems for process and quality improvement
- Working across government and non-governmental organizations, especially across different levels from local to national
- Identifying and analyzing target audiences for interventions
- Analyzing quantitative and qualitative data

In addition to the above, a **policy and partnership specialist** should have experience:

- Building, establishing, and strengthening partnerships with aligned organizations and identifying partner organizations strengths and opportunities
- Developing community engagement strategies and activities
- Writing and editing policy brief, concept notes, and talking points, press releases and other external communication products for spokespersons and health officials using translated findings
- Working across multiple levels of government or organizations to ensure coherence of strategy, policy, materials, and messaging.
- Working with local media and conducting community outreach to target communities leveraging digital tools to quickly collect feedback

TERMS OF REFERENCE

INFODEMIC MANAGER - specialist with background in health communication

[THESE ARE GENERIC TERMS OF REFERENCE TO SUPPORT IDENTIFICATION OF A PROFESSIONAL TO LEAD/HELP WITH SOCIAL LISTENING, MISINFORMATION MANAGEMENT AND DIGITAL ENGAGEMENT. THESE TORS WILL BE ADAPTED TO COUNTRY CONTEXT, REQUIRED TYPE AND VOLUME OF SUPPORT]

PURPOSE AND OBJECTIVES

All infodemic management personnel are expected to:

- Connect infodemic management and social listening goals and objectives to overarching program goals and strategies
- Detect key topics and narrative information deficits and open questions, and mis/disinformation in offline and online populations, across multiple data sources and types
- Ability to work with a multidisciplinary team to develop interventions and communications and research to understand behaviors
- Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
- Provide technical support for partners within government and across other organizations and provide surge support during a crisis or emergency
- Ability to work with program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strengthen health programs and systems
- Establish and strengthen relationships with other professionals working infodemic management to leverage expertise and expand the science of infodemic management

In addition to the above, a **communication specialist** will be responsible for:

- Writing and editing content for a variety of stakeholders about findings informed by theory and strategic planning, including the development of content, key messages, talking points, press releases supporting spokespersons and health officials
- Conducting message, communication product, and campaign testing based on findings and coordinate with partners and colleagues to develop and disseminate
- Creating and maintaining a frequently asked questions webpage and associated communication products that include latest circulating rumors and mis- and disinformation
- Collaborating with community-based, health and social services focused, and news media and fact-checking organizations to build capacity of local partners, influencers, and trusted messengers to share accurate, credible information and address concerns, information gaps, and misinformation effectively
- Developing strategies for engaging communities and implementing social listening feedback loops to quickly identify community concerns, information gaps, and misinformation to adjust communications and interventions quickly
- Establishing and expanding bilateral networks of trusted messengers, influencers, community leaders and government partners to amplify content and interventions developed and provide feedback to better understand information voids, perceptions, and opinions and their impact on the desired health behavior
- Supporting health program staff to design and implement interventions, providing technical assistance in both communication, outreach, and evaluation of effectors

DELIVERABLES

All infodemic management personnel will contribute to the development and delivery a regular (i.e. monthly, bi-weekly, etc.) report that outlines key topics and narrative information, deficits and open questions, and mis/disinformation in offline and online populations across multiple data sources and types and providing evidence-informed recommendations for priority follow-up actions on detected high-risk signals. Development of specialized reports specific to population, health topic, or region may also be included. In addition, a **communication specialist** will create/develop:

- Webpage and mechanism for providing public with answers to most common questions and addressing circulating misinformation
- Prepared responses for tip lines and community and media engagement activities
- Comprehensive communications campaigns including key messages, consumer and healthcare provider-specific content and associated visuals and products
- Crisis communication plans to address specific infodemic related facets

TASKS AND TIMEFRAME

Activities/tasks	Deliverables	Timeline
[TO BE SPECIFIED]		

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS

The performance of work will be evaluated based on the following indicators:

- Completion of tasks specified in ToR.
- Compliance with the established deadlines for submission of deliverables.
- Quality of deliverables.
- Demonstration of high standards of work based on experience and portfolio

QUALIFICATION REQUIREMENTS

All infodemic management personnel should have experience:

