Risk Communication and Community Engagement

Data Handbook

Collective service

June 2022

RCCE Data Handbook

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RCCE DATA HANDBOOK

CONTENTS

ABBREVIATIONS AND ACRONYMS

BI	Behavioural insights
BeSD	Behavioural and social drivers
COVID-19	Coronavirus disease 2019
IFRC	International Federation of the Red Cross and Red Crescent Societies
KAP	Knowledge, attitudes and practice
LSHTM	London School of Hygiene and Tropical Medicine
M&E	Monitoring and evaluation
OECD	Organisation for Economic Co-operation and Development
RBM	Results-based management
RCCE	Risk communication and community engagement
SOP	Standard operating procedure
UNICEF	United Nations Children’s Fund
WHO	World Health Organization

I. INTRODUCTION

The purpose of this handbook is to provide an outline description of the processes involved in the use of data for risk communication and community engagement (RCCE) for COVID-19, and to provide links to useful resources. The handbook will be of interest to governments, United Nations agencies, non-governmental organizations, civil society, and academic and community actors. It can also be used for regional and global RCCE. While the handbook has been written specifically for the response to COVID-19, it is hoped that it will be useful for responses to other emergency situations.

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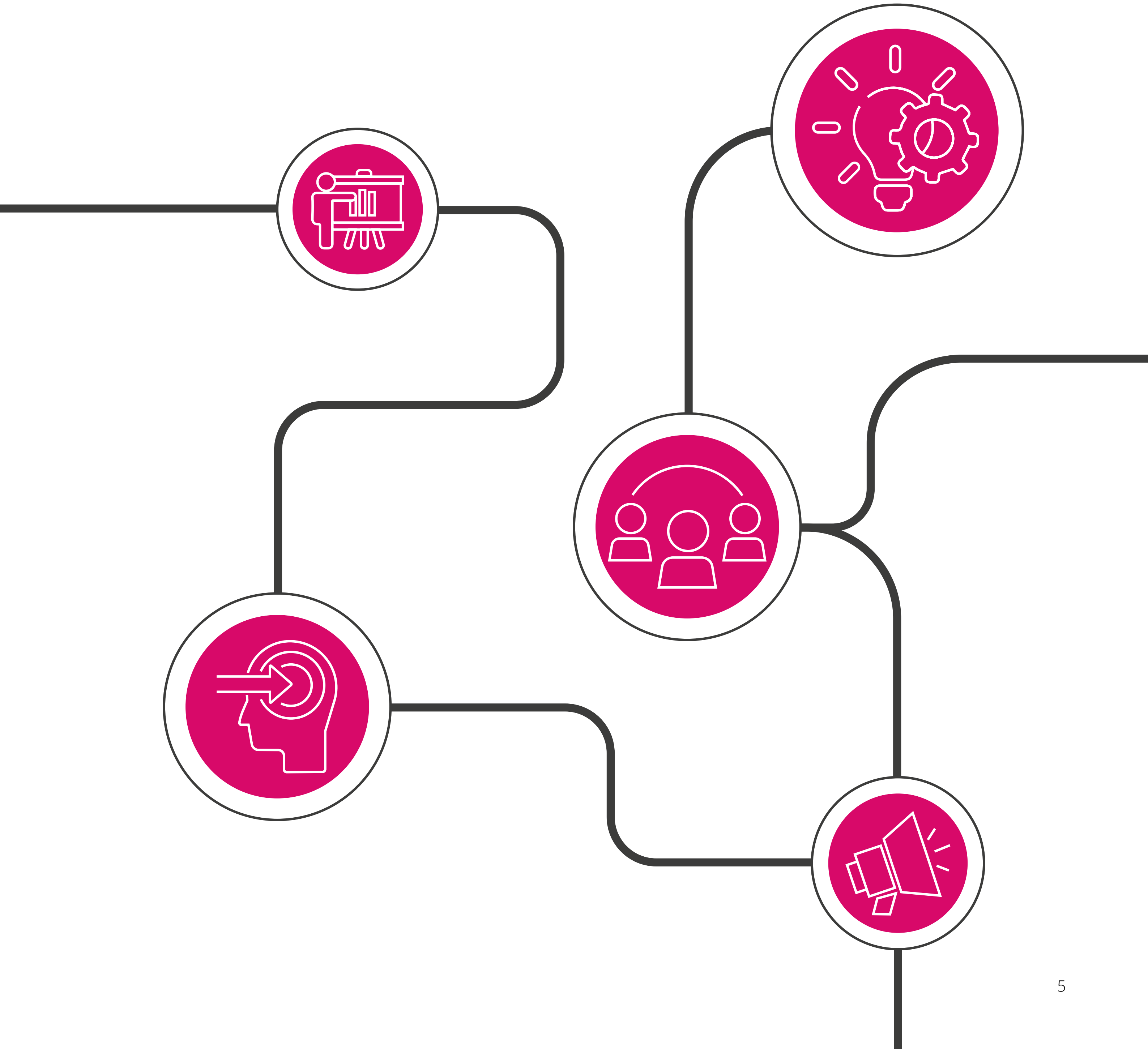

RISK COMMUNICATION AND COMMUNITY ENGAGEMENT

From the start of the COVID-19 crisis, RCCE has been recognized as a central pillar of the response. RCCE is essential to the successful delivery of both medical and non-medical interventions. It encompasses everything from behaviour change to countering misinformation and supporting community leadership. RCCE is a cross-cutting priority that requires a broad range of humanitarian and public health partners to work together with governments and affected communities. As the world tackles the upcoming challenges of the ongoing crisis, including the roll-out of an unprecedented global immunization campaign, RCCE is essential to success. RCCE comprises two broad workstreams: (1) risk communication; and (2) community engagement. They are mutually supportive of each other in the effort to put communities at the heart of the response to COVID-19.

THE COLLECTIVE SERVICE

The Collective Service is a collaborative partnership between the International Federation of Red Cross and Red Crescent Societies (IFRC), the United Nations Children’s Fund (UNICEF) and the World Health Organization (WHO), which has active support from the Global Outbreak Alert and Response Network (GOARN), and key stakeholders from public health and humanitarian sectors. It was launched in June 2020, after endorsement by the Inter-Agency Standing Committee Principals in April 2020, and with support from the Bill and Melinda Gates Foundation. The aim of the Collective Service is to ensure that the complementary strengths of all partners are supported to deliver the greatest impact, and to bring together a wide range of organizations involved in RCCE policy, practice and research to provide practical support to those delivering on the ground.

WHO SHOULD USE THIS HANDBOOK

This handbook will be of interest to governments, academic institutions, United Nations agencies, non-governmental organizations, civil society and community actors working in the area of RCCE.

HOW TO USE THIS HANDBOOK

This handbook can be used to understand the role of social science, monitoring and evaluation (M&E) and information management in supporting RCCE programming. It provides an outline description of the processes involved in the use of data for RCCE programming. For a more comprehensive description of these processes, links to resources are provided. Please note that providing links to these resources does not imply that either the Collective Service or any of its constituent agencies endorses the content of these links.

Technical support on data is available through the Collective Helpdesk.[1] The Collective Helpdesk was launched by the Collective Service to provide coordinated guidance and support to RCCE practitioners on COVID-19 response. Since the beginning of the pandemic, it was identified that there is a need to strengthen the capacity of national and local staff to collectively engage with affected communities. Through its collaborative efforts, the Collective Helpdesk is providing support in thematic areas that have growing needs and limited capacity on the ground. The Collective Helpdesk can be contacted for data queries and advice at: helpdesk@rcce-collective.net.

Training resources are also available. The Collective Service training package on using social science evidence for community engagement and/or communication activities recognizes that social and behavioural factors are critical determinants for preparedness and response actions in humanitarian and public health emergencies.

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[1] See <www.rcce-collective.net/services/collective-helpdesk/>.

Both qualitative and quantitative social science research can help communication practitioners strengthen community awareness, preparedness and response by understanding the context and tailoring strategies and approaches to people's needs, capacities and (existing) resilience mechanisms. The Competency Framework for Social Science in Risk Communication and Community Engagement was therefore collaboratively developed in early 2021 to systematically assess the gaps and enhance a number of skills, knowledge, attitudes and abilities that practitioners require to operationalize social science in humanitarian and public health emergency settings. The current training package consists of 7 modules and 24 sessions which cover the full spectrum of operationalizing social sciences during an emergency – from understanding the need for this approach, to systematic (mixed-methods) data collection activities and knowledge translation, to tracking the uptake of socio-behavioural evidence.

To access training content, please visit the 'Training Catalog' page on the Collective Service website.[2]

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[2] See <www.rcce-collective.net/resources/trainings/>.

II. ETHICS AND PROTOCOLS

In this section resources are provided on ethics, RCCE data principles and protocols to support data-driven RCCE. These are important documents to consult at the planning stage of any work involving data for RCCE, to ensure that the work undertaken will be on a sound ethical and operational footing.

RCCE puts communities at the core of the responses to the risks they are facing. RCCE data activities should be conducted to support community-led action. Participation is both a right and a means to effective data use. Seek to include the most vulnerable and marginalized. Participatory methods should be valued for RCCE. It is important to ensure feedback to communities. This is necessary both to maintain the dignity of communities and to ensure that 'extractive approaches' to data use are not employed. Researchers should avoid the 'aura of objectivity', where science is purported to provide a certainty of knowledge to the disdain of 'non-scientific' knowledge. Avoid asymmetrical power relations between researcher and interviewee.[3]

ETHICS

The IFRC uses its seven fundamental principles as the basis for the movement's action at all times.

The ethics of humanitarian action have been further articulated in the 'Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief'.[4]

In collaboration with New York University, UNICEF has developed the Responsible Data for Children (RD4C) initiative.[5] The goal of the initiative is to develop field-informed, evidence-based public goods, tools and best practice guidance that empower front-line practitioners and programme managers to make informed decisions about children's data. RD4C includes guidance on how to design, support and implement programmes with these risks in mind, and how to promote appropriate data practices and systems. RD4C is cross-sectoral, working with all UNICEF sections.[6]

In February 2020, WHO established an international Working Group on Ethics and COVID.[7] The group develops advice on key ethical questions that WHO Member States need to address.[8] The working group builds on the 2017 WHO 'Guidelines on Ethical Issues in Public Health Surveillance'.[9] This document, one of the first of its kind, is recommended as a useful reference for RCCE and the ethics of data collection. Another useful resource is the Organisation for Economic Co-operation and Development (OECD) 'Tools and Ethics for Applied Behavioural Insights'.[10]

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[3] Oxford University Press, *Oxford Dictionary of Sociology*, Oxford University Press, Oxford, 1998.

[4] International Federation of Red Cross and Red Crescent Societies, *Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief*, IFRC, Geneva, June 2022, <www.ifrc.org/publicat/conduct/index.asp>, accessed 11 November 2022.

[5] See <https://rd4c.org/>.

[6] UNICEF Sharepoint, 2020, <https://unicef.sharepoint.com/teams/PD-RD4C/?CT=1571660944787&OR=OWA-NT&CID=1c717592-fe07-b7f3-27e1-fddafa57c0fc>.

[7] See <www.who.int/teams/health-ethics-governance/diseases/covid-19>.

[8] World Health Organization, Ethics and COVID-19, WHO, 2020, <www.who.int/teams/health-ethics-governance/diseases/covid-19>, accessed 11 November 2022.

[9] World Health Organization, *Guidelines on Ethical Issues in Public Health Surveillance*, WHO, Geneva, 2017, <https://apps.who.int/iris/bitstream/handle/10665/255721/9789241512657-eng.pdf>, accessed 11 November 2022.

[10] Organisation for Economic Co-operation and Development, *Tools and Ethics for Applied Behavioural Insights*, OECD Publishing , Paris, 18 June 2019, <www.oecd.org/regreform/tools-and-ethics-for-applied-behavioural-insights-the-basic-toolkit-9ea76a8f-en.htm>, accessed 11 November 2022.

STANDARD OPERATING PROCEDURES

The RCCE experience during the Ebola outbreak in West Africa underlined the importance of partner organizations adopting standard operating procedures (SOPs) for RCCE.[11] An RCCE SOP can be understood as a set of step-by-step instructions to help workers carry out routine operations on community engagement and risk communication. Preferably the SOPs should specifically relate to risk communication or community engagement in a pandemic or disease outbreak and should specify a set of actions and standards for community engagement or risk communication.

