

Universal access to trustworthy health information: Development of the World Health Organization's 'Your life, your health: Tips and information for health and wellbeing' digital resource

Danielle M Muscat, Rachael Hinton, Shyama Kuruvilla, Don Nutbeam

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Universal access to trustworthy health information: Development of the World Health Organization's 'Your life, your health: Tips and information for health and wellbeing' digital resource

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Abstract

Background: Access to trustworthy, understandable and actionable health information is a determinant of health and an essential component of Universal Health Coverage and Primary Health Care. The World Health Organization (WHO) has developed a new digital resource for use with the general public to improve health and well-being at and across different life phases and to support people to care for themselves, their families and community.

Objective: The aim of this manuscript is to describe the methodology used to develop the resource – 'Your life, your health: Tips and information for health and well-being' – in order to explore a potentially transferable approach to making trustworthy health information accessible, understandable and actionable for the general public in a digital format.

Methods: A five-step process was used to develop Your life, your health. This included: a) a review and synthesis of existing WHO technical guidance, member state health and health literacy plans and international human rights frameworks to identify priority messages; b) the development of messages and graphics to be accessible, understandable and actionable for the public through the application of health literacy principles; c) engaging with experts and other stakeholders to refine messages and message delivery; d) presentation of priority content in an accessible digital format; and e) piloting with potential users to develop and adapt the resource based on feedback and new evidence. The 'Your life, your health' online resource adopts a life course approach to organize health information based on priority actions and rights that support people's health and wellbeing at, and across, different life phases as well as on specific health topics. The resource supports users in developing health literacy skills through advice on how to ask questions of health workers, how to make good decisions about personal and family health, and how best to use digital media to obtain health information. It also reflects the ambitions of the Sustainable Development Goals, to provide "essential" information on the social determinants of health, and clarifies the different roles that individuals, frontline workers, governments and the media play in promoting and protecting health.

Results: The 'Your life, your health' online resource adopts a life course approach to organize health information based on priority actions and rights that support people's health and wellbeing at, and across, different life phases as well as on specific health topics. The resource supports users in developing health literacy skills through advice on how to ask questions of health workers, how to make good decisions about personal and family health, and how best to use digital media to obtain health information. It also reflects the ambitions of the Sustainable Development Goals, to provide "essential" information on the social determinants of health, and clarifies the different roles that individuals, frontline workers, governments and the media play in promoting and protecting health.

Conclusions: Making health information available – including to the public – is an essential step in the global health information system. The development process for the 'Your life, your health' online resource outlined in this article offers a structured approach to public communication which can be adapted for use within and beyond the WHO to translate technical health guidelines into accessible, understandable, and actionable health information for the general public.

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Key words

Health communication; health literacy; consumer health information; digital health; universal health care

Introduction

Access to reliable, understandable and actionable health information is a determinant of health and an essential component of Universal Health Coverage (UHC)^{1,2}. As with other social determinants of health there is significant variability and inequity in access to health information and in people's capacity to retrieve, appraise and use it to make decisions about health (referred to as health literacy³). Differences in levels of access to health information and in health literacy can be observed within populations in countries, as well as between countries ⁴⁻⁷.

Digital technology has significantly improved access to health information for many people and several reviews of digital health interventions have demonstrated the feasibility and potential effectiveness of eHealth and mHealth interventions for a range of health conditions in low-, middle- and high-income countries⁸⁻¹². However, the 'digital divide' is real and powerful in its impact on people's access to health information¹³ and perpetuates many existing health inequities. In addition, when health information is accessed from digital platforms (i.e. any electronic communication tool including websites and social media), it is not consistently reliable, understandable and actionable.

Reliable health information comes from a trusted source and is based on an objective interpretation of the available scientific evidence¹. To be understandable and actionable, members of the public with diverse backgrounds and varying levels of health literacy should be able to understand key messages and identify what they can do based on the information presented¹⁴. However, these fundamental requirements of reliability, understandability and actionability are not always met. This was brought into sharp relief during the COVID pandemic when unintended misinformation and deliberately circulated disinformation became widely available and was often amplified by social media ¹⁵⁻¹⁷. A significant proportion of information sources are also biased, sometimes unconsciously but often deliberately, especially commercial communications designed to promote specific products or services ¹. Even when health information comes from a reliable, trustworthy source, it is rarely presented in a form that a majority of people could understand and act on to make decisions about health ^{18,19}.

