

Health literacy around the world:

policy approaches to wellbeing
through knowledge and
empowerment



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About this report

Health literacy around the world: policy approaches to wellbeing through knowledge and empowerment is an

Economist Intelligence Unit report, sponsored by Reckitt.

As healthcare systems grow in complexity and public health challenges emerge (such as covid-19), health literacy is essential to empower societies to manage their wellbeing and become more resilient. This independent report discusses the evidence on the important role health literacy plays in helping people improve their own health and wellbeing. It assesses policy and practice trends through the lens of the healthcare and education sector and how digital technology can drive change. It examines the implementation of health literacy initiatives in countries around the world and outlines policy directions and barriers.

The findings of this report are the result of multiple research phases: first, a pragmatic literature assessment across academic and grey literature informed the analytical framework of the report and the development of key narratives. Then, a health literacy “snapshot” analysis was conducted across seven countries in four domains: health literacy policy and measurement, health literacy in the healthcare sector, integration of health literacy in education, and the regulation of digital health content. This “snapshot” was based on desk research across publicly available sources. Lastly, interviews were conducted with experts working in academia, the health sector, government and business.

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- **Kristine Sørensen**, PhD, founder, Global Health Literacy Academy, Denmark; president, International Health Literacy Association

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Further methodology notes:

Pragmatic literature assessment: a search for relevant and recent publications on health literacy was conducted on platforms Google Scholar and PubMed. The search identified key publications from the year 2010 onwards and prioritised publications in the past five years in search for the latest developments in the field. The most relevant publications were categorised according to focus areas. The search encompassed terms such as health literacy broadly, and health literacy in the context of education, healthcare, technology and policy. More than 100 articles and publications were examined to build the foundation of this analysis.

Snapshot analysis: the analytical framework was informed by the literature assessment and further developed by healthcare and public policy specialists at the Economist Intelligence Unit. Country research focused on online publicly available sources, with priority given to official documents and other reputable sources (government documents, government websites, academic publications, specialised healthcare publications). This report discusses the key findings of this analysis and sources are indicated (as footnotes).

Report and interviews: This report encompasses the findings from the research processes above. It also features the insights of international experts in the field of health literacy. Contributions by experts helped discover or validate the latest knowledge and best practices in the field. They also supported the analysis of the report in adding nuances, complexities and challenges faced in different sectors and regions of the world. Their direct contributions were verified upon completion of the report.

Executive summary

Health literacy improves lives and reduces health inequities. Building up people's competencies and knowledge regarding health can empower them and boost their resilience, helping them in managing their health and wellbeing in complex healthcare systems. Promoting health literacy can boost the health of future generations and allow healthcare professionals and their organisations to better engage with people in a patient-centric way. Not only is it a key determinant of health, health literacy can create "herd immunity" against misinformation and disinformation, challenges which are growing since the covid-19 pandemic.

This report by the Economist Intelligence Unit explores recent evidence in the field of health literacy, with a focus on its impact, challenges, solutions and opportunities. The following set of priorities can be drawn based on findings from the research to engage people, healthcare professionals, providers and policy makers:

Definitions and overarching policy

- **As healthcare systems grow in complexity and public health challenges such as covid-19 emerge, health literacy is becoming a more necessary asset.** A multidimensional concept, health literacy can be defined as the competencies for accessing, understanding, appraising and acting on information for the benefit of health. The value of health literacy has been examined by the academic literature across a wide range of dimensions (see Chapter 1). For example, at the personal level, health literacy allows people to make better decisions regarding their own self-

care and health, resulting for example in timely and effective use of health care and prevention services. Similarly, it allows for a successful management of chronic diseases, including better treatment. These actions can translate into better health outcomes and appropriate utilisation of health services. At the collective level, health literacy can support the efficiency of health services, which may result in reduced health system pressures. Good health literacy is likely to result in more effective individual behaviours conducive to improved public health, a key tool to help address global challenges, such as covid-19 today.

- **Even though there are limitations in measuring and comparing the status of health literacy among populations, survey-based studies have shown that deficiencies exist even in highly developed countries.** For example, across eight European countries, nearly one in two of the respondents showed inadequate or problematic health literacy in 2012. Low health literacy has been associated with low levels of formal education, low income, and in people who are older or are less fluent in local languages (for example, migrants). Furthermore, people living with intellectual disabilities might be heavily impacted by health literacy limitations, but anyone can face health literacy challenges during particular points in their life. This study also identified that culture and traditions also influence notions of health literacy. For example, in certain low and middle income countries health learning and decision-making is a shared experience involving families and communities (to a greater extent than in the West).

- **In an EIU snapshot analysis of health literacy initiatives across seven countries from different regions of the world, Australia and the US stand out with consistent policy efforts to improve health literacy further.** These countries have produced dedicated strategies and resources that continue to influence policy today. Following behind are England and France, where even though no dedicated policies are observed, health literacy (as a distinct concept) features within government-funded healthcare programmes and resources. A nascent status of the field is observed in India, Mexico and South Africa, where no dedicated policy was observed but health literacy is indirectly addressed through health promotion programmes. Outside of this group, Austria's health literacy project stands out with the creation of a dedicated body driving and coordinating health literacy efforts.

Health literacy and the healthcare sector

- **Health literacy requires combined action from individuals, healthcare providers and healthcare systems.** Encouragingly, policies and initiatives are emerging from the healthcare sector. The US is training healthcare professionals in health literacy, where federal agencies have produced a rich variety of resources for continuing education (such as online training). Initiatives are also taking place in Australia at the state level, while health literacy is gaining prominence in medical schools. In England, most of the effort focuses on making online resources available to healthcare professionals. Numerous techniques to improve health literacy between healthcare professionals and patients are available, some of the most commonly discussed are “teach back” and “plain language”.
- **Integrating health literacy measures into the accreditation of healthcare providers is a promising policy tool to boost health literacy principles at a healthcare system level.** Among seven countries examined by the EIU, Australia showed the strongest regulatory framework. Multiple health literacy dimensions are incorporated within the National Safety and Quality Health Service Standards, a system of mandatory implementation across hospitals. England features standards for health information, while efforts in the US have focused on producing guidance documents. Pharmacists also play an important role in communicating health information and their role within healthcare networks should be strengthened.
- **Personal self-care and health can be advanced if people can easily access gateways into health information and health services.** The EIU examined how national health system portals are enabling health literacy. Australia's HealthDirect and England's NHS online resources feature accessible formats, interactivity, actionable health information and a route to contact healthcare services. Across India, Mexico and South Africa, digital platforms are also emerging. This study finds that there are numerous ways in which developing countries can improve engagement with health information even with limited resources. Examples include the use of visual aids for health information or fostering better communication

protocols between patients and healthcare professionals. The covid-19 emergency has also accelerated the adoption of online channels, such as online pharmacies. With increased choice for patients, health literacy becomes a more needed asset.

- **Australia, England and the US showed the most progress in adopting shared decision making approaches with patients.** India, Mexico and South Africa evidenced limited policy support for these approaches and implementation deficiencies. Adoption of these approaches should consider cultural differences too. For example, in low and middle income settings there are different attitudes towards the doctor patient-relationship and the role that should be played by families in decisions. Taiwan is an example of advanced patient-centred health approaches, helped by health system incentives and structures that promote patient empowerment and health literacy, as well as by a strong democratic culture.

Health literacy and education

- **Developing health literacy early in life could bring lifelong lessons and benefits, making schools an appropriate environment to introduce health literacy programmes.** Australia, England and France have introduced robust health education programmes in national curricula. In the US, the work has focused on development of guidelines and reference standards. Mexico has also recently made efforts to prioritise health education. In India and South Africa, health literacy is mostly promoted through specific health promotion campaigns. Policymakers need to see health literacy education as a long haul investment in people's health and there are different approaches, such as teaching it in an integrated or standalone way.
- **Health literacy education should be lifelong, targeting vulnerable adults too.** Adult health education appears to be somewhat neglected in the seven countries examined, with good examples of leadership stemming from middle-income countries. Mexico's largest social security scheme carries out a health promotion and health education programme ("PrevenIMSS") that entails outreach activities from the primary care level and provides a range of information and education tools. In India, community activists are the cornerstone of health promotion and health education efforts, such as in the "ASHA" programme, or the "mitras" (friends) who support people in accessing health services. Australia has developed significant health education initiatives targeting First Nations people. Limited initiatives, however, were observed targeting immigrants in high-income countries such as France, the US and the UK. This report also notes how the community-based programme "Village Health Volunteers", supporting health literacy, is helping in the covid-19 response in Thailand.