SOPs for data collection and use are particularly important to guide staff in dealing with the myriad challenges of operating in a pandemic. REACH has produced comprehensive SOPs for data collection during COVID-19.[12]

Conducting RCCE data collection in a pandemic presents both ethical and practical challenges. Writing clear SOPs can help guide staff through these challenges and ensure they act appropriately. SOPs can ensure not only the protection of the community but also the protection of staff from any risk of COVID-19 transmission.

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[11] Gillespie, A.M., et al., 'Social Mobilization and Community Engagement Central to the Ebola Response in West Africa', *Global Health, Science and Practice*, vol. 4, no. 4, 626–646, 2016, <https://pubmed.ncbi.nlm.nih.gov/28031301/>, accessed 11 November 2022.

[12] REACH, *SOPs for Data Collection during COVID-19*, REACH, Geneva, April 2020, <www.reachresourcecentre.info/wp-content/uploads/2020/05/DataCollectionSOPCOVID-19.pdf>, accessed 11 November 2022.

III. RESEARCH AND ASSESSMENT

Asking relevant and timely questions is at the core of RCCE Data for Action. Social science provides a methodology for identifying the questions to ask and how to answer them. The Collective Service has developed a training course to help practitioners operationalize social science insights for their work. Each session of the training package answers one or more of the following key questions in social science research, to move from data to action (*see Figure 1*).

FIGURE 1. DATA TO ACTION – KEY QUESTIONS IN SOCIAL SCIENCE RESEARCH, COLLECTIVE SERVICE SOCIAL SCIENCE TRAINING PACKAGE, 2022

DATA TO ACTION:

Key questions in social science research

1. What information is needed?

2. Who needs this information?

3. Does this information already exist? Is there a related needs assessment or study?

4. Who can collect this information?

5. What methodology and tools should be used to collect and analyse this information?

6. How to ensure that this information goes back to communities? To inform community-level actions and decision-making of the broader response?

7. How to ensure that the information is used to make operational and/or strategic decisions?

8. How to track the information used to ensure that it effectively contributes to operational and strategic priorities?

The full training package is available on the Collective Service website.[13]

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[13] See <www.rcce-collective.net/training/social-science-training/>.

FORMATIVE RESEARCH

“Formative research is the process by which researchers define a community of interest or how to access that community, and describe the attributes of the community that are relevant to a specific issue.”[14]

Establishing a trusting relationship with the community is key to RCCE. Formative research should be understood as both an act of community outreach and as a means to establish research parameters. The information gathered during formative research will enable researchers to plan field work and to identify and address any barriers to operations.

RCCE ASSESSMENT

RCCE assessments are broadly based on the rapid assessment methodology. They involve gathering evidence so as to provide a reliable basis for the analysis of a situation and decisions on next steps. Rapid assessments usually involve collecting some primary data. If possible, rapid assessments will collect both quantitative and qualitative data and may even employ sampling methods. However, in many cases the data collection is limited by both time and field circumstances. Rapid assessments are often iterative – i.e., they collect data over several phases. The UNICEF Regional Office for South Asia has produced a guide to ‘Undertaking Rapid Assessments in the Context of COVID-19’.[15] The Water, Sanitation and Hygiene (WASH) Cluster also has a COVID-19 RCCE Rapid Assessment Tools resource page.[16]

BEHAVIOURAL AND SOCIAL DRIVERS

A key question for any social intervention is: Why do people do what they do? How can we influence it? The behavioural drivers model and the behavioural and social drivers (BeSD) model have been developed to address these questions in a practical way. In 2019, UNICEF published ‘The Behavioural Drivers Model’.[17] This document outlines the theoretical approaches to work on behaviour and social drivers. The BeSD model facilitates the development of action plans that are adapted to the reality and target behaviours that are amenable to change. UNICEF has developed general guidance for ‘Measuring Results in Social and Behaviour Change Programming’.[18] This document goes through the whole process of data use for social and behaviour change and is a very useful complement to the resources listed here.

How BeSD is applied can vary according to the intervention and the theoretical framework being used. The Collective Service has developed the ‘Socio-Behavioural COVID-19 RCCE Framework’.[19] The framework looks at social and behavioural drivers in terms of information and communications, knowledge and understanding, perceptions, practices, social environment and structures. The WHO guidance on the ‘Acceptance and demand for COVID-19 vaccines: communications plan template’ advises five steps in applying BeSD for encouraging vaccine uptake.[20]

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[14] Centers for Disease Control and Prevention, *National HIV Behavioral Surveillance System in Men Who Have Sex with Men – Round 4: Formative Research Manual*, Centers for Disease Control and Prevention, Atlanta, Georgia, USA, 20 December 2013, <www.cdc.gov/hiv/pdf/statistics/systems/nhbs/nhbs-msm4-formativeresearchmanual.pdf>, accessed 11 November 2022.

[15] United Nations Children’s Fund, *Undertaking Rapid Assessments in the Context of COVID-19*, UNICEF Regional Office for South Asia, Kathmandu, 2021, <www.unicef.org/rosa/media/15761/file/Undertaking Rapid Assessments in the COVID-19 context - Main report.pdf>, accessed 11 November 2022.

[16] See <https://washcluster.net/node/497>.

[17] United Nations Children’s Fund, *The Behavioural Drivers Model*, UNICEF Middle East and North Africa Regional Office, Amman, 2019, <www.unicef.org/mena/reports/behavioural-drivers-model>, accessed 11 November 2022.

[18] United Nations Children’s Fund, *Measuring Results in Social and Behaviour Change Communication Programming*, UNICEF Eastern and Southern Africa Regional Office, Nairobi, October 2020, <https://drive.google.com/file/d/1uPT8ycO7U1mtpriK40_2Gn-R5ZYjF0ZB/view>, accessed 11 November 2022.

[19] Collective Service for Risk Communication and Community Engagement, *COVID-19 Behaviour Change Framework*, Collective Service for Risk Communication and Community Engagement, Geneva, 2021, <www.rcce-collective.net/resource/covid-19-behaviour-change-framework/>, accessed 11 November 2022.

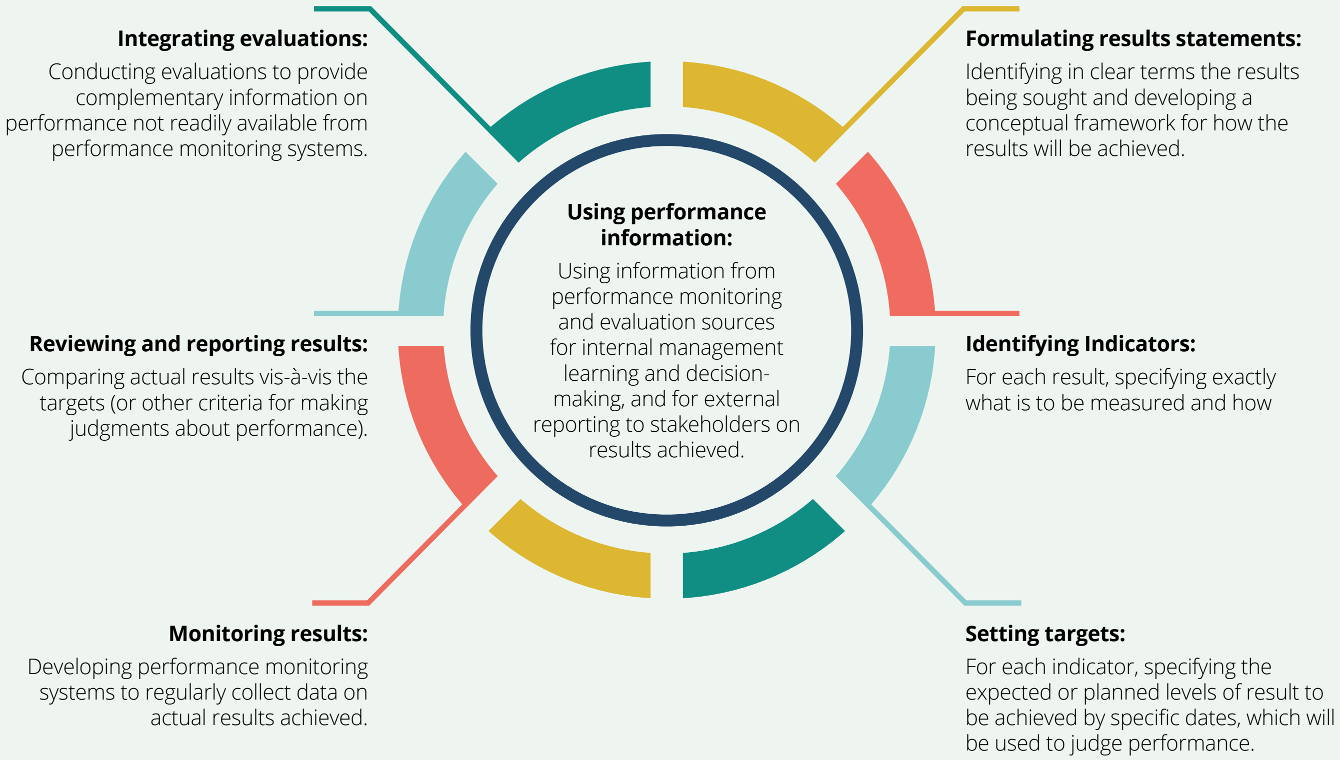
[20] World Health Organization, *Acceptance and demand for COVID-19 vaccines: communications plan template*, WHO, Geneva, 31 January 2021, <www.who.int/publications/i/item/WHO-2019-nCoV-vaccination-demand_planning-template-2021.1>, accessed 11 November 2022.

IV. RESPONSE PLANNING

RESULTS-BASED MANAGEMENT

Results-based management (RBM) is a strategy for managing an intervention through the identification and measurement of key results. Traditionally programme management was centred on inputs, activities and processes. RBM introduced a people-centred approach, which looks at an intervention in terms of its benefit to the target population. RBM requires the continual collection of information on the intervention to monitor progress. This is done to help management make adjustments to the intervention where necessary.

FIGURE 2. MAIN CHARACTERISTICS OF RBM



Integrating evaluations:
Conducting evaluations to provide complementary information on performance not readily available from performance monitoring systems.

Formulating results statements:
Identifying in clear terms the results being sought and developing a conceptual framework for how the results will be achieved.

Using performance information:
Using information from performance monitoring and evaluation sources for internal management learning and decision-making, and for external reporting to stakeholders on results achieved.

Reviewing and reporting results:
Comparing actual results vis-à-vis the targets (or other criteria for making judgments about performance).

Identifying Indicators:
For each result, specifying exactly what is to be measured and how

Monitoring results:
Developing performance monitoring systems to regularly collect data on actual results achieved.

Setting targets:
For each indicator, specifying the expected or planned levels of result to be achieved by specific dates, which will be used to judge performance.

Source: UN Habitat (2013)

THEORY OF CHANGE

A first step in RBM is to develop a clear idea of how the desired changes will be achieved, known as a theory of change. A theory of change can be used to help think critically about what is required to bring about a desired change.[21] In reference to the context, it describes how the desired change will occur step by step. This is often done through a series of conditional statements – for example, if X is done, then Y will happen, leading to Z. The Hygiene Hub[22] has a briefing document, 'What is a theory of change?'.[23] The Collective Service 'Risk Communication and Community Engagement Indicator Guidance for COVID-19' includes a detailed theory of change that can be used when developing an RCCE programme.[24]

RESULTS FRAMEWORK

The theory of change can then be formalized in a results framework. This helps to clarify the structure of the theory of change, to be more specific about what is meant by each result. This formalization facilitates measurement.

A results framework provides a clear definition of results – i.e., what is expected to be achieved and when. This enables RCCE actors to focus on measurable objectives, monitor progress and manage programme implementation. Results frameworks are a key tool for effective programme implementation.[25]

As an emergency situation evolves, so does the information needed to respond to it. It is a good idea to develop results frameworks that identify the information that will be needed at the preparedness, response and recovery stages of the emergency. Indicators on systems-building are usually pertinent for all three stages. Indicators on behaviour change come into sharper focus during response and recovery. An example of a results framework which allows the selection of indicators for each stage of an emergency response can be found here.

Different terminology is used in results frameworks. In general, they are structured according to assumptions, inputs, activities, outputs, outcomes and impact. Examples of these can be found in the theory of change above. Special mention is made here of assumptions, as they often do not receive due attention in M&E.