In response to the global challenge of misinformation and disinformation during the COVID pandemic the World Health Organization (WHO) developed a *Framework for Managing the COVID-19 Infodemic* that proposed a range of actions which WHO Member States and civil society could apply to address the infodemic. This included clear guidance on ensuring that health information was provided in a form that was "actionable" and "presented in ways that are understood by and accessible to all individuals in all parts of all societies" ²⁰. This Framework recognised the important role WHO, other UN partners and civil society organisations must play in providing reliable health information that is adaptable for use

in a wide range of contexts.

Long before this, WHO's 1946 Constitution specified that "informed opinion and active cooperation on the part of the public are of the utmost importance in the improvement of the health of the people"²¹. Despite this historical mandate, WHO has generally limited its health communication activities to the provision of technical advice and support to member states. In general, these communications are not systematically designed for direct use by the general public. ¹⁹ Over the past 25 years this has been gradually changing and there are now good examples of WHO global health information that can be accessed and used more directly with the public – such as WHO "Facts in Pictures"²²; "Global Health Days"²³; and public health advice on COVID-19²⁴. At present much of the information available to the public from WHO tends to be organized by different health topics and/or is limited to targeted communication campaigns or events. It is not always easily accessible and is not available direct to public in a consistent form or in an integrated way.

To address this, WHO has for the first time developed an integrated resource of public health advice; *Your life, your health: Tips and information for health and well-being*² (referred to in short form as '*Your life, your health*'). This new digital resource, specifically developed for use by and with the general public, has been designed to make trustworthy health information accessible, understandable and actionable as a contribution towards achieving UHC. This paper describes the method used to develop the resource and reflects on generalisable lessons in health communication which can be applied within and beyond the WHO.

Methods: Development of the 'Your life, your health' resource

A five-step process was used to develop *Your life*, *your health*². This included:

- 1) Step 1 a review and synthesis of existing WHO technical guidance, member state health and health literacy plans and international human rights frameworks to identify evidence-based health guidance for the public.
- 2) Step 2 the development of messages and graphics to be accessible, understandable and actionable for the public through the application of health literacy principles;
- 3) Step 3 engaging with experts and other stakeholders to refine messages and message delivery; and
- 4) Step 4 presentation of priority content in an accessible digital format.
- 5) Step 5 adaptation and updates based on feedback and new evidence.

Below, we outline in detail the methods related to the first four steps. Similar to WHO guidelines, the resource will evolve and be updated as new evidence becomes available. It will also need to be adapted to different country contexts and for different audiences in Step 5.

Review of evidence-based interventions and guidance

The first stage of resource development was focused on identifying reliable health information to be included as the basis for '*Your life, your health*'. There is an overwhelming volume of health information accessible to most people. We sought to identify evidence-based public health actions that individuals or communities could take to care for themselves, their families and community —either with or without the support of the health system—to improve health and well-being at and across different life phases. We then prioritized this information by life phase to reduce the volume of information provided in the resource.

In making decisions on priorities, we identified interventions/actions within current global and national health strategies that required or presumed an element of individual, caregiver, family, or community initiative or engagement. Interventions/actions that were purely health provider-oriented and/or related to specialized clinical and surgical interventions and care were mostly excluded from the review process.

To identify priority actions, we purposively searched 21 WHO global health strategies across the life-course as well as additional strategies, guidance, and evidence compendia suggested by WHO partners. This included strategies for specific target populations and life phases (for example, WHO Global Strategy for Women's, Children's and Adolescent's Health), communicable and non-communicable diseases (for example, WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases) and cross-cutting strategies on systems, principles and determinants (for example, Healthy Systems for Universal Health Coverage: A Joint Vision for Healthy Lives). See Supplementary Table 1 for a full list.