Health literacy and digital technology

- **Digital technologies are already transforming health literacy.** The internet, social media and apps are widely used sources of health information. Meanwhile, emerging technologies are likely to have a further impact on people's engagement with health information. For example: the role of artificial intelligence in powering chatbots with personalised solutions; the use of voice technologies facilitating our interactions with technology; wearables which capture personalised data and produce timely health data. As patients deal with increasingly complex health information in digital formats, individuals will need to be ready to constantly update their skills and engage in continuous learning. Technology creators, on the other hand, should ensure patients' needs and concerns guide design processes.
- **Technology also brings challenges.** These include: access and connectivity gaps (which pose the risk of leaving some people behind), the quantity and quality of health information, the amplification of fringe messages, as well as safety and privacy concerns. Misinformation and disinformation have intensified in the context of the covid-19 pandemic. Combating this complex problem will require action from individuals (in developing critical analysis), technology businesses (in accountability and limiting the spread of misinformation on platforms), governments (in setting standards and control), as well as global collaboration.
- **Australia, France, England and the US have clear frameworks for regulating health apps.** Usually, regulation is only required for apps with a clear medical purpose. Among this group the UK is perhaps the most advanced country in that it features regulatory frameworks addressing a more extensive group of apps. The NHS, for example, produced a framework to evaluate health apps, including those that serve only information and education purposes. This is a step in the right direction as it favours trust (by both healthcare professionals and patients) and wider adoption. Regulators should continue to keep up with the rapid pace of innovation in digital health, balancing quality and safety priorities on one hand, with supporting an environment for continued improvement and innovation, on the other.
- **Lastly, this study examined how countries are creating communication guidelines to foster better health communication in their healthcare landscapes.** Australia, England, France and the US have guided content creators in producing clear and accessible health information in print, digital and graphic formats. There was limited visibility of such initiatives in South Africa and India at a national scale. In Mexico no comparable guides for online content were observed but some resources are created to support health promotion by federal health institutions. For example, educational and communication materials for health promotion and healthy lifestyles are widely available.

Chapter 1: Health literacy: Where are we today?

Defining health literacy

The field of health literacy has seen increased global attention in recent years. In the last 15 years, the number of networks and institutions working in this area has proliferated and the topic has become increasingly integrated into policy agendas, says Kristine Sørensen, founder of the Global Health Literacy Academy. Health literacy has gone from “a silent epidemic, not being on the agenda, not on the radar” to experiencing “exponential growth and development as a field and as a social movement,” she adds.

One early definition of health literacy was presented by the World Health Organisation (WHO) in 1998 as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.”¹ In the

following years, different definitions have emerged and a rich debate has taken place around the possibility of reaching consensus.

The definitions have evolved from having a primarily individual focus into capturing the social and environmental factors, considering for example, the interactions of people with healthcare systems. “We’re gradually coming to see that an individual alone can’t take on that responsibility; a good visual may increase their health literacy in a variety of ways, but there are systemic or organisational barriers that prevent them from putting it into action,” explains Linda Shohet, former executive director of The Centre for Literacy in Canada.

A much cited 2012 systematic review which examined 17 definitions produced an encompassing one. “Health literacy is linked to literacy and entails people’s knowledge, motivation and competencies to access,



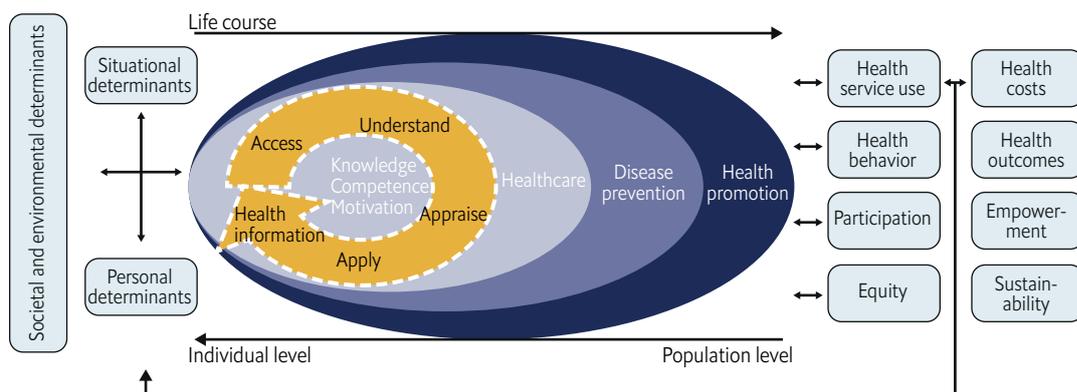
Health literacy has gone from a silent epidemic, not being on the agenda, not on the radar to experiencing exponential growth and development as a field and as a social movement.

Kristine Sørensen, founder of the Global Health Literacy Academy

¹ WHO. Health Promotion Glossary. 1998. <https://www.who.int/healthpromotion/about/HPR%20Glossary%201998.pdf> (Page 10)

Figure 1: Integrated conceptual model of health literacy

The model combines the main elements of health literacy (oval shapes in the centre) with factors that impact it and pathways linking it to health outcomes.



Source: Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: a systematic review and integration of definitions and models. BMC Public Health. 2012. Jan 25;12:80.

understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course.”² For a visual summary, see Figure 1.

What is the most accepted definition today? The debate points to the fact that there is simply no final word on the matter. The “International handbook of health literacy”, a compilation of knowledge and practice in the field affirms this. It suggests that health literacy should be understood as a multi-dimensional and expanding concept.³ In fact, the existence of multiple definitions should not be seen as problematic. “Definitions are more overlapping than differing. They all focus on the core of people’s competence, not only

knowledge, but the competencies to access, understand, appraise and apply information, to make decisions to cope with their health and to manage it better with support of organizations and systems,” says Ms Sørensen.

While there may be different definitions across organisations, certain facets of health literacy are becoming widely referenced and are making their way into policy and practice. For example, definitions of multiple levels of health literacy are widely used. The distinctions between functional, interactive and critical health literacy feature broadly in the field,⁴ and refer to different levels of health literacy which can be attained (see Box).

Mary Guinn Delaney, regional advisor on health education for Latin America at UNESCO, notes that health literacy should ultimately

² Sørensen K, Van den Broucke S, Fullam J, et al. Health literacy and public health: a systematic review and integration of definitions and models. BMC Public Health. 2012 Jan 25;12:80.

³ Sørensen K. Defining health literacy: Exploring differences and commonalities. In: International handbook of health literacy: research, practice and policy across the lifespan. Okan O, Bauer U, Levin-Zamir D, et al., editors. Policy Press; 2019.

⁴ Public Health England and UCL Institute of Health Equity. Local action on health inequalities Improving health literacy to reduce health inequalities. 2015. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/460709/4a_Health_Literacy-Full.pdf

Three types of health literacy

- **Functional health literacy:** concerning basic reading and writing skills needed to understand every day health information (for example, reading prescriptions, medicine labels, instructions).
- **Interactive health literacy:** cognitive, literacy and social skills needed to participate in different situations, obtain information through communication, and apply it to different circumstances (for example, involvement in discussions over health and treatment options with health professionals).
- **Critical health literacy:** a more advanced level which allows individuals to analyse information critically and to take control over various determinants of health (for example, identifying health risks in the environment and taking action).

Source: based on Nutbeam D. Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health promotion international*. 2000 Sep 1;15(3):259-67 and Public Health England and UCL Institute of Health Equity. Local action on health inequalities Improving health literacy to reduce health inequalities. 2015. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/460709/4a_Health_Literacy-Full.pdf

Dual approach: definitions for individuals and healthcare organisations

The US Department of Health and Human Services is one body that understands that individuals and organisations have responsibilities in attaining health literacy.

- **Personal health literacy** is the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.
- **Organisational health literacy** is the degree to which organisations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.