Assumptions

Assumptions are the conditions that need to be in place for the theory of change to succeed. They are the foundation of programme planning. Assumptions will vary according to the context and according to the theory of change. Broadly speaking, there are four types of assumptions:

- Assumptions about the causal links between outcomes at different levels
- World view assumptions about drivers behind a change
- Assumptions about the belief systems in a society, which inform judgements about what is appropriate and feasible in a specific context
- Assumptions about the context in which your project will operate.

It is important to monitor whether the assumptions of the programme continue to hold throughout the response. If an assumption no longer holds, then there should be a review to consider which programme adaptations are necessary. How programme assumptions are monitored will depend on the assumption itself. Assumptions may be general statements on a situation – for example, that humanitarian actors will continue to have access to a crisis-affected area. Partners and staff, particularly those in field offices, can confirm every three months whether they continue to have access. Alternatively if the programme assumptions are more complex, indicators and formal data collection methods can be used to monitor them.

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[21] UN Habitat, *UN Habitat Results Based Management Handbook*, UN Habitat, Nairobi, 2013, p. 17.
[22] See <www.hygienehub.info/en/covid-19>.
[23] Freeman, M., What is a 'theory of change' and how does it inform COVID-19 program monitoring and evaluation?, Hygiene Hub, 2 July 2020, <https://resources.hygienehub.info/en/articles/4220162-what-is-a-theory-of-change-and-how-does-it-inform-covid-19-program-monitoring-and-evaluation>, accessed 11 November 2022.
[24] Collective Service for Risk Communication and Community Engagement, *Risk Communication and Community Engagement Indicator Guidance for COVID-19*, Collective Service for Risk Communication and Community Engagement, Geneva, 2022, <www.rcce-collective.net/resource/risk-communication-and-community-engagement-indicator-guidance-for-covid-19/>, accessed 11 November 2022.
[25] World Bank, *Designing a results framework to achieve results*, World Bank, Washington, D.C., 2012.

Impact
Finally, note that impact is the ultimate good that comes from the RCCE actions. For example, in the theory of change presented above, RCCE is necessary to achieve the impacts of reduced transmission, morbidity and mortality from COVID-19. RCCE is understood to contribute to these impacts. Guidance on indicators to measure impact results is provided by the WHO 'COVID-19 Strategic Preparedness, Readiness and Response Plan 2022'.[26]

INDICATORS

Indicators are used to measure results in key programme areas – for example, whether the community understands risk information. The data from an indicator indicates what the situation is – for example, a survey may find that 75 per cent of community members understand key risk information. Indicator data are very useful, as they provide an easy-to-use summary of the situation. However, indicators should not be taken to be an exact representation of the situation. To continue with the example, 75 per cent may not be a reliable number, as the survey was not conducted in districts that were cut off by flooding. Data from the indicators should always be discussed and interpreted. As detailed below under 'Triangulation', it is best to do this with other types of information.

Indicators should be SMART: Specific, Measurable, Achievable, Relevant and Time-bound.

The Collective Service has developed 'Risk Communication and Community Engagement Indicator Guidance for COVID-19' to monitor progress in implementing activities and to evaluate the RCCE response to COVID-19.[27] Detailed guidance on a menu of 34 indicators is provided, with detail on how the indicator can be used in planning, the method of computation, the recommended data collection methods, how to analyse the data, and the indicators that can be chosen according to the needs and circumstances of the RCCE programme. The Collective Service is currently also developing RCCE Indicator Guidance for Ebola. Please contact the Collective Service for more information. Another good resource is the 2020 UNICEF 'COVID-19 RCCE Indicator Guidance Package'.[28]

Finally, IndiKit is a website with a very easy-to-use format for finding indicators on social and behaviour change and other areas.[29]

TARGETS

Targets for indicators must be specific. For quantitative targets this will usually be a percentage. Targets should have a time frame. This will usually be a date by which the target is expected to be achieved. In emerging situations, for some indicators it may make sense to set short-term targets that can be revised once the situation becomes more stable. For some indicators longer-term targets can be set. Targets should be ambitious and realistic. In a pandemic responders want to help as many people as much as possible. Setting unrealistic targets is not a good way to do this. Seasonal variations should be taken into account. Research can be done into the achievements of organizations with comparable capacity. Targets need to bear in mind the complete theory of change. Therefore, achieving behaviour change is only realistic if RCCE outputs have been achieved. These are only realistic if the activities and inputs have been achieved. Possible constraints to overall performance should be considered when setting targets. Take time lags into account: It will sometimes take time for leading indicators (such as improved knowledge) to translate into lagging indicators (such as behavior change).[30] The context should be taken into consideration when setting targets. For instance, there might be a war. Looking back at your recent performance may help to obtain a sense of what is feasible.[31]

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[26] World Health Organization, *COVID-19 Strategic Preparedness, Readiness and Response Plan 2022: Global Monitoring and Evaluation Framework*, WHO, Geneva, 30 September2022, <www.who.int/publications/m/item/covid-19-strategic-preparedness-and-response-plan-2022--global-monitoring-and-evaluation-framework>, accessed 11 November 2022.

[27] Collective Service for Risk Communication and Community Engagement, *Risk Communication and Community Engagement Indicator Guidance for COVID-19*, Collective Service for Risk Communication and Community Engagement, Geneva, 2022, <www.rcce-collective.net/resource/risk-communication-and-community-engagement-indicator-guidance-for-covid-19/>, accessed 11 November 2022.

[28] United Nations Children's Fund, *COVID-19: RCCE Indicator Guidance Package*, UNICEF, New York, April 2020, <https://drive.google.com/file/d/1LWaCh85NXf3gPacPbyc-0rSE-l_mYZli/view>, accessed 11 November 2022.

[29] See <www.indikit.net/>.

[30] Marr, B., How to set the right targets for KPIs, top target setting tips for successful metrics, Bernard Marr & Co., June 2022, <https://bernardmarr.com/how-to-set-the-right-targets-for-kpis-top-target-setting-tips-for-successful-metrics/>, accessed 11 November 2022.

[31] Business Gateway, Setting targets and key performance indicators, Business Gateway, June 2022, <www.bgateway.com/resources/setting-targets-and-key-performance-indicators>, accessed 11 November 2022.

V. COMMUNITY FEEDBACK

One of the pillars of accountability to affected populations is strengthening listening approaches and setting up secure means for affected communities to provide feedback about their experiences and perspectives on services, programmes and responses, about a specific topic or issue related to the response. Feedback can include public health concerns or questions about rumours, perceptions and other concerns. Feedback may also include questions about the behaviour and conduct of staff and volunteers, including serious complaints about sexual exploitation and abuse (SEA) and corruption, and sensitive feedback linked to violence or protection concerns. Community feedback mechanisms are not specific to a particular topic or sector. Community members should be able to voice their concerns and have them related to the appropriate topic (e.g., COVID-19) and sector (e.g., public health) through the feedback mechanism. What matters most is that feedback is acted on and responded to. Community feedback approaches ensure that communities and individuals can express their beliefs, access needed information, obtain answers to questions and raise concerns or complaints as needed. It strengthens community inclusion and enables an improved response to the needs of the community. Community feedback can be relayed through government and non-governmental channels. It is also important that community feedback is linked to media, both as a means to inform the media of the reality in the community and as a means of social accountability. This indicator measures whether mechanisms are in place to capture community feedback.[32]

The community feedback cycle involves two stages: (1) the collection of information; and (2) the relay or feedback of that information.

IFRC has produced a comprehensive set of guidance and tools needed to systematically use community insights to improve programmes, operations and accountability more broadly. It includes the first steps to set up a basic feedback mechanism, guidance on how to conduct community perception surveys, how to analyse qualitative feedback comments, how to handle sensitive feedback, and ensure all feedback is handled responsibly. Of particular relevance is a social and behavioural science toolkit, which was developed together with the behavioural science team of the US Centers for Disease Control and Prevention. This document describes how aid workers can systematically document, analyse and use any kind of open, unstructured feedback shared by community members. The module and its tools are informed by IFRC's experiences with a qualitative feedback approach that was first piloted and used in the 2018–2020 Ebola response in the Democratic Republic of the Congo and then adapted to and used in the COVID-19 response. This module was also developed in partnership with CDA Collaborative Learning, which is well known in the humanitarian sector for Do No Harm and the Listening Project. A wealth of guidance and tools are available at the Community Engagement Hub[33] hosted by the British Red Cross. IFRC is working with partners to provide new guidance on data standards for community engagement. A new qualitative toolkit is also being developed for community feedback practitioners. IFRC is also leading on developing a feedback kit. These tools are expected to be ready in early 2022.

The Collective Service also has a Global Community Feedback Dashboard.[34] The dashboard describes the function of the community feedback mechanisms (perceptions, rumours, questions, other), the focus of the mechanisms (COVID-19, Ebola, other) and links to them.

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[32] Collective Service for Risk Communication and Community Engagement, *Risk Communication and Community Engagement Indicator Guidance for COVID-19*, Collective Service for Risk Communication and Community Engagement, Geneva, 2022, <www.rcce-collective.net/resource/risk-communication-and-community-engagement-indicator-guidance-for-covid-19/>, accessed 11 November 2022.

[33] See <https://communityengagementhub.org/guides-and-tools/complaints-and-feedback>.

[34] See <https://collective-service.github.io/rcce-feedback-mechanism/>.

DATA COLLECTION FOR COMMUNITY FEEDBACK

Feedback can be received informally through conversations between community members and staff and volunteers, or more formally through channels such as a telephone hotline, complaints desk or community committee. Community feedback mechanisms can include data collected through conversations between community members and community workers and volunteers, during household visits, from hotlines, information centres, digital engagement platforms (U-report, RapidPro, Internet of Good Things and others), interactive messaging platforms (Facebook, Twitter, WhatsApp), focus group discussions, participation in research on community insights, written communications (email, letters), Q&A forums, listening sessions, media phone-ins (TV, radio programmes), community platforms, feedback booths, community meetings, health volunteer networks, etc. Data collection methods being used for M&E and social science purposes can also be considered part of a community feedback mechanism.

FEEDBACK MECHANISMS

Feedback mechanisms should operate as one of the key communication channels between the wider community and the management of the public health response. The management of the response should review the information received through the feedback mechanism, and, where necessary, adjustments to the response should be made. For example, feedback can be acted on and responded to through changes in services or community engagement strategies, or by sharing factual and timely information through risk communication interventions to address rumours. The focus should be on ensuring that information gathered from the community is being regularly collected, analysed, integrated into decision-making processes, and acted on. A feedback mechanism is seen as effective if, at a minimum, it supports the collection, acknowledgement, analysis and response to the feedback received, thus forming a closed feedback loop. If the feedback loop is left open, the mechanism is not fully effective.[35]

A community feedback mechanism should have procedures in place to ensure that:

- The mechanism is open to all persons to safely use and that it can be used by vulnerable groups and those with special needs
- A systematic and transparent mechanisms is established through which people can register dissent and raise issues
- There are clear and functional lines of two-way communication for routine feedback so that relevant issues or concerns are relayed to the appropriate officials at local or national level
- Communities are informed of the findings from monitoring, evaluation, and learning activities, and communities have access to data.[36]

The Inter-Agency Standing Committee is currently developing simple data standards for community feedback data. These standards describe what humanitarian organizations should do to systematically capture and process community feedback in a way that enables efficient sharing and analysis of feedback data documented by different stakeholders. This enables all stakeholders involved in humanitarian response efforts to jointly discuss and decide on the necessary action in response to community feedback.

The standards are informed by common practice and a synthesis of existing documents and guidance in the humanitarian space. They enable and guide the work of collective community feedback mechanisms and other inter-agency initiatives at the response level. They also apply to multi-channel feedback mechanisms of a single organization and facilitate the sharing of feedback data with other organizations for joint implementation and decision-making. The scope and content of standards are planned to be tested through 2022 and followed by an IASC endorsement process.

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[35] ALNAP, Closing the loop – effective feedback mechanisms in humanitarian contexts, ALNAP, June 2022, <www.alnap.org/help-library/closing-the-loop-effective-feedback-mechanisms-in-humanitarian-contexts>, accessed 11 November 2022.