We also searched the WHO UHC Compendium of Interventions²⁵ and the Disease Control Priorities 3rd Edition (DCP3)²⁶ interventions (community worker and health post levels). The UHC Compendium is a database of health services and intersectoral interventions designed to assist countries in making progress towards Universal Health Coverage. The database includes over 3500 health actions across different health areas. The DCP3 contains an up-to-date comprehensive review of priority health interventions and intersectoral policies to reduce mortality and disability which are evidence-based,

scalable, and adaptable in multiple settings. Information from the Compendium and DCP3 was cross-checked with the main global causes of mortality and morbidity at each life stage to ensure that the reviewed evidence-based guidance and interventions addressed these.

Finally, we searched for available, contemporary national and regional health strategies, action plans, and roadmaps of all 194 WHO member state countries and 6 regions, with a focus on documents in English and in French. Documents were sourced, first, via WHO's Country Planning Cycle Database²⁷. If a current document was unavailable in the Planning Cycle Database, a search was carried out on Google or PubMed using the search string [(("National") AND ("Health")) AND (("Strategy") OR ("Road Map") OR ("Action Plan")) AND (Name of Country or Region)]. We considered "contemporary" to mean any strategic document informing planning in a member state beyond 2019. We found relevant information from 84 countries from across the six WHO regions shown in Supplementary Table 2.

Synthesis of evidence

From the documents identified in the evidence review we listed the interventions/actions that required or presumed an element of individual, caregiver, family, or community initiative or engagement. Using a content analysis approach described by Mays, Pope and Popay²⁸, we deductively classified these actions/interventions according to broad life phases adapted from the WHO Life Course Framework²⁹. The life phases included: pregnancy, birth and after childbirth; newborns and children under 5 years; older children aged 5 to 9 years; adolescence and youth aged 10-24 years; early and middle adulthood 25-64 years; and later adulthood 65 years and over.

Within each life phase, interventions/actions were coded into broad topic areas drawn from the broad health topics on the WHO website ³⁰. As we reviewed the content, we added further health topics until we reached the saturation of categories. The final categories of health topics are shown in Box 1.

- Care and communication in families
- Nutrition
- Physical activity
- Mental health
- Immunization
- Sexual and reproductive health (including family planning)
- Healthy environments

- Social participation
- Violence and injuries
- Smoking, alcohol and drugs
- Disabilities
- Connecting to services in health and other sectors
- Emergency illness
- Communicable disease
- Non-communicable disease

Content analysis was again applied to identify recurrent messages arising from the tabulated content for each health topic.

Finally, we used the international human rights framework and a categorization of human rights by the Sustainable Development Goals (SDGs) to develop a 'matrix' of human rights by life phase (e.g. rights on having children) and cross cutting rights (e.g. right to health). This was to ensure that we moved beyond providing only information that required individual action to ensure that people are informed both about their rights and expectations of government, as well as personal responsibilities.

Using this methodology, we had reasonable confidence in the quality and consistency of the evidence and were able to use the results as the basis for prioritization. To keep the volume of information manageable, we aimed to identify five essential health messages for each stage in the life course, or specific health topic. We identified the messages that had the highest potential for promoting health and that were most frequently mentioned across the collated information. Inevitably, in making such decisions, some issues of importance to individuals, communities and countries have not been included and people's rights to health can vary between countries. We recognize the importance of these contextual considerations and include it as an important part of our pilot-testing and adaptation actions indicated below.

Application of health literacy principles to make content accessible, understandable, and actionable

Following the prioritization of health messages, the next step was to draft the main messages and

design the resource's information architecture in a form that was optimally accessible, understandable, and actionable. We reviewed the national health and health literacy plans of 84 countries where publicly accessible documentation was available in English or French (identified above) to understand how countries had developed public-facing messages that were aligned with WHO's evidence-based guidance and global strategies. We also applied health literacy principles drawing upon the *Health Literacy Universal Precautions Toolkit* ³¹, and the *Health Literacy Online* ³² resource. We adopted a tiered structure where information was sequenced from simple to more detailed messages at a level of Grade 8 or less readability. This would allow the reader to move from a first level of five main messages to a second level where each message is broken down into manageable, explicit steps. Further information could then be made available via links to WHO infographics, videos and fact sheets depending on needs and preferences. Each message started with a verb to be actionable and worded in a direct way (e.g. 'Learn about..' 'Find out...'). Content cues or markers (e.g. bullet points) were also used to highlight/draw attention to each point. This would also allow for easy scanning of the content.