- Navigating scientific and organizational clearance
- Presenting and explaining results of research or evaluation and proposed interventions or public health actions
- Establishing SMART goals and objectives and systems for process and quality improvement
- Working across government and non-governmental organizations, especially across different levels from local to national
- Identifying and analyzing target audiences for interventions
- Analyzing quantitative and qualitative data

In addition to the above, a **communication specialist** should have experience:

- Working within a health authority, organization, or government's communication channels, adhering to style guidelines, coordinating with other communications staff across organizations to ensure coherence of strategy, materials, and messages
- Utilizing best practices in plain language, human-centered design principles, and health communication science
- Navigating social media and listening platforms and tools to collect data, mapping preferred channels and platforms for reach different demographics, and
- Performing audience analysis and segmentation, developing personas, and developing targeted outreach and communication strategies for specified target audiences
- Developing or supporting the development of interventions that leverage social norms or social norm modeling and address individual, community and societal-level factors affecting trust and resilience
- Conducting literature reviews and analyses

Competencies for infodemic management staff

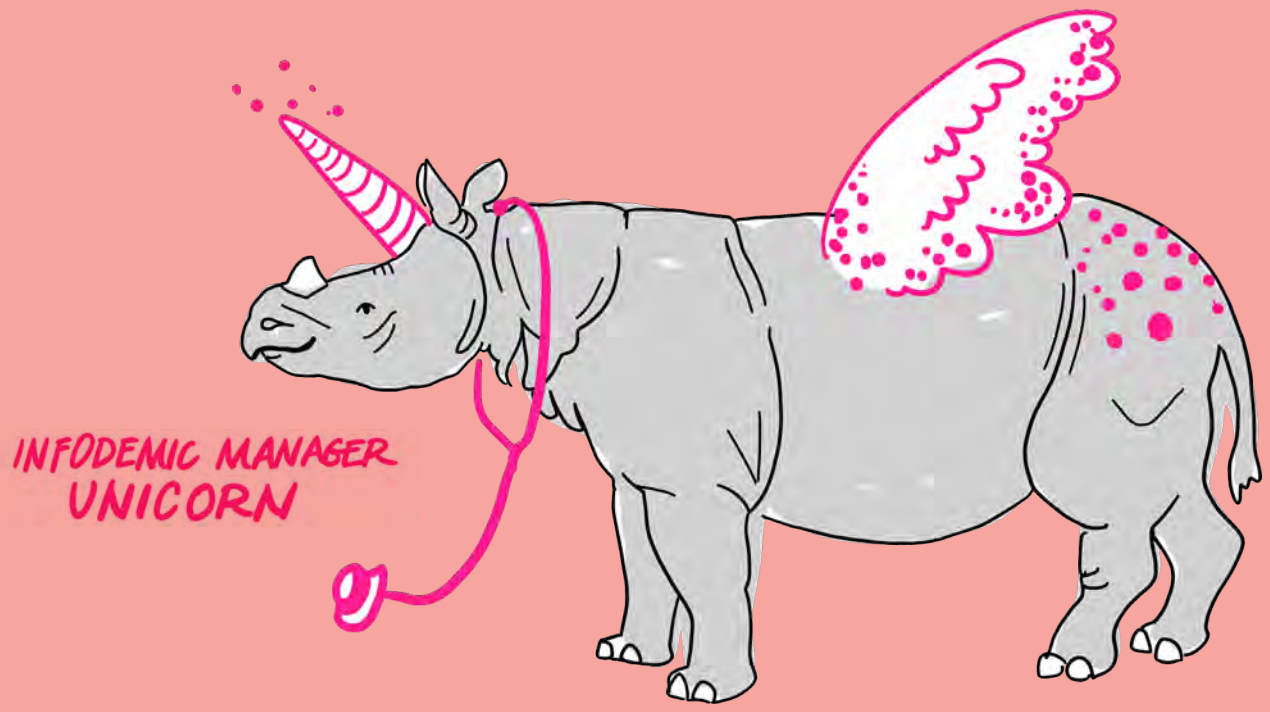
Social listening and integrated analysis	
Planning (Landscape analysis, goals/ objectives, analysis planning, setting up systems)	Develop and utilize standard operating procedures to collect, analyze and utilize information on a topic across various data sources
	Map preferred channels of communication with focus on vulnerable groups.
	Perform audience analysis and segmentation
	Identify potential data sources and evaluate for limitations and weakness inherent to each individual source or in the context of other sources to be used
	Conduct literature reviews and analysis related to topic
	Establish SMART goals and objectives
	Able to develop or adopt a taxonomy of classification for topic, including the development of boolean search strings and associated code book
	Establish networks and connections to appropriate partners or staff members responsible for available data sources
	Ability to connect infodemic management and social listening work goals and objectives to overarching program goals and strategies
	Ability to evaluate data collection and social listening tools and platforms to determine best use cases
	Conduct desk review to identify available and appropriate resources, tools, and templates
	Establish criteria and approach for determining and applying threat or impact matrix to analyze topic and themes to adapt program needs
	Establish transparent, bilateral data sharing mechanisms with collaborators and partners
	Determine how to weight various data sources against each other based on programmatic priorities
Data Collection	Navigate social listening tools and platforms to collect appropriate data
	Ability to access and collect data from routine data sources
	Ability to analyze both quantitative and qualitative data
	Develop a system for data management and organization
Integrated Analysis	Analyze and evaluate individuals' behaviours, focusing on personal, social and environmental determinants
	Detect key topics and narrative, information deficits and open questions, and mis/ disinformation in offline and online populations, across multiple data sources and types
	Identify, analyze and evaluate the evidence-basis of the main narratives and claims over health issues circulating within the population
	Facilitate a collaborative process including staff with specialization in communications, behavioral science, informatics, data management, and epidemiology to contribute to integrated analysis
	Determine how to apply pre-determined threat or impact matrix to identified themes
	Facilitate a collaborative process including staff with specialization in communications, behavioral science, informatics, data management, and epidemiology to contribute to integrated analysis
	Ability to discern appropriate data analysis techniques and approaches to different data sources and to address specific program needs