Source: U.S. Department of Health and Human Services. History of Health Literacy Definitions. 2020. <https://health.gov/our-work/healthy-people/healthy-people-2030/health-literacy-healthy-people-2030/history-health-literacy-definitions>

strive towards achieving critical skills. “Health literacy is not just about understanding the problems you can have by drinking or not getting enough exercise or eating poorly, but is about questioning: Why is junk food out on the market? Why is it marketed towards kids? How to make sense of all the information we are bombarded with? What kind of decision do you want to make, on the basis of what you know, on these issues and your own health?” Ms Sørensen also refers to an “optimal” critical health literacy, where patients “can engage, if they see that there is something wrong; Where can we make a change? Getting [the issue] on the agenda at the community level and then the system level.”

Also, as it has become widely accepted that there are both individual and organisational responsibilities towards health literacy, definitions on these two dimensions are also common. For example, this is seen in Australia⁵ and in the US (see Box).⁶ The recognition of personal or individual health literacy on one hand, as well as organisational or environmental health literacy on the other, informs their policy and action in the field.

The discussion around definitions is ongoing. As a complex concept, it is expected that definitions will continue to evolve in different contexts, focusing on different health dimensions or populations. Already, the literature refers to specific types of health

literacy, such as eHealth literacy or media health literacy (referring to different media), health literacy in the context of specific conditions (such as diabetes, cancer, sexual or mental health) or certain groups (such as children, mothers or carers). These different streams will enrich the field, giving it relevance in a changing world.⁷

How is health literacy measured?

As definitions of health literacy have evolved, so have the instruments to measure its level in populations. In the past decades, these have gone from focusing on basic reading skills to taking into account multidimensional facets.⁸ “They highlight specific aspects, each of them bringing something new to the table because it helps you see health literacy is multi-dimensional,” says Ms Sørensen.

Two instruments have become the basis of national examinations of health literacy in recent years. Firstly, the European Health Literacy Survey (HLS-EU), conducted across 8 European countries in 2012,⁹ used a standard questionnaire (HLS-EU-Q). The instrument was informed by a conceptual framework that considered the general population and a public health perspective of health literacy. It measured 47 items on self-reported health literacy challenges in the contexts of healthcare, health prevention and health promotion.¹⁰

⁵ Australian Commission on Safety and Quality in Health Care. Health Literacy. 2019. <https://www.safetyandquality.gov.au/our-work/patient-and-consumer-centred-care/health-literacy>

⁶ Office of Disease Prevention and Health Promotion, see US Department of Health and Human Services. History of Health Literacy Definitions. 2020. <https://health.gov/our-work/healthy-people/healthy-people-2030/health-literacy-healthy-people-2030/history-health-literacy-definitions>

⁷ Sørensen K. Defining health literacy: Exploring differences and commonalities. In: International handbook of health literacy: research, practice and policy across the lifespan. Okan O, Bauer U, Levin-Zamir D, et al., editors. Policy Press; 2019.

⁸ Altin SV, Finke I, Kautz-Freimuth S, Stock S. The evolution of health literacy assessment tools: a systematic review. BMC Public Health. 2014. Nov 24;14:1207.

⁹ Sørensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). Eur J Public Health. 2015. Dec;25(6):1053-8.

¹⁰ Sørensen K, Van den Broucke S, Pelikan JM, et al. Measuring health literacy in populations: illuminating the design and development process of the European Health Literacy Survey Questionnaire (HLS-EU-Q). BMC Public Health. 2013. Oct 10;13:948.

Table 1: What should be the key domains of a health literacy survey?

A popular tool known as the HLQ questionnaire looks at nine areas, including appraising health information. The tool tests the level of agreement or perceived difficulty among individuals regarding a total of 44 items.



1. Feeling understood and supported by healthcare providers



2. Having sufficient information to manage my health



3. Actively managing my health



4. Social support for health



5. Appraisal of health information



6. Ability to actively engage with healthcare providers



7. Navigating the healthcare system



8. Ability to find good health information



9. Understanding health information well enough to know what to do

Source: Osborne RH, Batterham RW, Elsworth GR, et al. The grounded psychometric development and initial validation of the Health Literacy Questionnaire (HLQ). *BMC Public Health*. 2013. Jul 16;13:658.

Secondly, the Health Literacy Questionnaire (HLQ), a widely used health literacy measurement tool that has been translated into more than 30 languages.¹¹ It covers 9 areas of health literacy and the challenges faced by people and organisations (see Table 1).¹² It was recently used at large scale in the Australian national survey of 2018.¹³

Why health literacy matters

Impact on self-care, prevention, screening and chronic diseases

There are a growing number of studies seeking to measure the impact of health literacy on the individual and on society.

Omar Khorshid, president of the Australian

¹¹ Rademakers J, Waverijn G, Rijken M, et al. Towards a comprehensive, person-centred assessment of health literacy: translation, cultural adaptation and psychometric test of the Dutch Health Literacy Questionnaire. *BMC Public Health*. 2020. Dec 2;20(1):1850.

¹² Osborne RH, Batterham RW, Elsworth GR, et al. The grounded psychometric development and initial validation of the Health Literacy Questionnaire (HLQ). *BMC Public Health*. 2013. Jul 16;13:658.

¹³ Australian Bureau of Statistics. National Health Survey: Health literacy. 2019. <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey-health-literacy/latest-release>

Medical Association, points out its impact on prevention: “If you have a higher level of health literacy, you’re more likely to make healthy choices in your life.” Poor health literacy has been found to be a barrier to accessing colorectal cancer screening, for example.¹⁴ In the context of infectious diseases, poor health literacy has been associated with lower adoption of preventive actions such as vaccination and insufficient understanding on the role of antibiotics.¹⁵

Health literacy is also important in effective disease management. Health-literate individuals can make better decisions when it comes to their health, they are more capable of adhering to treatments, and can make more efficient use of resources.^{16, 17}

Health literacy has also been noted to play an important role in the success of self-care. With healthcare systems around the world facing growing pressures and limited resources, self-care approaches are emerging as a solution for greater efficiency and reach. Self-care refers to people taking action to promote or maintain their health and wellbeing; this includes management of minor, self-limiting conditions as well as diagnosed medical conditions, in partnership with healthcare professionals. Healthy literacy is a key enabler of self-care, and health-literate patients are more able to adhere to treatment plans for conditions ranging from common colds, sexual diseases to diabetes. In turn, optimal self-care

can improve health outcomes, quality of life of the patient and reduce pressures on the health system.¹⁸

Poor health literacy has been linked to a higher risk of death for individuals with conditions like cardiovascular disease, diabetes, and mental illness, driven by ineffective use of health services, poor communication with healthcare staff and deficiencies in self-care.¹⁹ In the context of diabetes, health literacy (and numeracy skills especially) are important in the management of medication, understanding glucose meter readings, adjusting insulin doses and in diet management.^{20, 21} Meanwhile, higher mortality has been seen among people with poor health literacy living with heart failure, a condition requiring self-management and a high degree of engagement with the healthcare system.²²

The impact of health literacy among people living with cancer has also been examined. Health literacy influences aspects such as decision-making around screening and treatment, understanding health information, communicating with healthcare professionals, efficient use of services and adherence to treatment plans. As a result, low health literacy may have an impact on health outcomes, a greater need for hospital attendance and anxiety in dealing with the disease.²³

Individuals with low health literacy have been found to be more likely to delay getting care

¹⁴ Kobayashi LC, Wardle J, von Wagner C. Limited health literacy is a barrier to colorectal cancer screening in England: evidence from the English Longitudinal Study of Ageing. *Prev Med*. 2014. Apr;61(100):100-5.

¹⁵ Castro-Sánchez E, Chang PWS, Vila-Candel R, et al. Health literacy and infectious diseases: why does it matter? *Int J Infect Dis*. 2016. Feb;43:103-110.

¹⁶ Santos P, Sá L, Couto L, Hespanhol A. Health literacy as a key for effective preventive medicine. *Cogent Social Sciences*. 2017. Jan 1;3(1):1407522.

¹⁷ Miller TA. Health literacy and adherence to medical treatment in chronic and acute illness: A meta-analysis. *Patient Educ Couns*. 2016. Jul;99(7):1079-1086.

¹⁸ The Economist Intelligence Unit. Enabling people to manage their health and wellbeing: Policy approaches to self-care. 2019. https://eiuperspectives.economist.com/sites/default/files/eiu_rbselfcare_whitepaper_0.pdf

¹⁹ Friis K, Aaby A, Lasgaard M, et al. Low Health Literacy and Mortality in Individuals with Cardiovascular Disease, Chronic Obstructive Pulmonary Disease, Diabetes, and Mental Illness: A 6-Year Population-Based Follow-Up Study. *Int J Environ Res Public Health*. 2020. Dec 15;17(24):9399.