We revised the messages to ensure readability no higher than 8th grade level and developed three styles of frequently used graphics for different life phases and messages (photos, illustrations, and infographics).

Review by health specialists and health literacy, communication and IT experts

We developed a web-based prototype of the resource for consultation. Between October 2019 and March 2020, we conducted consultations on the draft resource with over 30 health and health literacy experts and communication and IT experts. This included consultation and review across WHO departments, including life course, health workforce, reproductive health and rights, environmental health, health promotion and health literacy, and communications, among others. We sought feedback via an online survey on the content, particularly the choice of prioritized actions and rights, as well as advice on the format and presentation of the messages and on potential uses and potential users. We also sought feedback on the different types of graphics related to the main messages to ascertain the most appropriate format for potential users. Finally, we also consulted with communication and IT experts within WHO on how its digital platform can be used to support the use and dissemination of the resource depending on how people use the WHO website. This included translation of the content into other languages and graphics adaptation for different audiences and communication channels.

Presentation of priority content in an accessible digital format

Following the consultation process, the content was revised to incorporate any feedback on prioritised actions and rights. The WHO communications and web team supported the development of resource for the WHO website and for accessibility, it is available as a standalone resource on the WHO website. Health advice is available first by life phase. Here the resource provides simple public information first on health topics, related skills and rights, and then links to more detailed WHO technical information and products. In addition to the resource links, each webpage links back to the landing page which guides users to information on other health topics, health determinants, rights across the life course and how to find and use health information.

Results: the online resource

Through the multi-stage process outlined above, the 'Your life, your health: Tips and information for health and well-being' online resource was designed to be accessible, understandable and actionable. The resource adopts a WHO life course approach ²⁹ to organize health information based on priority actions and rights that support people's health and wellbeing at, and across, different life phases. See Figure A.

Figure A. Screenshots from the Your life, your health: Tips and information for health and well-being online resource

Organization of health information by life phases:









Example of tiered information structure:



Embedded health literacy skills:



The consultation process also confirmed for us that health information should not be focussed entirely on individual behaviours and risks, but should more accurately reflect the ways in which the social determinants of health fundamentally influence people's choice of actions and their capacity to engage successfully in responding to information. For many people in most parts of the world, health decisions and actions are substantially restricted by social and environmental factors beyond their control and people's ability to respond to health information is not universal and equal. In addition, we recognised that people rarely make health decisions in isolation but rather through interaction and support from other people, institutions, organizations, services and systems. Given this context, – a section on *A Healthy World* – was integrated to reflect the ambitions of the SDGs by providing information on the social determinants of health, and clarifying the different roles that individuals, frontline workers, governments and the media play in promoting and protecting health. A section on *How to find and use health information* was also included to more overtly support users in developing health literacy skills. It includes advice on how to ask questions of health workers, how to make good decisions about personal and family health, and how best to use digital media to obtain health information.

Discussion

As a contribution to improving universal access to trustworthy health information, WHO has developed an integrated resource of health advice for use by and with the general public. The resource is based on a synthesis of evidence-based guidance derived from sources from accessible WHO and national-level documents. It is organized to reflect priority actions and rights at, and across, different life phases. It concurrently seeks to build health literacy skills as well as acknowledging and promoting awareness of the social determinants of health.

Making health information available – including to the public – is an essential step in the global health information system¹. Yet, there is little published guidance on how to achieve this at a global scale. The development process for *Your life*, *your health* outlined in this article – including reviews of technical guidance and health strategies, the application of health literacy principles, and an expert review and iterative consultation process – offers a structure for which can be adapted for related purposes within and beyond the WHO to translate technical health guidelines into accessible, understandable, and actionable health information for the general public. It has also offered generalisable lessons related to developing public health information:

Ensuring reliability and winning trust in the source of information: In a context where information is abundant and facts have become contestable, it takes considerable effort to identify the most trustworthy information for communication to the public. Given the breadth of the resource and scope of health topics included in Your life, your health we reviewed existing global strategies and action plans that are publicly accessible and which already synthesised evidence-based recommendations. By ensuring transparency in the sourcing of evidence and identifying core, consistently advocated health information we have sought to ensure that the information provided is recognisable, reliable and trustworthy for those using the resource. This synthesis approach was much more efficient than a review from primary studies and allowed for the identification of evidence and recommendations that were consistent across strategies and action plans. Whilst we recognise that this methodology will result in the exclusion of some types of evidence – including, for example, newer or emerging evidence which is yet to be included in global strategies - we felt that this approach offered the most secure method for ensuring trust in the information provided, and was supported by the expert consultation and review. Transparency in decision-making is further supported by providing links to reports, strategies and technical documents throughout the resource (See Figure A).