Delivery of high quality health information and programming	
Strategic Planning/ Theory & Framework Application	Provide evidence-informed recommendations for priority follow-up actions on detected high-risk signals
	Apply analytical and evaluative frameworks to assess the quality and the risk of mis/ disinformation to behaviours
Report Development	Ability to write and edit content for a variety of stakeholders about findings informed by theory and strategic planning including informing graphic design elements and visualizations
	Ability to adapt or adjust threat or impact level determinations based on programmatic priorities and appropriate behavioral theory/framework
	Familiarity with program and policy to offer realistic short-term and long-term recommendations or opportunities for action that strength health programs and systems
Report Dissemination/ Communicating Findings	Liaise closely with the HQ and regional counterparts ensuring coherence of strategy, materials and messages
Action Planning	Identify targets for infodemic interventions from policy and health system to community and individual levels
Strategies, recommendations and intervention development	
Design	Identify barriers to and facilitators of a desired health behavior or outcome in the target population
	Define the knowledge or desired health behavior and identify evidence-based or emerging best practices for intervention development
	Clearly define target audiences and map available and applicable data or information
	Develop persona for target audiences and demographics for interventions
	Identify the most appropriate model of change to apply to intervention development and develop clear process and outcome indicators
	Develop and implement interventions that address individual, community, cultural and societal-level factors affecting trust and resilience
	Familiarity with human-centered design principles
	Experience pre-testing or piloting new or adapted interventions in the field with target populations
	Identify appropriate partners and stakeholders to enhance the development of interventions
	Ability to interpret latest scientific research, literature on evidence base and translate it into interventions

Communications (Content Development)	Ability to craft content, key messages and talking points about identified themes
	Coordinate with communications, graphic design, and social media partners or colleagues to develop and test a communication campaign or products
	Experience with health authority's channels and style of communication
	Ability to support spokespersons and health officials through the development of talking points, press releases, and other external communications
	Identify means for internal communication of key messages to ensure message alignment and cohesion
	Conduct message testing with target audiences, familiarity with message testing design, theories, and methods including conducting A/B testing and focus groups
	Familiarity with different social media platform standards and best practices for message dissemination
	Knowledge of health communication science best practices
	Ability to navigate scientific and organizational clearance processes
Outreach and Engagement/ Technical Assistance	Identify and establish partnership with stakeholders and networks that can serve as amplifiers of content and interventions
	Ability to explain and present process, findings, and interventions to different audiences
	Provide customer service support for internal and external partners for acute infodemic management needs
	Ability to quickly conduct outreach to target communities and leverage digital tools to quickly collect feedback and adjust interventions and communications
Research	Determine how to expand or adapt current routine surveys or surveillance mechanism to gather additional necessary data
	Identify partners and external stakeholders conducting research to better understand information voids, perceptions, and opinions and their impact on the desired health behavior
	Ability to work with behavioral scientists on the development of research, testing interventions, and understanding behaviors
	Ability to discern the soundness of research methodologies and approaches
Implementation	Ability to identify existing systems, structures, and programs to implement designed interventions
	Determine resources, tools, and personnel needed to implement and monitor interventions
	Coordinate with health program staff to implement designed interventions and provide customer service