[36] Collective Service for Risk Communication and Community Engagement, *Risk Communication and Community Engagement Indicator Guidance for COVID-19*, Collective Service for Risk Communication and Community Engagement, Geneva, 2022, <www.rcce-collective.net/resource/risk-communication-and-community-engagement-indicator-guidance-for-covid-19/>, accessed 11 November 2022.

VI. MONITORING AND EVALUATION

Monitoring and evaluation (M&E) is the process of collecting and analysing information to measure the effects of an intervention. M&E is conducted in reference to the theory of change and the chosen indicators. It should also seek to collect and analyse information more broadly on the effects of the intervention. This is done to assess whether the intervention is causing any unforeseen or unintended consequences. In conducting M&E the objective is to provide valid and reliable information to decision makers at the time when it is needed. This involves clearly thinking out the information needs and how to collect data practically and cost-effectively.

M&E is a means of internal accountability. It aims to support the internal management of an intervention by collecting information on whether the intervention has done what it planned to do and in the way intended. M&E is also a means of external accountability, in particular ensuring that the intervention is answerable to the affected population. M&E should be conducted so that the affected population is informed about the intervention, including intervention performance, and is able to express its opinion on the intervention.

Monitoring is the process of continually reviewing assumptions, progress towards planned results and any unintended consequences of the programme. Monitoring is an ongoing reflection to help identify any major causes of concern while allowing the programme to continue. Monitoring can be done either of a programme or of a situation – for example, the situation of women and children. Evaluation is the process of valuing the results of a programme. Evaluations are done to identify what the benefits of a programme have been to the community and whether there have been any unintended consequences. Evaluations typically use a wider range of data sources than monitoring. Evaluations should provide a solid evidence base from which strategic programmatic decisions can be made with confidence.

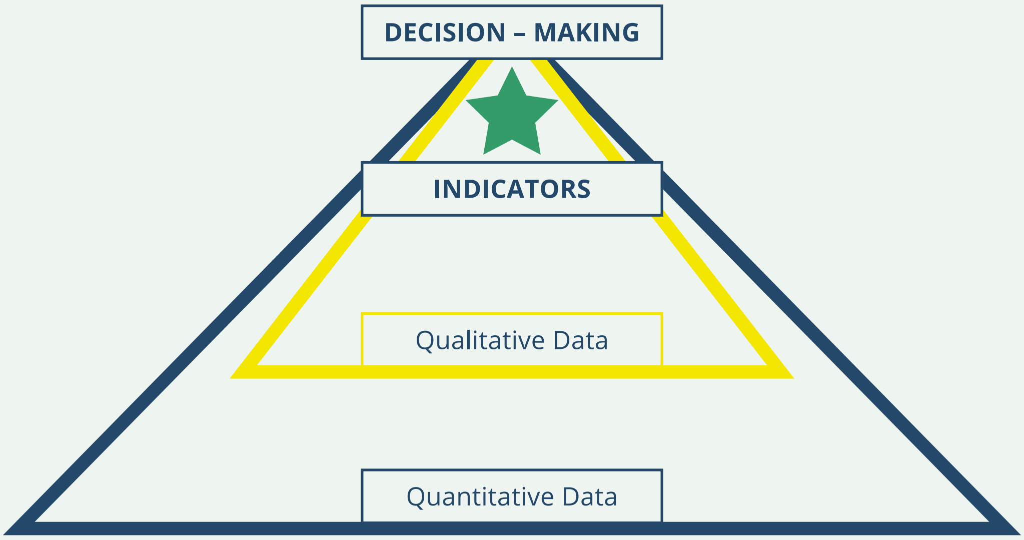
THE QUANTI-QUALI MODEL

It is recommended to use both quantitative and qualitative information for M&E. The general idea is that quantitative data provide a sense of how many people are being reached by our activities, whereas qualitative data provide a sense of how well we are doing those activities. This is standard practice in M&E.

Quantitative data are collected through a variety of sources and methods. A great deal of data are amassed through programme activities – for example, training, outreach, etc. This is known as process data. This type of data is collected through the Ws databases. The Collective Service is currently using the 4Ws format (who, what, where, when). Other database formats can also be used. Surveys remain one of the key data sources. They can provide representative data on the whole of the population. As discussed in the social science training programme, data should always be treated critically, whatever the source and methodology.

Qualitative data are collected, for example, by programme staff going to a location in person to see what work is being done, to discuss what the process has been, to ask community leaders if they have any concerns, and to check with the intended beneficiaries whether they have received the information and services that were planned. It is called ‘qualitative monitoring’, as it is primarily concerned with the quality of the programme. The data are not meant to be statistically reliable. The information collected in qualitative monitoring should be related to the programme results framework. When put together with quantitative data, it can provide a balanced view of the programme results.

FIGURE 3. THE QUANTI-QUALI MONITORING MODEL



A third type of data is derived from programme policy documents and procedures. This type of information can confirm, for example, whether a policy document has been adopted, procedures are mandated, etc.

Input data are data on finance, staff and other resources. Inputs are the organizational energy source for programme implementation and as such need to be monitored. Data on inputs can usually be gathered from routine administrative systems such as finance, human resources and programme documents. The use of money is managed by the budget and finance systems. However, the availability of a budget can be considered to be a programme result and included in results monitoring. Likewise, staff, coordination mechanisms and work plans are part of the theory of change.

PARTICIPATORY MONITORING

Participatory monitoring is monitoring done together with community members. When conducting participatory monitoring, actors seek to ensure that all voices are heard and considered, and an assessment of the programme results is agreed with all actors if at all possible. There are specific methodologies associated with participatory monitoring, such as participatory action research, community-based participatory research, participatory learning and action, participatory rural appraisals and transformative participatory evaluation.[37] Participatory monitoring should be understood as being more than a technical skill; it is an ethic. The ethic is to seek to understand people from their perspective. Participatory monitoring has deep roots in democratic and sociological thinking. As RCCE is a community-based activity, participatory monitoring approaches and ethics should be applied throughout our work.

FIELD MONITORING

When managing an intervention, staff of an organization should go in person into the field to see what work has been done. This is what is meant by 'field monitoring'. In general, field monitoring is conducted through inspections of facilities such as health centres combined with qualitative data collection conducted with community members. RCCE interventions may have a lesser investment in facilities and infrastructure. As such, RCCE field monitoring may

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[37] Activity Info, An introduction to participatory monitoring and evaluation – the missing link between inquire and impact, Activity Info, 15 March 2021, <www.activityinfo.org/blog/posts/2021-03-15-an-introduction-to-participatory-monitoring-and-evaluation-the-missing-link-between-inquiry-and-impact.html>, accessed 11 November 2022.

be more concerned with qualitative data collection. The approach to field monitoring recommended in this handbook is based on triangulation. That is where we collect information from various types of people and use several data collection methods. We do this so that we can learn about the situation from different perspectives. Which methods are employed is at the discretion of the programme management. As always, we recommend consultation with the community on data collection methods.

It is important that field monitoring is done by staff members of the organization managing the intervention. Staff members have particular responsibilities to the affected population, and field monitoring is a means of ensuring accountability. Staff members will also be best placed to assess whether the results are being achieved as per the programme design. Field monitoring can be done jointly with organization colleagues, including those from other sectors, or with partner agencies. It is good practice to undertake field monitoring with government counterparts and community members, both to conduct more effective monitoring and to build government capacity.

How often field monitoring is conducted depends on the frequency with which information is needed. In general, where there is thought to be a high level of risk, then field monitoring should be conducted more frequently. For example, there could be a high level of risk at the time of a disease outbreak, and information from the field is required more frequently. It is up to intervention staff to decide if their responsibilities require them to conduct more frequent field monitoring.

The selection of sites for missions is the decision of the intervention managers in consultation with community members and local stakeholders. The areas of greatest interest or concern should be those targeted. It is important to remember that as RCCE interventions are equity focused, hard-to-reach areas and marginalized and vulnerable groups should be prioritized.

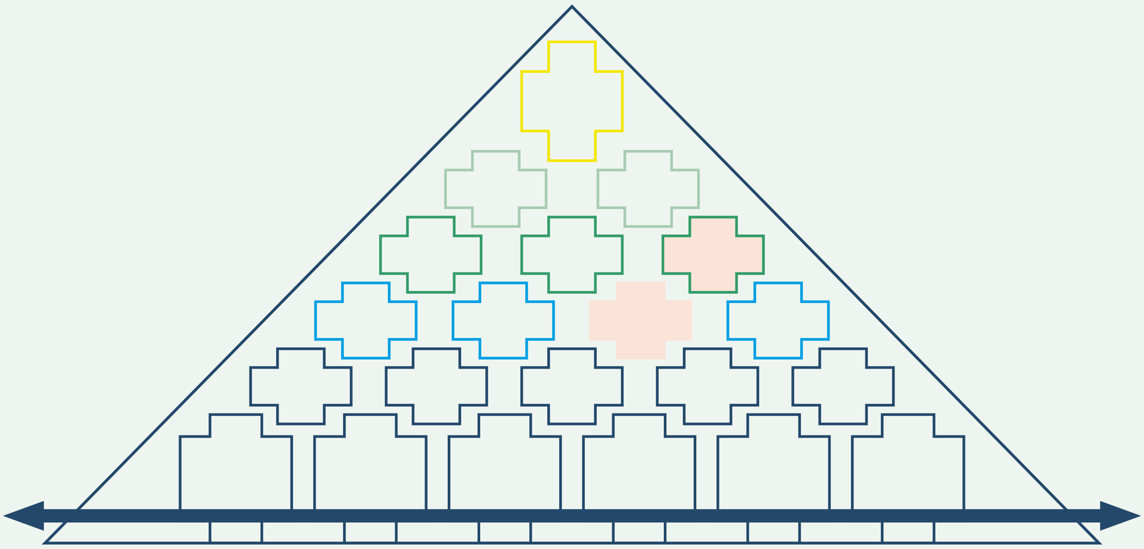
THIRD-PARTY AND REMOTE MONITORING

Remote monitoring and third-party monitoring are conducted when the organization cannot employ its routine monitoring methods in a particular area. This is usually because the organization cannot physically access the intervention area for security, political or other reasons. Remote and third-party monitoring should, where possible, apply the same methods as those being used by the organization's staff.

The terms 'remote monitoring' and 'third-party monitoring' are often used interchangeably, although they refer to different types of monitoring. Third-party monitoring is employed when an organization wants to externalize the risks of conducting monitoring in an area. In these situations, the organization employs a third party to conduct the monitoring. The organization does not bear the same liabilities to the third party as it does to an employee or consultant. As such the third-party organization accepts the risks of conducting the monitoring. Third-party monitoring is usually done for field monitoring only. As far as possible it should follow the organization's standard monitoring methodology. It is to be expected that third-party monitors will not have the programme knowledge of the organization staff, so they will require training.

Remote monitoring refers to data collection conducted at a distance. This is usually done through information technology. Various methods have mushroomed in recent years and can be drawn on. In Figure 3, the shapes within the triangle represent M&E activities undertaken within a programme. Two of the shapes are in pink. These pink shapes represent M&E activities that are being conducted through remote monitoring or third-party monitoring partners. Please note how remote and third-party monitoring fit within the overall monitoring structure. The idea of this graph is to represent how remote monitoring and third-party monitoring should fit within the routine programme M&E system.

FIGURE 4. EXAMPLE OF MONITORING COMPONENTS, INCLUDING THIRD-PARTY AND REMOTE MONITORING



MEASURING THE REACH OF INFORMATION

Individuals may be reached with information through multiple communication platforms. When using media monitoring to count the number of individuals that use each communication platform it may be that the same person is being counted several times. This is considered to be acceptable for media monitoring, as countries are not expected to have the capacity to differentiate between the different channels through which an individual has received information. Furthermore, there is no simple, widely accepted equation or industry standard for minimizing double-counting. When using media monitoring data, to have a sense of overall information reach, the communication platform with the largest reach can be used as a measure. This can be done with specific geographic areas in mind. For example, to measure how many people have received information in rural and urban areas, the most popular communication channel can be used for each (e.g., radio in a major city, and SMS in rural areas). Please also note that in setting targets for the number of people reached it is important to clarify whether the target is the number of people reached in total or for each communication platform. Once it is established how this will be reported on, it is important to remain consistent with target-setting and tracking.[38] Please see the UNICEF 'COVID-19 RCCE Indicator Guidance Package'[39] and the UNICEF 'Q&A for COVID-19 Risk Communication and Community Engagement (RCCE) SitRep/HAC Indicator Guide'[40] for further discussion.