²⁰ Bailey SC, Brega AG, Crutchfield TM, et al. Update on health literacy and diabetes. *Diabetes Educ*. 2014. Sep-Oct;40(5):581-604.

²¹ Schillinger D, Grumbach K, Piette J, et al. Association of health literacy with diabetes outcomes. *JAMA*. 2002. Jul 24-31;288(4):475-82.

²² Peterson PN, Shetterly SM, Clarke CL, et al. Health literacy and outcomes among patients with heart failure. *JAMA*. 2011. Apr 27;305(16):1695-701.

²³ Koay K, Schofield P, Jefford M. Importance of health literacy in oncology. *Asia Pac J Clin Oncol*. 2012. Mar;8(1):14-23.



People who have higher levels of health literacy have better health outcomes because they know where to go, they join screening programmes, they know when to act in a timely manner.

Kristine Sørensen, founder of the Global Health Literacy Academy

and to have difficulties finding appropriate providers.²⁴ “People who have higher levels of health literacy have better health outcomes because they know where to go, they join screening programmes, they know when to act in a timely manner,” says Ms Sørensen. “They can find their way, they have good social support, they communicate well about their problems.”

Health literacy may also be a factor determining that patients seek the help of a doctor only when appropriate, which is especially important in the case of self-limiting minor ailments that can overburden health systems.²⁵ For example, in England, online advice from the NHS on manageable conditions such as common colds and migraines is designed to foster patient’s understanding of the condition, recommending self-care solutions prior to visiting a GP.^{26, 27}

The impact on health systems and society

Health literacy can make a difference on the sustainability of healthcare systems. Dr Khorshid explains: “Through health literacy, we can reduce the demand on complex health services. If we can target those health services to the people who need them, then you’re going to have a better healthcare system.”

Studies have attempted to quantify the impact of poor health literacy. It has been estimated to contribute to increased healthcare costs by about 3% to 5% annually, meaning an extra cost per patient that can be as high as \$7,798 (in overall care costs, based on a US study). Extra costs are driven partly by higher healthcare use by individuals with poor health literacy.^{28, 29}

A US study identified higher healthcare service use and higher expenditure (in prescription costs) by those with poor health

²⁴ Levy H, Janke A. Health Literacy and Access to Care. *J Health Commun.* 2016;21 Suppl 1(Suppl):43-50.

²⁵ The Economist Intelligence Unit. Enabling people to manage their health and wellbeing: Policy approaches to self-care. 2019. https://eiperspectives.economist.com/sites/default/files/eiu_rbsselfcare_whitepaper_0.pdf

²⁶ NHS. Common Cold. <https://www.nhs.uk/conditions/common-cold/>

²⁷ NHS. Migraine Treatment. <https://www.nhs.uk/conditions/migraine/treatment/>

²⁸ Eichler K, Wieser S, Brügger U. The costs of limited health literacy: a systematic review. *Int J Public Health.* 2009;54(5):313-24.

²⁹ Weiss BD, Palmer R. Relationship between health care costs and very low literacy skills in a medically needy and indigent Medicaid population. *J Am Board Fam Pract.* 2004, Jan-Feb;17(1):44-7.



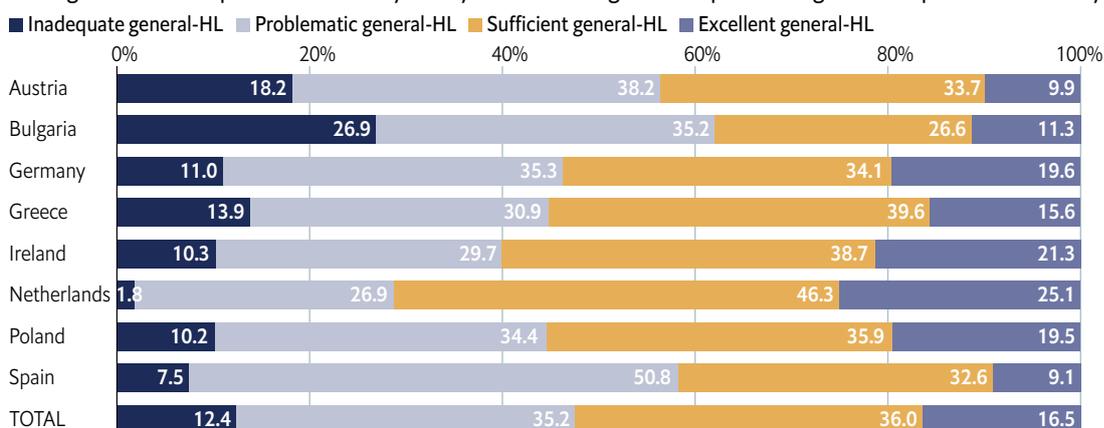
literacy, adding up to about \$172bn a year to national budgets.³⁰ Interestingly, the study suggests the higher prescription costs among those with poor health literacy could be linked to the fact that they lived with more severe conditions and relied more heavily on treatments rather than prevention. Also, they may use medication less effectively.³¹ Individuals with lower health literacy also

tend to require more hospitalizations and use emergency services at a higher rate, while at the same time show lower acceptance of some services, such as the flu vaccine and mammography screening.³²

As healthcare systems around the world become more elaborate and complex to navigate, health literacy seems to be more important than ever.³³ “In many ways,

Figure 2: Wide health literacy variation in Europe

Findings from the European health literacy survey found that Bulgaria and Spain had high levels of poor health literacy.



Sources: Sørensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). Eur J Public Health. 2015. Dec; 25(6): 1053-8.

³⁰ Rasu RS, Bawa WA, Suminski R, et al. Health Literacy Impact on National Healthcare Utilization and Expenditure. Int J Health Policy Manag. 2015. Aug 17;4(11):747-55.

³¹ Ibid.

³² Berkman ND, Sheridan SL, Donahue KE, et al. Low health literacy and health outcomes: an updated systematic review. Ann Intern Med. 2011. Jul 19;155(2):97-107.

³³ Sørensen K. Defining health literacy: Exploring differences and commonalities. In: International handbook of health literacy: research, practice and policy across the lifespan. Okan O, Bauer U, Levin-Zamir D, et al., editors. Policy Press; 2019.



healthcare, like many other things in our lives is becoming more and more complex,” says Ms Shohet. At the same time “individuals are increasingly expected to take on a partnering role”.

Lastly, the covid-19 pandemic offers a lesson of how responsible individual engagement with health information can contribute towards the public good. Health literacy can be a factor in facilitating individual behavioural changes (for example, in better hygiene care and social distancing), making a difference for society at large.³⁴ Ms Delaney says: “Public health means that my health depends on your health and your health depends on mine. And that is multiplied exponentially in a pandemic.”

Health literacy around the world: status in populations

Comparing health literacy levels across populations has some challenges. First, different definitions, instruments and methodologies have been used over the years making like-for-like comparisons difficult. Second, as health literacy is increasingly

recognised as a multidimensional issue, recent instruments (such as the HLQ) place more importance on describing a broad range of health literacy challenges rather than on producing a single numerical score of health literacy in the population.³⁵

Ms Sørensen says: “On one hand the strength is that what is measured gets done. On the other hand, there is the risk that we stigmatise people, because they’re labelled.” It is worth noting too that measuring the health literacy of the population is only half of the story, with healthcare systems and providers also having an important role to play. “Low health literacy occurs because the [health] system is not accommodating the people’s needs,” she adds.

Some national studies, however, can be useful as a reference base of the status of health literacy in the population. The European Health Literacy Survey (HLS-EU) examined health literacy levels across 8 countries based on a sample of 8,000 people (1,000 per country). The results ranged from 28.7% of respondents having inadequate or problematic health literacy in the Netherlands

³⁴ Košir U, Sørensen K. COVID-19: the key to flattening the curve is health literacy. *Perspect Public Health*. 2020. Jul 10:1757913920936717.