Promotion of resilience to misinformation and other infodemic harms	
RCCE	Apply risk communication principles, behavioral science theories and model, and people-centered approaches to the development of health communications campaign for multiple audiences
	Identify and strengthen networks of trusted messengers and influencers
	Engage local media in providing tailored messages and accurate, credible information on health topics
	Designing community engagement strategies and activities (i.e. social inoculation)
	Develop community and social listening feedback loops, including creation of a tipline or email for concerns from community about information gaps and misinformation
	Creating and disseminating appropriate communication products (digital and print)
	Develop a mechanism for responding quickly to community questions and concerns
	Provide branded and unbranded content and materials that can be adapted by influencers and trusted messengers
	Create and maintain a frequently asked questions webpage and communication products, including latest circulating rumors and mis/disinformation
	Build capacity of healthcare workers to have empathetic conversations based on motivational interviewing best practices with patients, including listening to patients concerns and address information gaps and misinformation
	Develop strategies that leverage social norms and social norm modeling to promote healthy or desired behaviors
Partnership	Establish and strengthen partnerships with medical and healthcare associations
	Establish and strengthen partnerships with news media and fact checking organizations
	Collaborate with community arts and cultural organizations
	Collaborate with faith-based organizations
	Collaborate with health and social services focused organizations
	Collaborate with family and youth focused organizations
	Establish and strengthen partnerships with technology companies
	Extend and strengthen partnerships across government agencies, especially across different levels of government from local to national
	Seek out and build partnerships with organizations that specifically address needs of disproportionately affected or vulnerable populations
	Leverage existing partnerships to identify new relevant and reliable data and data sources

Technical Assistance	Build capacity of partners, influencers, and trusted messenger to share accurate, credible information and address concerns, information gaps, and misinformation effectively
	Assist partners and local level of government in implementation of interventions and campaigns
	Provide individualized consultations and feedback on infodemic-related issues among partners within government and appropriate NGOs
	Support local government and organizations in conducting rapid community assessments to better understand needs of target audiences and necessary interventions
	Offer surge support during a crisis or emergency
	Build capacity of other staff within the organization or government to conduct infodemic management activities and provide support to infodemic management unit
Strengthening of systems for preparedness, prevention and response	
M&E	Identify goals and objectives for evaluation of interventions and develop key indicators
	Ability to conduct rapid assessments about a specific topic or intervention
	Identify evaluation data needs and collection methods
	Ability to conduct research and evaluation, including ability to integrate participatory methods
	Ability to explain and present evaluation findings
	Identify audiences and plans for dissemination
	Develop a system for process improvement that is iterative and ongoing
Policy	Identify key policy makers and organizations within or supporting health system
	Build partnerships to strengthen internal and external policies related to infodemic management
	Identify policy gaps or bottlenecks that impact ability to assess infodemic issues and quickly react
	Ability to write policy briefs and concept notes to translate findings for key stakeholders and the public
	Conduct policy analysis to determine existing gaps within a health system and determine potential impacts for new policies
Capacity Building	Identify types of stakeholders, partners, and colleagues necessary to support both diagnostics and interventions for infodemics
	Develop and present trainings and seminars about what infodemic management is to others within health system
	Establish and maintain networks and relationships to expand the science of infodemic management and leverage expertise internally and externally
	Advocate for system and policy improvements to address identified issues
Quality & Process Improvement	Plan (identify goals and action needed)
	Do (implement and do the action, make modifications as needed)
	Check (Check results and implications of the improvement, use metrics and measures) and
	Act (act on observations derived from process and improve current strategies)



9789240081499
9 789240 081499