Ensuring accessibility in the content and its presentation: Reducing the volume and

simplifying the communication of messages to make them universally understandable is challenging and requires close attention to language, information structure and use of graphics and other presentational aids. The use of existing guidelines and resources (for example, the Universal Precautions toolkit and Health Literacy Online) as well as automated tools such as online readability calculators can help with this. As the resource is tested, feedback from frontline workers and direct from the public will be used to refine the content and presentation. We recognise that partnering with the public will offer incremental improvements to the understandability of health information materials ³³ ³⁴.

Supporting practical action: In the field of health literacy, health information materials are considered *actionable* when consumers of diverse backgrounds and varying levels of health literacy can identify what they can do based on the information presented ¹⁴. In the development of *Your life*, *your health*, this was operationalised by ensuring that messages were linked to practical advice on actions that can be taken by individuals, families and communities. Beyond this, however, we also sought to build a range of transferable health literacy skills by including sections of the resource related to how to find information from reliable and trustworthy sources, including from healthcare professionals, the internet and other forms of media. We also included information about the social determinants of health and the different roles that individuals, frontline workers, governments and the media play in promoting and protecting health.

Future directions

As a WHO global good, *Your life*, *your health* is available to all. The resource is hosted online on the WHO website, and links to Health Topics where people might search for public health information. To increase its accessibility, health advice within the resource is available as downloadable and shareable 'digital cards' with links to expanded messages and resources (See Figure B for an example of this). Planned next steps include engaging with the WHO academy to link the resource content to relevant courses and topics for learners from the global health workforce. Other adaptations include integrating *Your life*, *your health* in home-based records, such as integrated maternal and child health books³⁵, which often include health education messages, as well as using content on the WHO Facebook (chatbot) page. Like WHO guidelines, the resource will evolve and need to be updated as new evidence becomes available. Standard practice steps and a template have been developed to ensure the health literacy principles described here (e.g. tiered presentation of information; testing readability) will continue to provide a guiding framework as new information is integrated. A guidance document has also been developed for WHO departments for developing new *Your life*, *your health* content in a standardized way for the WHO website.

Figure B. Digital cards adapted from the 'Your life, your health: Tips and information for health and wellbeing' online resource



With the publication of the resource, we have started a consultative process to iteratively refine the resource and will be followed up by additional co-development and user testing, including with WHO representatives at the regional and country levels, UN agencies and the general public. The benefits of engaging stakeholders in such a way are well-documented and will likely include enhanced relevance, quality and authenticity; generation of alternative and innovative ideas and enhanced sustainability of the resource ³⁶. At minimum, messages will need to be adapted for local use in different communication contexts and campaigns. This may include adaptation to meet the social and cultural information preferences of different audiences and communication channels, translation into other languages and graphics adaptation. It is necessary to ensure that the resource is culturally acceptable, appropriate to local practice and availability of health resources and services, and actionable in a variety of contexts¹. Finally, consultations will need to consider feasibility, potential effectiveness and necessary adaptations of this online digital resource in different settings. It will be important to balance digital engagement with appropriately resourced in-person engagement to ensure that vulnerable groups and those without access to digital channels are not left behind.

Conclusion

Current rising momentum and scale for digital technologies in the UHC era offers a great opportunity to provide more equitable access to information globally. The 'Your life, your health' resource is the first of its kind to be developed by WHO. It aims to make technical and often disparate health information available to the general public in an integrated, understandable and actionable way. Beyond the tangible resource itself, the system-level approach to the development and hosting of

universal health information described here could have a transformative effect in helping countries achieve national health goals and the SDGs and also prepare for emerging challenges. We need now to focus attention on issues of implementation at the global, regional and country levels to sustain progress, continue to build WHO's contribution to public education, and ensure a robust legacy of UHC.