Measuring total reach consists of three elements: (1) direct reach that tracks countable recipients of services by a service provider at the point of delivery; (2) indirect reach as a result of system-strengthening; and (3) indirect reach as a result of multipliers. The approach and tools for measuring direct and indirect reach are different.

- Direct reach refers to countable recipients of services by a service provider at the point of delivery. Typically, this information is captured as administrative data and stored in management information systems.

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[38] United Nations Children's Fund, *UNICEF COVID-19 Humanitarian Action for Children Guidance*, UNICEF, New York, July 2020.

[39] United Nations Children's Fund, *COVID-19: RCCE Indicator Guidance Package*, UNICEF, New York, April 2020, <https://drive.google.com/file/d/1LWaCh85NXf3gPacPbyc-0rSE-l_mYZli/view>, accessed 11 November 2022.

[40] United Nations Children's Fund, *Q&A for COVID-19 Risk Communication and Community Engagement (RCCE) SitRep/HAC Indicator Guide*, UNICEF, New York, 28 April 2020, <https://drive.google.com/file/d/1P-NOkOvoMO8lmGPaiX1Cm8XVq_sW8SsA/view>, accessed 11 November 2022.

- Indirect reach cannot be counted directly because service recipients benefit apart from the provider and delivery point. If crossing certain significant thresholds triggers a measurement of indirect reach, such thresholds need to be carefully defined. This is a 'judgement call', and will vary according to operational context. If a threshold in system-strengthening has been crossed, the entire target population can be counted as indirectly reached.

- In general, broad public awareness-raising activities should be considered too indirect and too unreliable to be counted under indirect reach, except for targeted Communication for Development (C4D) interventions.[41]

Measuring indirect reach is usually an estimate rather than a precise measurement. Estimates are considered sufficient as long as the process of measurement is transparent and the reporting on it carefully worded. Measuring indirect reach is never completely accurate but rather a 'good enough' approximation based on numerous assumptions and judgements.

IFRC has written a technical note, 'Counting People Reached',[42] which addresses questions such as how to avoid double-counting.

EVALUATION

Evaluation is a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, efficiency, coherence and impact of an intervention in relation to its targeted results. Evaluations are conducted to learn from the implementation of the programme and to orientate future actions. Evaluations are also conducted to ensure accountability to donors, governments, implementing partners and the community. There are several types of evaluations. Process evaluations are focused on organizational or management issues. They are often conducted during implementation. Impact evaluations focus on the benefits of the programme to the community. They are usually scheduled at the end of the programme period.

Evaluations should be conducted to meet programme decision-making needs. Mid-term evaluations are useful to focus on programme effectiveness and management (inputs, outputs, processes). Final evaluations tend to address impacts, sustainability, costs and broader policy issues. RCCE work plans should specify when evaluations are to take place. In some cases, the programme may have sufficient information on its processes and impacts for decision-making, and an evaluation may not be needed. For example, programme successes or failures may be well documented, and the reasons clearly understood. In this case, a formal evaluation may be waived, and a final report written using existing documentation.

It is important to clearly define the scope and focus of an evaluation. This should include identifying the geographic area, type of activity of interest and the time period the evaluation should cover. Other options can be considered, including looking at one activity in several programmes to compare the effectiveness of various approaches (a thematic evaluation). Looking at several projects in one small area can provide insight into their interactions and relative effectiveness. In general, evaluations should:

- Describe what happened and how it compares with what was expected

- Analyse why and how the expected results were achieved or not achieved

- Propose recommended actions for decision makers.[43]

The OECD Development Assistance Committee Network on Development Evaluation (EvalNet) has defined six evaluation criteria: relevance, coherence, effectiveness, efficiency, impact and sustainability.[44]

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[41] United Nations Children's Fund, *COVID-19 Programme Monitoring and Analysis Framework*, UNICEF-19 PME Working Group, New York, 2020, <https://unicef.sharepoint.com/sites/DAPM/SPIMR/Forms/AllItems.aspx?id=%2Fsites%2FDAPM%2FSPIMR%2FCOVID%2D19%20Monitoring%2FCOVID19%2DPMA%2DFramework%2D23June2020%2DEN%2Epdf&parent=%2Fsites%2FDAPM%2FSPIMR%2FCOVID%2D19%20Monitoring>, accessed 11 November 2022.

[42] International Federation of the Red Cross and Red Crescent Societies, *Counting People Reached*, Technical Note, IFRC, Geneva, 1 September 2018, <https://data.ifrc.org/assets/documents/Technical Note On Counting People Reached.pdf>, accessed 11 November 2022.

[43] United Nations Children's Fund, *A UNICEF Guide for Monitoring and Evaluation*, UNICEF, New York, 2010, <http://library.cphs.chula.ac.th/Ebooks/ReproductiveHealth/A%20UNICEF%20Guide%20for%20Monitoring%20and%20Evaluation_Making%20a%20Difference.pdf>, accessed 11 November 2022.

[44] Organisation for Economic Co-operation and Development, Criteria for evaluating development assistance, OECD, Paris, <www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>, accessed 11 November 2022.

These criteria are widely used. It is recommended they are adapted to the needs of the programme.

Finally, a decision has to be made as to who will conduct the evaluation. While an independent evaluation is often the preferred option, it is not necessarily the best option in every case. One advantage of an organization carrying out its own evaluation is that often it can more easily accept recommendations and put them into practice. Internal evaluations are usually carried out by the staff of the service or programme, who tend to focus on process. Internal evaluators, however, may lack objectivity and therefore hesitate to be critical of their own programme. Evaluators from outside the programme may provide additional insight and greater technical expertise, and be more objective in formulating recommendations.[45]

ATTRIBUTION AND CONTRIBUTION FOR RCCE

In M&E, 'attribution' refers to a result that can be directly attributed to the intervention. For example, the number of people who received free mosquito nets in a village during a defined period could be attributed to an intervention if no other partner was distributing mosquito nets in that village at that time. 'Contribution' refers to results to which the intervention contributed but to which other factors may also have contributed. For example, an RCCE intervention may have contributed to improved knowledge of COVID-19 transmission routes among teenagers, but a separate intervention through schools may also have contributed to teenagers' knowledge of transmission routes. In general, some lower-level results in a theory of change (activities and outputs) can be attributed to an intervention. It becomes increasingly difficult to attribute results to a specific action for higher-level results, as higher-level results usually have many actors from various sectors contributing to them. To give another example, RCCE, vaccination, health care, etc. may all contribute to a reduction in COVID-related mortality.

Attribution and contribution are likely to present many challenges for the evaluation of RCCE programmes that have multiple partners operating and interventions. RCCE is probably best understood as a common initiative not very amenable to identifying specific contributions. This underlines the importance of seeing RCCE as a collective activity. Where possible, encourage country-level evaluations of RCCE. For evaluations of specific interventions, one approach is to provide evidence that the theory of change was realized, and that this led to the intended change. The key evaluation question when taking this approach is: Does the evidence we have support belief in the theory of change, or does it suggest the theory of change is not working out as expected?

DEVELOPING COUNTRY M&E SYSTEMS

An M&E system can be said to be working well when it produces valid and reliable information that is used by decision makers when they need it. This section contains general guidance on how to establish an M&E system. Please see the 'Briefing Note on Establishing Country RCCE M&E Systems'[46] for a more in-depth discussion. The key elements of a national RCCE M&E system are described below.

Coordination

The coordination of RCCE M&E should be part of the overall coordination of the response. RCCE M&E focal persons should be identified in relevant national ministries, at subnational government levels and in partner organizations. An RCCE M&E working group should be formed to plan, coordinate and manage RCCE M&E activities.

RCCE M&E plan

It is recommended that a national RCCE M&E plan is developed for the response. The plan should broadly describe scenarios for the preparedness, response, recovery phases of a public health emergency and what information will be needed at each stage. The budget, human capacity, training, and coordination for RCCE M&E should all be detailed.

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[45] United Nations Children's Fund, *A UNICEF Guide for Monitoring and Evaluation*, UNICEF, New York, 2010, <http://library.cphs.chula.ac.th/Ebooks/ReproductiveHealth/A%20UNICEF%20Guide%20for%20Monitoring%20and%20Evaluation_Making%20a%20Difference.pdf>, accessed 11 November 2022.

[46] See <https://drive.google.com/drive/folders/1tBReevU2PY6piZ_ukH0BiChApz6jcGJl>.

Routine data collection

Table 1 contains the suggested information needs and data collection methods for a broad-based RCCE programme. This should be understood as a general scheme that will need to be adapted to country needs. It is recommended that some observational data also be included, whether qualitative or quantitative.

TABLE 1. INFORMATION NEEDS AND SUGGESTED DATA COLLECTION METHODS FOR RCCE

Information need	Suggested data collection method
Representative, reliable and regular quantitative population data, preferably with disaggregation by high-risk groups	Representative, continuous population surveys with disaggregation by high-risk groups
Qualitative socio-behavioural information on community perceptions	Good-quality, detailed and regular qualitative research
Regular community feedback	Functional community feedback mechanisms
Light but regular information on social discourse	Light but regular monitoring of social discourse (social listening/rumour monitoring)
High-frequency information on programme performance	Routine activity and process data collection and monitoring

Preparedness

Consideration should be given to having standing arrangements in place to facilitate the production of reliable information at the onset of an emergency. For example, standing arrangements can be made with a research institution or university to conduct a survey at the onset of an emergency. This should include provision for conducting surveys remotely if in-person data collection is not possible. Standing arrangements for qualitative research should also be considered.

VII. DATA COLLECTION METHODS

This section contains an overview of data collection methodology and then outlines some of the data collection methods that may be employed for an RCCE programme. The data collection methods covered here do not focus exclusively on indicators but on the information needs of an RCCE programme broadly defined. Please see the Collective Service social science resources[47] for a more in-depth discussion of data collection methodology. Please also see the Red Cross Community Engagement Hub[48] for tools on data collection.

Prior to beginning data collection, one should check if the data needed already exist. Primary data are data that are collected directly for the purposes of the research or programme management – for example, focus group discussions conducted on the implementation of a programme. Secondary data are data that are collected for another purpose but which can be used for the research or programme management – for example, using census data to identify vulnerable districts for a programme to target.

There is a great deal of data collection in countries now. Even when not directly for RCCE purposes, the data generated can provide very useful information. Surveys such as Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS), for example, include data on socio-behavioural dimensions, environment, hand washing, attitudes, etc. These surveys are particularly valuable because they are conducted with great rigour, and the sampling often allows for analysis of the needs of the most disadvantaged. These surveys can provide a baseline for some RCCE indicators.

SOCIAL SURVEY

Social surveys (hereafter referred to as surveys) are an important source of information for RCCE. We provide a brief overview of surveys and then discuss different types of surveys that are commonly used for RCCE. Surveys usually refer to data collection that employs both interviewing and sampling to produce quantitative data sets. Surveys can be used to provide descriptive statistics, examine the clustering of social phenomena, identify the social location and characteristics of subgroups, analyse causal phenomena and test explanations. Surveys can be conducted in person, by telephone, by text message, online, etc.[49] The quality of a survey will depend on the methodology used in its design and the rigour with which it is conducted.

Various types of surveys are referred to for RCCE, such as knowledge, attitudes and practice (KAP), behavioural insights (BI), etc. In practice the distinctions between these types of surveys is not so clear, as they tend to overlap – for example, KAP surveys often include BI data points. KAP surveys are surveys that focus data collection on knowledge, attitudes and practices of the population of interest. They usually also include a set of socio-demographic questions. Sampling for KAP surveys is usually done so the results are representative of the population. Sampling to allow for data disaggregation by population subgroups is less common. BI involves using what has been learned from behavioural science to improve programme design. Most BI surveys use a structured approach to data collection. They can be based on BeSD frameworks such as the UNICEF Behavioural Drivers Model. The surveys look at how people make decisions and act on them. BI surveys collect data on a wide range of factors that influence behaviour, such as norms, barriers, societal, financial, etc.

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[47] See <www.rcce-collective.net/resources/resources-social-science/>.
[48] See <https://communityengagementhub.org/guides-and-tools/complaints-and-feedback>.
[49] Oxford University Press, *Oxford Dictionary of Sociology*, Oxford University Press, Oxford, 1998.