³⁵ Australian Institute of Health and Welfare. Health Literacy. 2020. <https://www.aihw.gov.au/reports/australias-health/health-literacy>

up to much higher levels such as 62.1% in Bulgaria (see Figure 2). Overall, across the 8 countries, 47.6% of respondents showed inadequate or problematic health literacy levels.³⁶ Thresholds were established based on expert criteria. A new comparative study across European countries is underway through the Health Literacy Population Survey Project 2019-2021 (HLS19), although no results have been published yet.³⁷

Some Asian studies have used adapted versions of the European instrument. In Japan, for instance, the level of inadequate health literacy was found to be 49.9%, while 85.4% fell in the “limited” health literacy category (a combination of “inadequate” and “problematic” health literacy).³⁸ In Taiwan, the instrument was also applied, finding overall a slightly higher level of health literacy than in Europe.³⁹

Other national examinations include the “Health Literacy of America’s Adults: Results from the 2003 National Assessment of Adult Literacy” which found that about 36% of adult Americans have limited health literacy (a sum of 22% with basic and 14% with below basic health literacy).⁴⁰ In England, a 2015 study estimated that 43% of the people had inadequate comprehension of health information involving text, while this figure rose to 61% when numeracy skills

were required.⁴¹ Broadly, a review across the evidence from 18 OECD countries indicated that at least a third of the population may experience low health literacy in the group.⁴²

Interest by the world’s most populous country in measuring health literacy is a sign of global momentum. National health literacy assessments have been conducted in China since 2008. Since then, the health literacy rate (or the level of adequate health literacy⁴³) has risen from 6.48% to 19.17% in 2019.^{44, 45} Multiple policy efforts have been documented to boost health literacy in the country⁴⁶ and notably the level of health literacy in the population features as an indicator of Healthy China 2030 (the country’s health strategy).⁴⁷

Meanwhile, Australia conducted a Health Literacy Survey in 2018 based on the HLQ questionnaire, but this meant no single numerical score of health literacy was obtained. The study found for example that 97% of participants agreed or strongly agreed with having sufficient information to manage their health, while 96% felt they were understood and supported by health care providers.⁴⁸ But not all countries conduct national surveys: our analysis of 7 countries, found only 3 reported results. Across France, India, Mexico and South Africa, no representative studies were found, except for small-scale examinations (see Table 2).

³⁶ Sørensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *Eur J Public Health*. 2015. Dec;25(6):1053-8.

³⁷ M-POHL. HLS19 Project. https://m-pohl.net/HLS19_Project

³⁸ Nakayama K, Osaka W, Togari T, et al. Comprehensive health literacy in Japan is lower than in Europe: a validated Japanese-language assessment of health literacy. *BMC Public Health*. 2015. May 23;15:505.

³⁹ Duong VT, Lin IF, Sorensen K, et al. Health Literacy in Taiwan: A Population-Based Study. *Asia Pac J Public Health*. 2015. Nov;27(8):871-80.

⁴⁰ National Center for Education Statistics. The Health Literacy of America’s Adults: Results from the 2003 National Assessment of Adult Literacy. 2006. <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006483>

⁴¹ Rowlands G, Protheroe J, Winkley J, et al. A mismatch between population health literacy and the complexity of health information: an observational study. *Br J Gen Pract*. 2015. Jun;65(635):e379-86.

⁴² Moreria L. OECD health working paper no. 107. Health literacy for people centred care. Where do OECD countries stand?. OECD Publishing; 2018. <https://doi.org/10.1787/d8494d3a-en>.

⁴³ Mantwill S, Schulz PJ. Health literacy in Mainland China: Validation of a functional health literacy test in simplified Chinese. *Health Promot Int*. 2016. Dec;31(4):742-748.

⁴⁴ National Health Commission of the People’s Republic of China. China’s health literacy rate rises to 9.48 percent. 2014. http://en.nhc.gov.cn/2014-12/19/c_45832.htm

⁴⁵ Mao Y, Xie T, Zhang N. Chinese Students’ Health Literacy Level and Its Associated Factors: A Meta-Analysis. *Int J Environ Res Public Health*. 2020. Dec 29;18(1):204.

⁴⁶ Shi J, Qi L, Li Y, Liu X. Investigation of Health Literacy Status in Beijing, China. *Health Lit Res Pract*. 2020. Sep 14;4(3):e174-e184.

⁴⁷ Tan X, Liu X, Shao H. Healthy China 2030: A Vision for Health Care. *Value Health Reg Issues*. 2017. May;12:112-114.

⁴⁸ Australian Institute of Health and Welfare. Health Literacy. 2020. <https://www.aihw.gov.au/reports/australias-health/health-literacy>

Barriers for health literacy and vulnerable populations

Examinations of health literacy levels in the population can, however, hide plenty of nuances. Aspects such as socioeconomic background, ethnicity and formal education levels can impact health literacy attainment. In the US, the 2006 national study highlighted some of these disparities: lower levels of health literacy were found among demographic groups such as males (compared to females), black, Hispanic or native Americans, non-native English speakers, older people, those with lower educational achievement and those living in poverty.⁴⁹ Evidence has shown low health literacy to be higher among the older, poorer and less formally educated,⁵⁰ and among non-white males.⁵¹ Groups such as indigenous populations, new immigrants, and those with deficiencies in the local languages can be especially vulnerable to health literacy limitations.⁵² A 2019 study found indeed that income and education level were the strongest contributors to health literacy disparity.⁵³

The European Health Literacy Survey identified a “social gradient” in the sense that poor health literacy was more common among those in lower financial, social and education status, as well as among

older populations.⁵⁴ In Australia, the 2018 Health Literacy Survey found some degree of disparities too. In particular, a higher proportion of people who spoke English at home agreed with feeling “understood and supported by health care providers” compared to those who did not.⁵⁵ There were also examples of better competencies in health among those with more qualifications and higher incomes.⁵⁶ In England, those belonging to black and minority ethnic groups and those with low-income, low-status jobs were also found to be more likely to display low health literacy (groups also deemed at higher risk of poor health).⁵⁷

Other populations have also been noted to be potentially vulnerable to health literacy limitations, including people with intellectual disabilities.⁵⁸ In fact anyone could face health literacy challenges in their life. “Even people with good overall health literacy can have temporarily reduced health literacy, for example, when in shock after an accident, or when receiving a bad diagnosis which deeply affects them emotionally so that they have problems with information processing,” says Christina Dietscher, head of department of non-communicable diseases, mental health and geriatric medicine at the Austrian Federal Ministry of Social Affairs, Health, Nursing Care and Consumer Protection.

⁴⁹ U.S. Department of Education. The Health Literacy of America's Adults Results From the 2003 National Assessment of Adult Literacy. 2006. <https://nces.ed.gov/pubs2006/2006483.pdf>

⁵⁰ Peterson PN, Shetterly SM, Clarke CL, et al. Health literacy and outcomes among patients with heart failure. *JAMA*. 2011. Apr 27;305(16):1695-701.

⁵¹ Cavanaugh KL, Wingard RL, Hakim RM, et al. Low health literacy associates with increased mortality in ESRD. *J Am Soc Nephrol*. 2010. Nov;21(11):1979-85.

⁵² Vamos S, Okan O, Sentell T, Rootman I. Making a Case for “Education for Health Literacy”: An International Perspective. *Int J Environ Res Public Health*. 2020. Feb 24;17(4):1436.

⁵³ Fleary SA, Ettienne R. Social Disparities in Health Literacy in the United States. *Health Lit Res Pract*. 2019. Mar 8;3(1):e47-e52.

⁵⁴ Sørensen K, Pelikan JM, Röthlin F, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *Eur J Public Health*. 2015. Dec;25(6):1053-8.

⁵⁵ Australian Institute of Health and Welfare. Health Literacy. 2020. <https://www.aihw.gov.au/reports/australias-health/health-literacy>

⁵⁶ Australian Bureau of Statistics. National Health Survey: Health literacy. 2019. <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey-health-literacy/latest-release>

⁵⁷ Rowlands G, Protheroe J, Winkley J, et al. A mismatch between population health literacy and the complexity of health information: an observational study. *Br J Gen Pract*. 2015. Jun;65(635):e379-86.

⁵⁸ Geukes C, Bröder J, Latteck AD. Health Literacy and People with Intellectual Disabilities: What We Know, What We Do Not Know, and What We Need: A Theoretical Discourse. *Int J Environ Res Public Health*. 2019. Feb 5;16(3):463.