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Contributors

All co-authors contributed to the conceptualisation and finalisation of this article. Your life, your health was developed as a WHO global public health good. SK led the development of the Your life, your health resource, with DN and DM providing health literacy expertise and substantive inputs and RH providing technical support and coordination. DM is a Senior Research Fellow and Westmead Lead of the Sydney Health Literacy Lab at the Sydney School of Public Health, The University of Sydney. RH is an anthropologist and independent technical and writing consultant engaged by WHO. DN is Professor of Public Health at the Sydney School of Public Health, The University of Sydney. DM and RH developed the first draft of the paper, with inputs from SK and DN. DM incorporated revisions and comments on the subsequent drafts of the paper from all authors.

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Conflicts of interest

DM is a co-director of a health literacy consultancy company, Health Literacy Solutions PTY Ltd. DM takes no personal income from Health Literacy Solutions PTY Ltd.

Supplementary Files

Supplementary Table 1. Global strategies, action plans, and guidance included in the evidence review

Global Strategy for Women's, Children's, and Adolescent's Health

Global Strategy and Action Plan on Ageing and Health

Strategies Toward Ending Preventable Maternal Mortality (EPMM)

Every Newborn: An Action Plan to End Preventable Deaths

Framework for Nurturing Care for Early Childhood Development

Global Accelerated Action for the Health of Adolescents (AA-HA!)

Reproductive Health Strategy to Accelerate Progress towards the Attainment of International Development Goals and Targets

INSPIRE: Seven Strategies for Ending Violence Against Children

Global Vaccine Action Plan 2011-2020

Accelerated Progress on HIV, Tuberculosis, Malaria, Hepatitis and Neglected Tropical Diseases

Global Action Plan for the Prevention and Control of Noncommunicable Diseases

Global Plan of Action to Strengthen the Role of the Health System to Address Interpersonal Violence

Global Strategy to Stop Health-Care Providers from Performing Female Genital Mutilation

Roadmap for Action: Integrating Equity, Gender, Human Rights and Social Determinants into the Work of WHO

Tackling NCDs: 'Best Buys' and Other Recommended Interventions for the Prevention and Control of NCDs

The Helsinki Statement on Health in All Policies.

Healthy Systems for Universal Health Coverage: A Joint Vision for Healthy Lives.

A Vision for Primary Health Care in the 21st Century: Towards Universal Health Coverage and the Sustainable Development Goals.

Draft WHO Global Strategy on Health, Environment and Climate Change

The Minsk Declaration: The Life-Course Approach in the Context of Health 2020

Global Strategy on People-Centered and Integrated Health Services

UNICEF Facts for Life

Timed and Targeted Counselling

The Lancet and BMJ series/collections on key interventions2

Supplementary Table 2. Countries for which National Health Strategies were included in the evidence review

Algeria	Cameroon	France	Kenya	Maldives	Niue	Eswatini / Swaziland
Antigua & Barbuda	Canada	Gabon	Kiribati	Mali	Norway	Tajikistan
Australia	Chad	Gambia	Kuwait	Malta	Oman	Togo
Bahamas	China	Georgia	Lao PDR	Marshall Islands	Papua New Guinea	Trinidad & Tobago
Bangladesh	Congo	Guinea	Lebanon	Mauritania	Qatar	Turkey
Belgium	Cook Islands	Guyana	Lesotho	Micronesia	Rwanda	Tuvalu
Benin	Czech Republic	Haiti	Liberia	Mozambique	Saint Lucia	Uganda
Bhutan	DPR Korea	Ireland	Libya	Myanmar	Samoa	United Kingdom
Botswana	Dominica	Indonesia	Macedonia	Namibia	Senegal	Uzbekistan
Brunei	Estonia	Jamaica	Madagascar	Nauru	Singapore	Vanuatu
Bulgaria	Ethiopia	Jordan	Malawi	Nepal	Solomon Islands	Zambia
Cambodia	Fiji	Kazakhstan	Malaysia	New Zealand	Sri Lanka	Zimbabwe
Regions =	AFRO	WPRO	EURO	SEARO	РАНО	EMRO

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Abbreviations

DCP3 – Disease Control Priorities 3rd Edition

SDGs – Sustainable Development Goals

UHC – Universal Health Coverage

UN – United Nations

WHO – World Health Organisation