The Collective Service has developed an 'RCCE Question Bank on Core Indicators' to support data collection on socio-behavioural factors related to COVID-19.[50] It can be used to develop data collection questions in relation to information and communications, knowledge and understanding, perceptions, practices, social environment and structures. The WHO Regional Office for Europe has also developed a 'Survey tool and guidance: rapid, simple, flexible behavioural insights on COVID-19'.[51]

Surveys for special populations are also conducted – for example, surveys of health-care workers. A good resource to refer to is the Analytics for Operations Working Group's 'Guidance for Health Care Worker (HCW) Surveys in humanitarian contexts in LMICs'.[52]

KAP and BI surveys often aim for a sample of about 1,000 responses for national studies. Stratified samples are widely used for KAP and BI surveys. Stratified samples of this size may allow for disaggregation of data for some categories. However, larger samples may be needed to collect sufficient data for analysis on hard-to-reach groups. Country-level advice should be sought when developing a sample frame. Sampling should bear in mind the expected proportion of the population that is of interest for study.[53] For example, if vaccine hesitancy is to be studied and a small proportion of the population are vaccine hesitant, that may then require a larger sample size. This should be borne in mind particularly when RCCE questions are part of a larger survey.

To respond to the COVID-19 pandemic, it is necessary to identify and characterize the factors that slow or accelerate transmission and the populations that are most vulnerable to it. Disaggregation of data is critical to generating the information needed to do this.[54] Disaggregating data by populations usually requires a large number of data. For this reason, it is recommended, where possible, that larger-scale data collection is undertaken. This may involve pooling resources of several agencies together. For example, rather than conducting several small surveys, it may be better to combine resources and conduct one large survey that allows for the disaggregation of data for key groups. Data collection templates can also be developed jointly with partners and stakeholders to facilitate shared analysis. Further advice on disaggregation is available in the Collective Service's 'Risk Communication and Community Engagement Indicator Guidance for COVID-19'.[55]

PROCESS DATA

Collecting data on RCCE activities and processes or activities is necessary for programme M&E. Process data can include data on the number of community dialogues held, financial support given to community groups, communication materials produced, number of training sessions, etc. Process data may be generated through routine programme activities. For example, when participants register at a training event, the training register can be used to count the number of participants, and this can be used to monitor the reach of RCCE training. There is usually some work involved, however, in making process data serviceable for M&E purposes. A great advantage of process data is that they are available once activities begin. They are low cost, as they are collected as part of routine activities. They can be updated frequently to provide ongoing information on progress. In situations where field data collection, such as surveys, is not possible, they may be the only data available. Further, most programme decisions are made on programme implementation, and process data provide very useful insights into progress and issues.

Programme activities in the field can often be fluid or overlapping. For data purposes, however, it is very important to have clearly defined categories for each activity. It is good practice to define what is meant by each activity. This can be done in an RCCE taxonomy. The Collective Service has developed an 'RCCE Activities

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[50] Collective Service for Risk Communication and Community Engagement, *RCCE Question Bank on Core Indicators*, Collective Service for Risk Communication and Community Engagement, Geneva, 2021, <www.rcce-collective.net/resource/rcce-question-bank-on-core-indicators/>, accessed 11 November 2022.

[51] World Health Organization, *Survey tool and guidance: rapid, simple, flexible behavioural insights on COVID-19*, WHO Regional Office for Europe, Copenhagen, <https://apps.who.int/iris/handle/10665/333549>, accessed 11 November 2022.

[52] Analytics for Operations Working Group, *Guidance for Health Care Worker (HCW) Surveys in humanitarian contexts in LMICs*, Analytics for Operations Working Group, July 2020, <https://reliefweb.int/sites/reliefweb.int/files/resources/2020-07 Social Sciences Research Guidance HCW surveys in humanitarian contexts- final draft.pdf>, accessed 11 November 2022.

[53] United States Agency for International Development, *Integrating Social and Behavioural Change in Climate Change Adaption: An Introductory Guide*, USAID, Washington, D.C., 2019.

[54] Pan American Health Organization, *Why Data Disaggregation is Key During A Pandemic*, PAHO, Panama, 2021, <https://iris.paho.org/bitstream/handle/10665.2/52002/Data-Disaggregation-Factsheet-eng.pdf?sequence=17>, accessed 11 November 2022.

[55] Collective Service for Risk Communication and Community Engagement, *Risk Communication and Community Engagement Indicator Guidance for COVID-19*, Collective Service for Risk Communication and Community Engagement, Geneva, 2022, <www.rcce-collective.net/resource/risk-communication-and-community-engagement-indicator-guidance-for-covid-19/>, accessed 11 November 2022.

Taxonomy' that can be used as a reference point.[56] All partners reporting on the programme should use the same definitions. This will facilitate the aggregation of data. If possible, the cluster or coordination group should also use an agreed taxonomy. Where this is not possible, efforts should be made to ensure the definitions being used by different partners are at least compatible.

Process data are usually organized using the Ws database. Where possible a 5Ws format should be used. However, it may not be possible to provide reliable information on all of the 5Ws. If this is the case, then only the Ws for which reliable information can be reported should be used. The 5Ws are:

WHO

conducted the activity – i.e., the organization that directly implemented the activity; in some databases the funding organization is also listed under Who.

WHAT

was the activity – i.e., the specific activity that was undertaken; if at all possible, the activities listed here should be the same as those in the taxonomy discussed above.

WHEN

was the activity undertaken – i.e., the date when the activity took place; this may be a specific date or a time period (e.g., a month).

WHERE

did the activity take place – i.e., the geographical location where the activity took place; data may be a collected at village, district or provincial level depending on the programming needs.

FOR WHOM

was the activity undertaken – i.e. who were the people who received the service (e.g., the age and sex of beneficiaries); more detailed information may be collected – for example, on beneficiaries with a disability.

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[56] See <https://docs.google.com/spreadsheets/d/1btBRNO6YmVQl5Q-cHi7HI_BQV1Rji6aqWEtWBb_kdpM/edit>.

In collaboration with partners, the Collective Service has developed activity monitoring databases.[57] These can be used as an example of good practice when developing activity databases.

Special mention is given here to training. Data collection on training can be done to give a rough overview of activities, or it can go into all of the details of an education information management system. It is important to define from the outset what information is required for programme management. To effectively monitor training, it is important to know on which subjects participants have received training. For example, if all of the training in a country has been done on communication through the media, that would raise concerns about national capacity in other forms of communication and engagement. If possible, data should be collected in reference to a full list of RCCE topics on which training is being provided. Developing a full list of training topics can be challenging; as with activities, many training events can be fluid and overlapping, covering various topics. For effective monitoring, efforts will need to be made to clearly categorize the topics covered by training. Both online and in-person training should be reported. However, it should be noted that online training that is internationally organized should not be reported on unless the reporting office is directly involved in organizing it. So, for example, an organization's office in a particular country should not report on the number of people from that country who have participated in a training organized by the headquarters office. Training can vary in length and depth. For example, the topic of communication through media could be covered in an afternoon session or a degree course. It is suggested therefore to include data collection on the length of the training. Training data can be collected as part of the Ws database. If more detailed information is needed, then it may be useful to develop a specific tab to collect data on training. A Training Tracker developed by UNFPA Myanmar can be seen as an example.[58]

FOCUS GROUP DISCUSSION

A focus group discussion (FGD) is a method for collecting qualitative data that brings community individuals together to discuss a specific topic. Questions are open-ended, with the aim of stimulating an informal discussion with participants to understand their perceptions, beliefs, fears, questions and information needs with regards to the new coronavirus outbreak. An FGD will usually take around one hour and should include a minimum of 8 and a maximum of 12 participants. It is best practice to hold separate FGDs with men and women, and perhaps other minority groups too, if possible. This will motivate them to provide their opinion openly. If time does not allow this, you can have a mixed group (half male and half female). Ensure you actively include vulnerable groups such as persons with disabilities, migrants and elderly people, and consider doing separate FGDs with them. IFRC has developed a detailed 'Focus group discussion guide for communities'.[59]

KEY INFORMANT INTERVIEWS

Key informant interviews are a widely used qualitative method. They involve in-depth discussions with interviewees on a topic. The selection of interviewees is done to talk to those who have (in-depth) knowledge of a subject or a geographic area. An important consideration is to ensure that the viewpoint of marginalized individuals is included. Key informant interviews can be subject to bias, so triangulation with data from other qualitative methods is recommended.[60]

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[57] See <www.rcce-collective.net/data/operational-presence/>.

[58] See <https://docs.google.com/spreadsheets/d/1RMXWZkY_zRaewR-syfXX2ep87-TXUdPA/edit?rtpof=true#gid=1542856783>.

[59] International Federation of the Red Cross and Red Crescent Societies and United Nations Children's Fund, *Focus group discussion guide for communities: Risk communication and community engagement for the new coronavirus*, IFRC and UNICEF, 5 March 2020, <https://drive.google.com/file/d/1nmyKqYlnGgngiWMBk5jivLOWXE2e7pH8/view>, accessed 11 November 2022.

[60] United Nations Children's Fund, *Data Collection for RCCE COVID-19 Planning and Monitoring for Children*, UNICEF, New York, August 2020.

OBSERVATIONAL DATA

Partners on the ground have noticed 'social acceptability bias' in some self-reported survey data on COVID-19. This means that survey respondents report behaviour that they think the interviewer would approve of rather than what they in fact do. To deal with this, there has been increased interest in using data gathered through the observation of behaviour. In the early phase of the pandemic, data collection through observation was often avoided due to concerns about safety; however, over time, effective and safe adaptations of observational methods were developed, and use increased.[61] The use of observational data is not new.[62] Observational data can be effective to measure behaviours that can be easily and ethically observed – for example, the wearing of masks on public transport.[63] We discuss below some examples of the use of observational data. This discussion draws from desk research conducted by the Hygiene Hub of the London School of Hygiene and Tropical Medicine (LSHTM), 'Strengthening the monitoring and evaluation of COVID-19 prevention programmes'.

Surveys are based on a sampling frame often derived from lists – for example, an address list. When conducting observation, however, the units move. One can imagine how difficult it would be to develop a sampling frame if the names on the list spontaneously moved about the page. In general, when using observational techniques, the sample frame is all people in a specific time period in a specific location. We may want to know what proportion is practising a specific behaviour. One way to do this is to choose a location where the number of people entering and exiting can be easily measured. Another issue encountered is how to classify the behaviours observed. Pre-testing is important to establish a comprehensive and discreet list of behaviours that can be easily classified.[64]

INFODEMIC AND SOCIAL LISTENING

WHO defines an infodemic as "an overabundance of information – some accurate and some not – that occurs during an epidemic".[65] Misinformation is false or inaccurate information, including rumours, whether intended to deceive or not. *Disinformation* is intentionally false information, spread for political, economic or social gain.[66] It is worth noting that belief in misinformation is not a simple yes/no. For example, Grimes (2021) describes *illusory truth phenomena*, where repeated exposure to a falsehood can prime us to implicitly accept it, even when we know it to be incorrect on an intellectual level.[67] This may have implications for how we seek to measure the prevalence of misinformation.

Infodemic is a developing area of research and practice. As WHO states, "Standardized metrics and tools are needed to track the evolution of infodemics in the digital–physical information environment, between individuals, communities, society and the health system, using multidisciplinary approaches, including methods and approaches from artificial intelligence, natural language processing, and using structured and unstructured data (big data, ethnographic data, and similar)."[68] WHO has a dedicated infodemic management webpage.[69] The UNICEF Eastern and Southern Africa Regional Office has produced a strategy document, 'Social Listening in Eastern and Southern Africa, A UNICEF RCCE Strategy to Address the COVID-19 Pandemic'.[70] A conference was convened by WHO and the US Centers for Disease Control and Prevention in November 2021 dedicated to metrics for infodemic management, with future developments under way in measurement.

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[61] White, S., Strengthening the monitoring and evaluation of COVID-19 prevention programmes, LSHTM, London, July 2021, <https://resources.hygienehub.info/en/articles/5465793-strengthening-the-monitoring-and-evaluation-of-covid-19-prevention-programmes>, accessed 11 November 2022.

[62] See, for example, Bauer, M.W., and Gaskell, G., *Qualitative Researching with text, image and sound*, Sage, London, 2000.