Driving health literacy further: a snapshot analysis of national policies and initiatives in 7 countries

The Economist Intelligence Unit conducted an examination of health literacy policy and initiatives across seven countries: Australia, England,⁵⁹ France, India, Mexico, South Africa and the United States. These countries were chosen aiming to offer a global snapshot across different regions of the world and different levels of accomplishment in health literacy action.

The development of the analytical framework was informed by a pragmatic literature review evaluating established and emerging themes around types of policies and initiatives that can help promote health literacy among populations.

The evidence was obtained through desk research across publicly available sources, including relevant government sources, specialised health reports and academic publications. While relying purely on publicly available sources may limit the depth of the research to some extent, this approach is supported by the notion that good policy-making entails a responsibility for openness and accessibility of knowledge to the wider public.

Countries were assessed through a pragmatic approach based on the clear existence or absence of specific policies or initiatives in different dimensions concerning health literacy. The examination focused on government-led programmes at the national level. In cases when the evidence did not point towards a full existence or absence of

the policy or initiative, these were deemed as “partial” achievements. This category included cases when some evidence was found in countries, but there were no national programmes, but instead regional, local or small-scale programmes. Some initiatives that were considered to address the issue of health literacy indirectly but not specifically were also considered as a partial achievement.

Overview of EIU findings:

- In this snapshot, **Australia and the US show the strongest policy drive for health literacy.** In 2014 the Australian Commission on Safety and Quality in Health Care presented a strategy (“National Statement on Health Literacy”) aimed at increasing awareness of health literacy, improving coordination of its adoption, and guiding actions by key stakeholders.⁶⁰ The US Department of Health and Human Services presented in 2010 the “National Action Plan to Improve Health Literacy” which addresses seven goals in health literacy. These relate to: health and safety information, healthcare system processes, education of young people, adult education, building partnerships, strengthening research and dissemination of evidence and best practices.⁶¹ Both countries have shown continued commitment with health literacy.⁶² In Australia, the National Preventative Health Strategy (expected March 2021) has an emphasis on better information. In the US, health literacy features prominently in a 10-year national health strategy (“Healthy People 2030”) in its principles, goals and objectives.⁶³

⁵⁹ England was treated separately from the UK as health and education administration have been devolved to constituent nations.

⁶⁰ Australian Commission on Safety and Quality in Health Care. National Statement On Health Literacy. 2014. <https://www.safetyandquality.gov.au/sites/default/files/migrated/Health-Literacy-National-Statement.pdf>

⁶¹ U.S. Department of Health and Human Services. National Action Plan to Improve Health Literacy. 2010. <https://health.gov/our-work/health-literacy/national-action-plan-improve-health-literacy>

⁶² Department of Health. Consultation Paper for the National Preventive Health Strategy. 2020. <https://consultations.health.gov.au/national-preventive-health-taskforce/consultation-paper-for-the-national-preventive-hea/>

⁶³ U.S. Department of Health and Human Services. Healthy People 2030. 2020. <https://health.gov/our-work/healthy-people/healthy-people-2030>

- **Following behind are England and France**, countries that are addressing the issue of health literacy but still lack dedicated policies. In England, a range of practical resources have been developed to support health literacy. In 2015, Public Health England and the Institute of Health Equity published a report entitled “Improving health literacy to reduce health inequalities”.⁶⁴ A health literacy “how to” guide has also been produced, including access to a “Health Literacy Toolkit” (a collection of information resources on the topic) available online⁶⁵ as well as an e-learning resource.⁶⁶ In France, the National Health Strategy 2018-2022 includes several references to health literacy. Indeed, one of its “principles of action” refers to offering health pathways based on accessibility and health literacy. It further addresses the need to integrate health literacy across education programmes for students of different ages.⁶⁷

- **Health literacy looks like a more nascent concept in Mexico, South Africa and India**, countries which do not feature standalone strategies or resources for health literacy. Mexico’s Directorate for Health Promotion features among its objectives a variety of health promotion and health education activities.⁶⁸ In South Africa, the concept of health literacy appears in certain policies such as those on health promotion,⁶⁹ mental health,⁷⁰ and non-communicable disease.⁷¹ Lastly, in India there was little evidence of integration of health literacy in health policies, and leadership in this area is sometimes found to stem from NGOs.

Through the following sections of this report the different dimensions of this analysis will be elaborated on. The following chapters will discuss how countries may address health literacy challenges from the dimensions of the healthcare sector, education and digital technologies.

⁶⁴ NHS. Enabling people to make informed health decisions. <https://www.england.nhs.uk/ourwork/patient-participation/health-decisions/>

⁶⁵ NHS Health Education England. Training and educational resources <https://www.hee.nhs.uk/our-work/population-health/training-educational-resources>

⁶⁶ NHS Health Education England. About the Health Literacy programme. 2021. <https://www.e-lfh.org.uk/programmes/health-literacy/>

⁶⁷ Ministère des Solidarités et de la Santé. Stratégie nationale de santé 2018-2022.

https://solidarites-sante.gouv.fr/IMG/pdf/dossier_sns_2017_vdefpost-consult.pdf

⁶⁸ Dirección General de Promoción de la Salud. Programa de Trabajo 2019. <https://drive.google.com/file/d/13gTBzZJ51GhUJf1uU26SJNgRUycnxth/view>

⁶⁹ Department of Health. The national health Promotion Policy and Strategy 2015-2019. <https://health-e.org.za/wp-content/uploads/2015/09/The-National-Health-Promotion-Policy-and-Strategy.pdf>

⁷⁰ Department of Health. National mental health policy framework and strategic plan 2013-2020. <http://www.health.gov.za/wp-content/uploads/2020/11/National-Mental-Health-Policy-Framework-and-Strategic-Plan-2013-2020.pdf>

⁷¹ Department of Health. Strategic plan for the prevention and control of non-communicable diseases 2013-17. https://extranet.who.int/ncdccc/Data/ZAF_B3_NCDs_STRAT_PLAN_1_29_1_3%5B2%5D.pdf



Table 2: EIU snapshot analysis of health literacy policy and initiatives in seven countries

	Australia	England	France	India	Mexico	South Africa	US
Health literacy policy and measurement							
Health literacy plan or strategy in place	Green	Yellow	Yellow	Grey	Yellow	Yellow	Green
A body championing health literacy	Green	Green	Yellow	Yellow	Yellow	Grey	Green
Population-based survey available	Green	Grey	Grey	Grey	Grey	Grey	Green
Integration of health literacy in education							
In the curriculum or education policy	Green	Green	Green	Yellow	Green	Yellow	Green
Programmes for vulnerable adults	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow
Health literacy in the healthcare sector							
Adoption of shared decision making	Green	Green	Yellow	Grey	Yellow	Yellow	Green
Engaging health system web portal	Green	Green	Yellow	Yellow	Yellow	Grey	Yellow
Training of healthcare professionals	Yellow	Yellow	Grey	Yellow	Yellow	Grey	Green
Organisational health literacy initiatives	Green	Green	Grey	Grey	Yellow	Grey	Green
Regulation of digital health content							
Comprehensive regulation of health apps	Green	Green	Green	Yellow	Yellow	Yellow	Green
Guidelines for clear health communication	Green	Green	Green	Grey	Yellow	Grey	Green
Background indicators							
Population with low health literacy (%)	60% (2006)	43% (2015)	—	—	—	—	36% (2006)
Literacy rate among adults (%)	100*	100*	100*	74.4	95.4	87.0	100*
Government education expenditure (% of GDP)	5.1	5.4	5.5	3.8	4.5	6.5	5.0
Government health expenditure (% of GDP)	6.4	7.9	8.3	1.0	2.7	4.5	8.5
Physicians (per 1,000 people)	3.7	2.8	3.3	0.9	2.4	0.9	2.6
Individuals using the Internet (% of population)	86.5	92.5	83.3	34.5	70.1	56.2	87.3
Life expectancy at birth, total (years)	83	81	83	69	75	64	79

Green = Yes; Yellow = Partially; Grey = No evidence

Notes: Literacy rate is the percentage of people ages 15 and above who can both read and write; Health expenditure is domestic general government health expenditure (% of GDP); Population with low health literacy is based on national assessments (with different methodologies) by Australian Bureau of Statistics, National Center for Education and Statistics (US) and Rowlands G, Protheroe J, Winkley J, et al. (England); The EIU identifies “vulnerable” adults as those living in socially deprived communities, refugees, immigrants, those with low education (without a degree), those with a limiting health condition or disability, and those living alone.