[63] For a more detailed discussion on observational data, see White, S., Strengthening the monitoring and evaluation of COVID-19 prevention programmes, LSHTM, London, July 2021, <https://resources.hygienehub.info/en/articles/5465793-strengthening-the-monitoring-and-evaluation-of-covid-19-prevention-programmes>, accessed 11 November 2022.

[64] White, S., Strengthening the monitoring and evaluation of COVID-19 prevention programmes, LSHTM, London, July 2021, <https://resources.hygienehub.info/en/articles/5465793-strengthening-the-monitoring-and-evaluation-of-covid-19-prevention-programmes>, accessed 11 November 2022.

[65] World Health Organization, *WHO Public Health Research Agenda for managing infodemics*, WHO, Geneva, 2021.

[66] Social Science in Humanitarian Action Platform, *Vaccine hesitancy and building confidence in covid-19 vaccination*, Social Science in Humanitarian Action Platform, February 2021.

[67] Grimes, D.R., 'Suspicious minds', *Financial Times*, 7 February 2021.

[68] World Health Organization, *WHO Public Health Research Agenda for managing infodemics*, WHO, Geneva, 2021.

[69] See <www.who.int/health-topics/infodemic#tab=tab_1>.

[70] United Nations Children's Fund, *Social Listening in Eastern and Southern Africa, A UNICEF RCCE Strategy to Address the COVID-19 Pandemic*, UNICEF Eastern and Southern Africa Regional Office, Nairobi, 2021, <www.liebertpub.com/doi/epdf/10.1089/hs.2020.0226>, accessed 11 November 2022.

BIG DATA

'Big Data' refers to data that are too big, complex and expensive for traditional database systems to store, manage and analyse. These are digital data that are continually generated by today's global population as a by-product of our daily interactions with digital services and devices. Examples include call detail records, mobility/location data and satellite imagery.[71] Big Data are characterized by the three Vs: volume, velocity and variety. Data can be categorized as mobile phone data and internet data. Different types of big data have been used for different types of programme planning: satellite imagery of different types has been used in population density mapping, which can be useful for macro and localized estimation of the size of target populations; scanning of social media data can provide red flags on rumours or misinformation; and call data records (CDRs) can be used to flag increases or changes in patterns of population movements and reshaping of community connections, which can be important in targeting RCCE.[72]

One of the advantages of Big Data is that they can provide information sooner than most other sources. Updates can be very fast once data agreements are set up and algorithms developed; however, there are heavy data processing costs, and setting up agreements and testing algorithms can take a long time. Big data derived from CDRs and social media also have the limitation that they exclude populations without phone/internet connectivity.[73] Big Data can also raise ethical concerns. There may be a trade-off between leveraging data such as health records to offer better services and privacy concerns.[74] An assessment conducted by the European Commission identifies three major bottlenecks to using Big Data in migration statistics: (1) data accessibility; (2) legal obstacles; and (3) proliferation of relevant databases.

Analysis and use of Big Data is valuable when done in conjunction and 'ground-truthed' with survey/census data and/or qualitative verification with key informants on the ground.[75]

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[71] United Nations Children's Fund, *Data Collection for RCCE COVID-19 Planning and Monitoring for Children*, UNICEF, New York, August 2020.

[72] Ibid.

[73] Ibid.

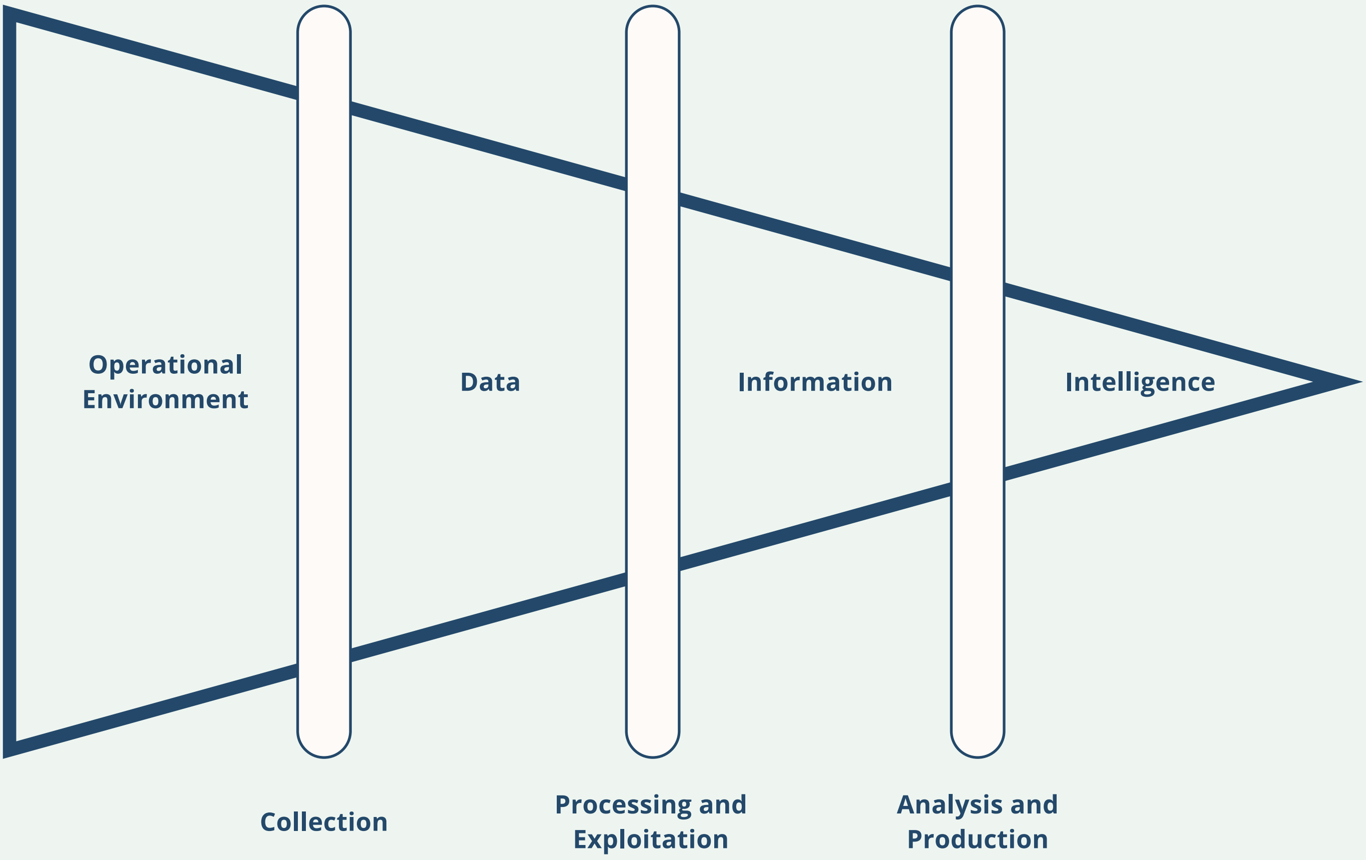
[74] Tett, G., 'Bill Gates, sexist data and the dispossessed', *Financial Times*, 16 February 2019.

[75] United Nations Children's Fund, *Data Collection for RCCE COVID-19 Planning and Monitoring for Children*, UNICEF, New York, August 2020.

VIII. DATA UTILIZATION

The purpose of collecting data is to use it to support better programming. Once data are collected, a process begins to refine raw data into information and then into knowledge or ‘intelligence’, as shown in Figure 5. This section describes this process and provides links to key resources. How the data are prepared will need to be tailored to the needs of those who will use the data for decision-making. It should be borne in mind that the needs of decision makers may vary according to their roles.

FIGURE 5. RELATIONSHIP OF DATA, INFORMATION AND INTELLIGENCE[76]



Source: Joint Intelligence/Joint Chief of Staff, US Government

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[76] See Wikipedia, Data analysis, June 2022, <https://en.wikipedia.org/wiki/Data_analysis#Data_cleaning>.

DATA PREPARATION

To be useful, data must be organized in a format that can be easily managed. To do this, the variables to be included for further use must be chosen. Variables that are of interest to RCCE programming should be chosen. This should be done in reference to the research questions, theory of change and the results framework. It is likely that variables will include knowledge, attitudes, practices, barriers to service use, age, sex, geography, etc.

Software will be needed to help organize the data. The software chosen will depend on the information needs of the programme. Once organized, the data need to be checked through in case of incompleteness, duplicate data, errors, illogical data, etc. This is known as data cleaning. Common tasks include matching records, identifying inaccuracy of data, deduplication and column segmentation. Statistical software may have tools to help identify data errors. Analytical techniques can also be used to help identify data errors. Analytical techniques include comparison of data totals against what are thought to be comparable data sets. Outlier values can also be searched for, as they may have been input incorrectly.

DATA ANALYSIS

Outlined here are various methods of analysis of RCCE data. This section is intended both as a description of established methods with key resources and as an introduction to developing areas of work which may be of interest. Various categorizations for types of analysis have been proposed in the methodological literature. In this handbook, the categories are descriptive analysis, inferential analysis and predictive analysis, as they are most convenient for the methods being reviewed here. It is important to bear in mind that the type of analysis done should be related to the type of data available.

DESCRIPTIVE ANALYSIS

Descriptive analysis is the analysis of data to help describe patterns in the data, such as frequencies, mean, mode, standard deviation and outliers. Descriptive analysis should aim to describe all of the major patterns that emerge from the analysis. Where possible, descriptive analysis should also aim to look at patterns among subgroups of concern, such as the most vulnerable.

INDICES

An index is a method of organizing information to compare change between individual data points. An index number is a data point that may vary in relation to a reference data point. For example, the Economist provides a Big Mac Index that expresses the adjusted cost of a Big Mac in any country as a percentage of the cost of a Big Mac in the United States of America. The cheapest Big Mac in the world can be found in Hong Kong. The Big Mac Index can be used when forecasting currency values. An index may be composed of one or more variables. Indices composed of several variables are known as composite indices. A composite index may be a simple additive index – which adds a value for each variable for each data point – or a multiplicative index that aggregates the indicators, potentially weighting some. More sophisticated indices are principal component analysis (PCA), which weights individual indicators by how much additional variation they explain compared to the others, and principal factor analysis (PFA), which seeks to measure an underlying unobservable factor by how much it influences the observable indicators. Indices are useful to make comparisons of variables across data points – for instance, government policy across countries. An index should not be taken as a measure of itself of the variable across the data points. It is rather a method of ranking values so as to facilitate more in-depth measurement and reflection.[77] The Oxford Stringency Index[78] has been referred to in policy debates worldwide. Another useful, analytical index is the INFORM Epidemic Risk Index, which aims to identify "countries at risk from health and humanitarian impacts of COVID-19 that could overwhelm current national response capacity, and therefore lead to a need for additional international assistance".[79]

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[77] Hale, T., *Variation in government response to covid-19*, Blavatnik School of Government, Oxford, 2021, <www.bsg.ox.ac.uk/covidtracker>, accessed 11 November 2022.

[78] See <https://ourworldindata.org/grapher/covid-stringency-index>.

[79] European Commission, *Inform COVID-19 Risk Index*, European Commission, Brussels, June 2022, <https://drmkc.jrc.ec.europa.eu/inform-index/inform-covid-19#:~:text=The%20INFORM%20COVID%2D19%20Risk,need%20for%20additional%20international%20assistance%E2%80%9D>, accessed 11 November 2022.

TRENDS ANALYSIS

A trends analysis is an analysis over time of changes in a variable of interest. For RCCE this could be a comparison of the community's practice of protective behaviours from one time – for example, the start of the pandemic – to another time – for example, a year later. Trends analysis can be done with a single variable or with several variables. For example, a multivariable analysis may compare the practice of protective behaviours over time in relation to the prevalence of COVID-19. Trends analysis requires the availability of data at different times, of course. Therefore, it is best for longitudinal surveys or else data that can be routinely collected, which might include omnibus surveys, observational data or Big Data. The Johns Hopkins trends analysis for COVID-19 is a good example.[80]

PREDICTIVE ANALYSIS

Predictive analysis is where data are analysed to infer relationships between data points and to predict future behaviour based on these relationships. The behaviour of each individual data point is predicted based on its observed behaviour. This allows the identification of the variables associated with the individuals that best explain why something is predicted to occur. In Ethiopia, Yehualashet and colleagues (2021) carried out an analysis to assess the predictors of adherence to COVID-19 prevention measures among communities in North Shoa Zone, based on a health belief model using regression analysis. The analysis estimated the odds of a community member's adherence to COVID-19 safety measures, based on: whether they perceived that they were susceptible to COVID-19; whether they perceived barriers to the adoption of safety measures; and self-efficacy for adoption of safety measures. The regression analysis enabled a quantification and ranking of predictors of adherence to safety measures.[81]

INTEGRATED DISEASE MODELS

Better data, more powerful computers and theoretical advances have endowed epidemiological models with greater accuracy. However, a fundamental limitation remains in how well they capture a key parameter: human behaviour. Epidemiological models have generally represented societies as 'compartments' of identical individuals all mixing randomly, with little attention to the interaction between the epidemic and individual or group behaviour. Increasingly, the evidence shows that people will change their behaviour to try to reduce their risk from diseases.[82] Better incorporation of social and behavioural factors into disease models is expected to improve their predictive accuracy and thereby inform more effective response measures and policies, including identifying variations in risk, and to localize materials to which RCCE strategies can be tailored.