*Literacy rates are not published by the World Bank for these countries; these are estimates from The Economist Intelligence Unit Inclusive Internet Index. <https://theinclusiveinternet.eiu.com/>

** With the exception of “population with low health literacy”, figures are for the UK.

Source: The Economist Intelligence Unit research; Background indicators from World Bank Data. <https://data.worldbank.org/>

Austria seen as a European leader in health literacy policy

Austria's commitment to health literacy dates back to 2011 when the federal government developed the 10 Austrian Health Targets (to improve the health of the population to 2032), with target 3 focusing on enhancing health literacy. To reach this target, the Austrian Health Literacy Alliance was created in 2015 (abbreviated as ÖPGK in German). A multi-stakeholder body, participants in the ÖPGK team include representatives of the federal government, the state governments, social security institutions and multiple ministries. It also features organisations from other sectors such as education, healthcare, welfare systems, different types of associations and NGOs. Its priorities are improving health literacy among individuals, the healthcare system and across society and the economy at large. Its work is focused on advancing engagement with health literacy, promoting collaboration and networks among stakeholders, knowledge creation, innovation and dissemination, as well as monitoring and reporting.⁷² The creation of a dedicated body to support

the advancement of health literacy is a differentiating factor among a number of countries reviewed by the EIU; this should help improve coordination, sustainability and accountability of the health literacy project.

ÖPGK's achievements include: the integration of health literacy in the public agenda and in the government programme for 2017-22; engagement of professional bodies with the topic; and integrating health literacy in the curricula for healthcare professions.⁷³ Other achievements include the inclusion of health literacy into legal frameworks, for example, regarding social insurance, nursing and primary care centres.⁷⁴ Austria also plans to accredit healthcare providers as health literate, according to Christina Dietscher, head of department of non-communicable diseases, mental health and geriatric medicine at the Austrian Federal Ministry of Social Affairs, Health, Nursing Care and Consumer Protection. "Developments towards this direction are ongoing, but the scheme is not in place yet."

⁷² Österreichische Plattform Gesundheitskompetenz (ÖPGK). English Summary. 2021. <https://oepgk.at/english-summary/>

⁷³ Nowak P, Dietscher C, Sator M. Health literacy policies: National example from Austria—A unique story and some lessons learned from an ongoing journey. In: International handbook of health literacy: research, practice and policy across the lifespan. Okan O, Bauer U, Levin-Zamir D, et al., editors. Policy Press; 2019.

⁷⁴ Belgian Health Care Knowledge Centre. International comparison of health literacy policies and options for a policy plan for Belgium. 2019. https://kce.fgov.be/sites/default/files/atoms/files/KCE_322S_Health_Literacy_Supplement.pdf

Chapter 2: Health literacy in the healthcare sector

Even though it is becoming widely accepted that healthcare organisations, and not only individuals, should be responsible in fostering health literacy, there is evidence of this being still an emerging field. A 2011 US study observed a lack of adequate training in health literacy among healthcare professionals.⁷⁵ By 2019, a study on the status of health literacy teaching among healthcare professionals in higher education in the US, Australia and Ireland observed a lack of harmonised health literacy teaching frameworks, as well as limited research in this field. The most successful experiences involved numerous training sessions and engagement in real-world settings with patients or communities.⁷⁶

Further, a 2016 study noted a lack of organisational action on health literacy in the healthcare sector.⁷⁷ A later 2018 study notes that some progress has been made among OECD countries in the development of health literacy guidelines and tools for assessment and training, for example. While these tools helped in raising awareness, they were not enough to drive substantial organisational change in terms of health literacy.⁷⁸ Ms Sørensen recognises that countries are working on developing these types of resources, but guidelines may not always be enough: “Sometimes you see resistance among health professionals facing another set of guidelines they have to adhere to.”

Health literacy training for professionals

Appropriate training for healthcare professionals should be a priority in the deployment of health literacy strategies in the healthcare sector. Our examination across seven countries reveals that there is work to be done when it comes to training, as in most cases there is a lack of consistent, nationwide programmes. “It’s still really just an emerging area, so much more can be done,” notes Ms Sørensen. But she observes that health literacy skills are increasingly sought after in the job market across health disciplines. Dr Khorshid notes that health literacy is “gradually increasing its prominence within medical curricula”.

Health literacy training programmes however should be mindful of the growing pressures of the field and they should consider how healthcare professionals can effectively integrate these practices within their busy schedules. “We’re concerned about overburdening our health systems,” notes Dr Khorshid. “We think that doctors who are too busy will not spend the time on improving an individual patient’s health literacy because they just naturally prioritise the urgent over the desirable.”

Across the seven countries examined in the snapshot, the most encompassing

⁷⁵ Coleman C. Teaching health care professionals about health literacy: a review of the literature. *Nurs Outlook*. 2011. Mar-Apr;59(2):70-8.

⁷⁶ Saunders C, Palesy D, Lewis J. Systematic review and conceptual framework for health literacy training in health professions education. *Health Professions Education*. 2019. Mar 1;5(1):13-29.

⁷⁷ Annarumma C, Palumbo R. Contextualizing health literacy to health care organizations: exploratory insights. *Journal of Health Management*. 2016. Dec;18(4):611-24.

⁷⁸ Lloyd JE, Song HJ, Dennis SM, et al. A paucity of strategies for developing health literate organisations: A systematic review. *PLoS One*. 2018. Apr 11;13(4):e0195018.

Table 3: EIU analysis of health literacy in the healthcare sector of seven countries

	Australia	England	France	India	Mexico	South Africa	US
Does this country support shared decision making between healthcare professionals and patients?	Yes, through the National Safety and Quality Health Service (NSQHS) Standards, an accreditation system.	Yes, supported by the NHS and NICE	Partially, addressed by the National Health Strategy 2018-2022	No evidence found	Partially, limited endorsement observed	Partially, some legislative/policy enablers reported	Yes, through the 2010 Affordable Care Act and the Agency for Healthcare Research and Quality (AHRQ)
Is there a comprehensive digital portal to facilitate patient access to the health system? (i.e. accessible format, interactive, offering usable health information and providing a route to contact healthcare services)	Yes, enabled by Healthdirect Australia	Yes, the NHS website and 111 online	Partially, the portals "sante.fr" and "ameli.fr" with limited interactivity	Partially, the National Health Portal has a limited scope	Partially, the "Health in your life" platform available in Mexico city	No evidence found	Partially, MyHealthfinder and other information resources, with limited interactivity
Are there programmes for training of healthcare professionals in health literacy? (e.g. in medical schools or on the job, continuing education)	Partially, state-level initiatives observed by NSW Government	Partially, "Health Literacy Awareness Training" by the NHS and online tools	No evidence found	Partially, some activities by the Public Health Foundation of India	Partially, addressed in the 2019 work plan by the General Directorate for Health Promotion	No evidence found	Yes, resources available from the AHRQ, CDC and in medical schools
Are there strategies aimed at improving health literacy among organisations in the healthcare sector? (e.g. training or accreditation schemes that support health literate environments)	Yes, through the National Safety and Quality Health Service (NSQHS) Standards	Yes, through the Information Standard and the Accessible Information Standard by the NHS	No evidence found	No evidence found	Partially, initiatives addressed in the 2019 work plan by the General Directorate for Health Promotion	No evidence found	Yes, recommendations by the U.S. Department of Health and Human Services and the CDC

■ Green = Yes; ■ Yellow = Partially; ■ Grey = No evidence

Source: The Economist Intelligence Unit research.

national efforts in this regard are found in the US. There are multiple resources available, at the federal level, for training of health professionals in health literacy. The federal Agency for Healthcare Research and Quality (AHRQ) features a site with free

training resources for health professionals.⁷⁹ Similarly, the Centers for Disease Control and Prevention (CDC) also offers multiple online training options in health literacy as continuing education.⁸⁰

⁷⁹ Agency for Healthcare Research and Quality. Health Literacy Professional Education and Training. 2021. <https://www.ahrq.gov/health-literacy/professional-training/index.html>