In recent years there has been a shift in epidemiological modelling. The role of social science research during the West Africa and Democratic Republic of the Congo Ebola outbreaks, in particular, has led to more active integration and operationalization of social and behavioural data, including epidemiological and geospatial information, as part of epidemic response. A quick overview is provided here of the work being done to integrate social science data into disease models. Readers are referred to *A review and agenda for integrated disease models including social and behavioural factors* by Bedon et al. (2021) for a more detailed discussion.[83] Please also see a study by Eikenberry et al. (2020) for an analysis of how adoption of face masks can influence COVID-19 prevalence.[84]

Economic epidemiology uses the concept of prevalence-elastic behaviour to quantify how population-level infection rates and personal infection status influence the adoption of behavioural recommendations, such as vaccination and social distancing.

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[80] See <https://ccp.jhu.edu/kap-covid/kap-covid-trend-analysis-for-23-countries/>.

[81] Yehaualashet, S.S., et al., 'Predictors of adherence to COVID-19 prevention measure among communities in North Shoa Zone, Ethiopia based on health belief model: A cross-sectional study', *PLOS One*, vol. 16, no. 1, January 2021, <https://pubmed.ncbi.nlm.nih.gov/33481962/>, accessed 11 November 2022.

[82] Ferguson, N., 'Capturing human behaviour', *Nature*, April 2007.

[83] Bedon, J., et al., 'A review and agenda for integrated disease models including social and behavioural factors', *Nature Human Behaviour 5*, 834–846, July 2021, <www.nature.com/articles/s41562-021-01136-2>, accessed 11 November 2022.

[84] Eikenberry, S.E., et al., 'To mask or not to mask: Modeling the potential for face mask use by the general public to curtail the COVID-19 pandemic', *Infectious Disease Modelling*, vol. 5, 2020, 293–308, <www.sciencedirect.com/science/article/pii/S2468042720300117>, accessed 11 November 2022.

Behaviour change as network dynamics models disease spread in contact networks. It provides a representation of the heterogeneity and complexity of human behaviour in the form of the network – or graph – in which an epidemic can occur.

Coupled contagion models provide insights into the role of fear in epidemic dynamics. Specifically, fear is modelled as a contagion that influences behavioural decisions, which in turn impact disease transmission.

Agent-based modelling models disease transmission across agents that are representative of the socio-demographic, clinical and other characteristics that make up a population being affected by an outbreak. Each individual is explicitly represented, and there is no loss of information due to aggregating or pooling individuals into homogeneous groups. The hallmark of agent-based modelling is that macroscopic patterns emerge from direct agent interactions.[85]

INFODEMIOLOGY

Public health surveillance is defined by WHO as the continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation and evaluation of public health practice. Syndromic surveillance is the analysis of medical data and societal data to detect or anticipate disease outbreaks. One method of syndromatic surveillance is infodemiology. Infodemiology is the methodological analysis of internet content to provide information that can contribute to epidemiological knowledge. Infodemiology is rooted in the idea that – at least for some areas and applications – there is a relationship between population health and information and communication patterns.[86] There is some evidence to support this view. Research has shown, further, that geospatial mobile phone data could accurately describe and predict the movement of individuals and thereby the spread of diseases such as malaria and H1N1 influenza.[87] As with Big Data, an advantage of infodemiology is that it may allow quick responses to emerging public health concerns. Traditional epidemiological data sources can take some time to produce results, whereas infodemiology data can often be made quickly available. See also the discussion on Big Data and infodemics.

INTERPRETATION

Triangulation

Triangulation is a long-practised method of establishing the location of an object in navigation. It enables those conducting an analysis to be more confident that the conclusions are reliable. For RCCE, triangulation can be done by analysing several sources of information – for example, combining survey data with observational data. Qualitative data can also be used for triangulation, adding nuance and depth to the analysis.

Whatever the data source that is being used, it is important to bear in mind that one data source cannot be expected to provide all of the information needed to understand the result being measured. For this reason it is recommended to triangulate data sources when conducting analysis. Triangulation is where a question – for example, *Are people practising recommended measures to protect themselves from COVID-19?* – is looked at from different points of view.

VISUALIZATION

Dashboards are developed to provide a structured overview of a programme or situation. Dashboards can be broken down according to role and are either strategic analytical, operational or informational.[88]

As dashboards structure information on a programme or situation, they help to develop an understanding of the information. It is important to think through how the information will be presented. The dashboard should be broadly coherent with the analytical framework, research agenda, theory of change or results framework being used.

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[85] Bedon, J., et al., 'A review and agenda for integrated disease models including social and behavioural factors', *Nature Human Behaviour 5*, 834–846, July 2021, <www.nature.com/articles/s41562-021-01136-2>, accessed 11 November 2022.

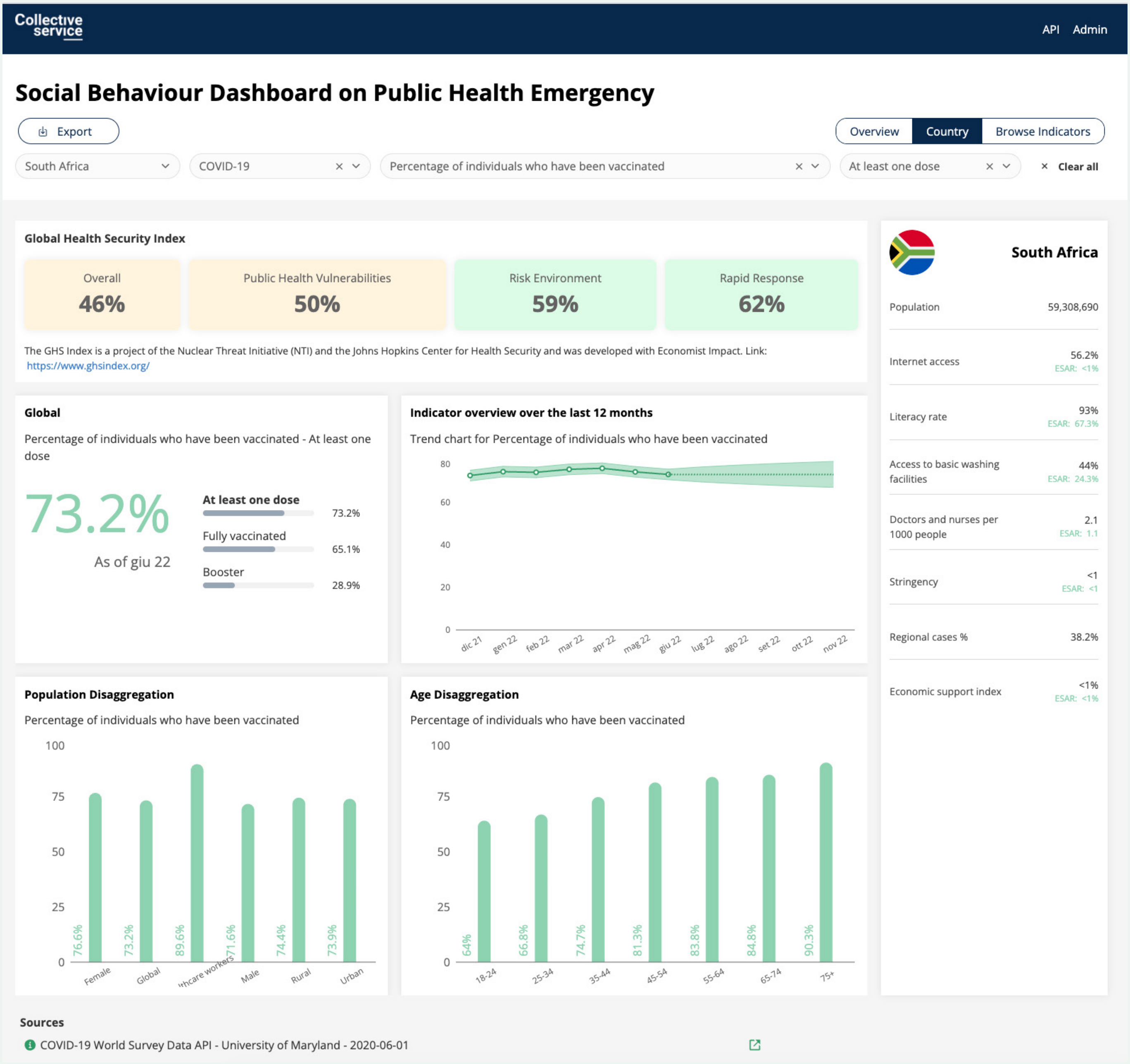
[86] Eysenbach, G., 'Infodemiology and infoveillance: Framework for an Emerging Set of Public Health Informatics Methods to Analyze Search, Communication and Publication Behavior on the Internet', *Journal of Medical Internet Research*, vol. 11, no. 1, 2009, <www.jmir.org/2009/1/e11/>, accessed 11 November 2022.

[87] World Health Organization, *WHO guidelines on ethical issues in public health surveillance*, WHO, Geneva, 2017.

[88] See <https://en.wikipedia.org/wiki/Dashboard_(business)#cite_note-Stephen_Few_2006-5>.

Dashboards can include one or several types of data. If several types of data are being used for the same variables, then data matching techniques will have to be used. The Collective Service has reviewed over 340 quantitative studies related to RCCE for COVID-19 conducted in the field or at the global level by partners and academic communities. It has undertaken extensive data matching to compile the data from these studies together in the Collective Service Behavioural Indicators Dashboard.[89] The dashboard can be used to measure and track key social behavioural data on COVID-19 at global, regional and country level. Individual dashboards are available for 187 countries. The dashboard is one of the richest data resources available for country-level RCCE actors. A snapshot of the dashboard for South Africa is provided in Figure 6. Several other very useful dashboards have been developed by partner agencies. The Collective Service has a list of useful dashboards[90] that can be referred to.

FIGURE 6. SCREENSHOT OF THE COLLECTIVE SERVICE BEHAVIOURAL INDICATORS DASHBOARD FOR SOUTH AFRICA



Social Behaviour Dashboard on Public Health Emergency

South Africa | COVID-19 | Percentage of individuals who have been vaccinated | At least one dose

Global Health Security Index

Overall	Public Health Vulnerabilities	Risk Environment	Rapid Response
46%	50%	59%	62%

The GHS Index is a project of the Nuclear Threat Initiative (NTI) and the Johns Hopkins Center for Health Security and was developed with Economist Impact. Link: https://www.ghsindex.org/

Global

Percentage of individuals who have been vaccinated - At least one dose

73.2%

As of giu 22

At least one dose	73.2%
Fully vaccinated	65.1%
Booster	28.9%

Indicator overview over the last 12 months

Trend chart for Percentage of individuals who have been vaccinated

South Africa

Population	59,308,690
Internet access	56.2% ESAR: <1%
Literacy rate	93% ESAR: 67.3%
Access to basic washing facilities	44% ESAR: 24.3%
Doctors and nurses per 1000 people	2.1 ESAR: 1.1
Stringency	<1 ESAR: <1
Regional cases %	38.2%
Economic support index	<1% ESAR: <1%

Population Disaggregation

Percentage of individuals who have been vaccinated

Age Disaggregation

Percentage of individuals who have been vaccinated

Sources

COVID-19 World Survey Data API - University of Maryland - 2020-06-01

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[89] See <www.rcce-collective.net/data/social-behavioural-data/>.

[90] See <www.rcce-collective.net/data/partners-dashboards/>.

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