⁸⁰ Centers for Disease Control and Prevention. Health Literacy: Find Training. 2020. <https://www.cdc.gov/healthliteracy/gettraining.html>

In Australia, the National Statement on Health Literacy includes propositions on health literacy training for healthcare workers.⁸¹ Furthermore, there are examples of implementation of state-level initiatives. In 2019, the New South Wales government issued a “Health Literacy Framework: Guide to Action” which documents different activities across local health districts including the appointment of a dedicated health literacy officer, training, the development of online resources and educational materials.⁸² However, there is still work to do. A 2020 position statement from the Australian Medical Association (AMA) on health literacy refers to the need to strengthen health literacy training for professionals in the country.⁸³

Improving health literacy of the public, through the doctor-patient relationship, has been a tool to address public health concerns such as antimicrobial resistance in Australia. “There has been an enormous amount of pressure on general practitioners (GPs) to prescribe antibiotics for people with

viral upper respiratory tract infections for many years in Australia,” says Dr Khorshid. “But through education in the face-to-face communication with patients we are seeing lower levels of prescription.” Addressing this global challenge will require the cooperation of multiple stakeholders. For example, pharmacists have an important role to play in advising patients on the optimal use of medication. To achieve this, they should receive support and training and should be increasingly integrated as actors of the health network, this is especially needed in developing countries.⁸⁴

In England, the National Health Service (NHS) has documented health literacy awareness training for health practitioners.⁸⁵ It has also made available a range of training materials online, in particular a 30-minute online course on techniques such as: TeachBack (to confirm that explanations have been understood by patients), chunk and check (breaking down information into chunks, and checking), using pictures and simple language.⁸⁶



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Improving health literacy of the public, through the doctor-patient relationship, has been a tool to address public health concerns such as antimicrobial resistance in Australia.

⁸¹ Australian Commission on Safety and Quality in Health Care. Health literacy: taking action to improve safety and quality. 2014. <https://www.safetyandquality.gov.au/sites/default/files/migrated/Health-Literacy-Taking-action-to-improve-safety-and-quality.pdf>

⁸² NSW Government. Health literacy framework: A guide to action. 2019. https://www.cec.health.nsw.gov.au/_data/assets/pdf_file/0008/487169/NSW-Health-Literacy-Framework-2019-2024.pdf

⁸³ Australian Medical Association. AMA Position Statement: Health Literacy. 2021. <https://ama.com.au/articles/health-literacy-2021>

⁸⁴ Sakeena MHF, Bennett AA, McLachlan AJ. Enhancing pharmacists’ role in developing countries to overcome the challenge of antimicrobial resistance: a narrative review. *Antimicrob Resist Infect Control*. 2018. May 2;7:63.

⁸⁵ NHS. Enabling people to make informed health decisions. <https://www.england.nhs.uk/ourwork/patient-participation/health-decisions/>

⁸⁶ NHS Health Education England. About the Health Literacy programme. 2021. <https://www.e-lfh.org.uk/programmes/health-literacy/>

A less consistent commitment to professional training was observed across the other countries examined. In Mexico, the Directorate for Health Promotion issued a work plan in 2019 with one of its objectives being building competencies of health workers on areas such as social determinants of health, gender, and health promotion. However, health literacy or related concepts are not mentioned specifically.⁸⁷ In India, the most visible work in this area is undertaken by the Public Health Foundation, an NGO, through outreach activities of its health promotion division and the capacity building initiatives for healthcare professionals (undertaking workshops, in collaboration with state

governments, on topics such as patient safety and communication).⁸⁸

What techniques can be taught?

Various techniques to support health literacy can be used by healthcare professionals. A 2017 study set out to compare 32 of these and prioritise them based on the ratings of health literacy experts. They considered the ones that could have the greatest positive impact on the greatest number of patients. Top-rated practices were recommended to be included as core practices into the routine work of healthcare professionals, depending on context (see Table 4).⁸⁹

Table 4: Top-rated health literacy practices

Routinely uses a **“teach back”** or **“show me” technique** to check for understanding and correct misunderstandings in a variety of health care settings, including during the informed consent process

Consistently **avoids using medical “jargon”** in oral and written communication with patients, and defines unavoidable jargon in lay terms

Consistently **elicits questions from patients** through a “patient-centered” approach (e.g., “what questions do you have?”, rather than “do you have any questions?”)

Consistently uses a **“universal precautions” approach** to oral and written communication with patients

Routinely recommends the **use of professional medical interpreter** services for patients whose preferred language is other than English

Consistently negotiates a **mutual agenda with patients** at the outset of encounters

Routinely **emphasizes one to three “need-to-know” or “need-to-do” concepts** during a given patient encounter

Consistently **elicits the full list of patient concerns** at the outset of encounters

Source: Coleman C, Hudson S, Pederson B. Prioritized Health Literacy and Clear Communication Practices For Health Care Professionals. *Health Lit Res Pract.* 2017. Jul 10;1(3):e91-e99.

⁸⁷ Dirección General de Promoción de la Salud. Programa de Trabajo 2019. <https://drive.google.com/file/d/13gTBzZJ51GhUJf1uU26SJNgRUycnxth/view>

⁸⁸ Public Health Foundation of India. Annual Report 2018-19. https://phfi.org/wp-content/uploads/2019/10/Annual_Report_2018-19.pdf

⁸⁹ Coleman C, Hudson S, Pederson B. Prioritized Health Literacy and Clear Communication Practices For Health Care Professionals. *Health Lit Res Pract.* 2017. Jul 10;1(3):e91-e99.

Furthermore, a recent 2020 study found that some of the most effective approaches for training healthcare providers in health literacy used feedback and reflection, role-play, simulated patients, theoretical lectures, discussions and face-to-face instruction and demonstration. Two recommendations emerged from this study: combining multiple teaching techniques, and increasing the number of follow-up training sessions with healthcare professionals to boost retention.⁹⁰ Online learning may also be a tool to democratise access.

Health-literate organisations and accreditation

Not only do we need improved healthcare professional and patient interactions, we need to know how healthcare providers are performing on health literacy. From an organisational perspective, the use of accreditation schemes for health literate environments is identified as an emerging and significant approach.^{91,92} “Those are important kinds of initiatives because they happen at a policy level and they force an organisation to actually identify what they’re doing; it puts health literacy on the radar,” says Ms Shohet. “They help to make it part of an expectation among health providers, then health literacy is not just an add-on.”

Based on our snapshot analysis, Australia, England and the US emerged as the

strongest countries in this area. In Australia, health literacy is a facet of the “Partnering with Consumers Standard” in the National Safety and Quality Health Service Standards (NSQHS). The standards, which promote health safety and quality, must be implemented in all hospitals, day procedure services and public dental services in the country.⁹³ Organisations are expected to communicate with consumers in a way that facilitates partnerships and three actions are proposed: acknowledging the diversity of consumers in communication mechanisms; involving them in the development of information; and supporting professionals in improving communication with their communities.⁹⁴

NHS England notes two schemes to promote quality and accessibility of information. The Information Standard is an accreditation mechanism to certify organisations producing health information for patients or the public. In order to be certified, organisations need to comply with six principles related to: production process, evidence sources, user understanding and involvement, quality of the end product, feedback and review. Certified organisations can use a quality mark (a logo).⁹⁵ Furthermore, there is the Accessible Information Standard which is a requirement for all publicly-funded health or adult social care services and is meant to ensure that information is accessible to disabled people.⁹⁶

⁹⁰ Nurash P, Kasevayuth K, Intarakamhang U. Learning programmes and teaching techniques to enhance oral health literacy or patient-centred communication for healthcare providers: A systematic review. *Eur J Dent Educ*. 2020. Feb;24(1):134-144.

⁹¹ Moreria L. OECD health working paper no. 107. Health literacy for people centred care. Where do OECD countries stand?. OECD Publishing; 2018. <https://doi.org/10.1787/d8494d3a-en>.

⁹² Pelikan JM. Health-literate healthcare organisations. In: International handbook of health literacy: research, practice and policy across the lifespan. Okan O, Bauer U, Levin-Zamir D, et al., editors. Policy Press; 2019.

⁹³ Australian Commission on Safety And Quality In Health Care. Implementation of the NSQHS Standards. 2019. <https://www.safetyandquality.gov.au/standards/nsqhs-standards/implementation-nsqhs-standards>

⁹⁴ Australian Commission on Safety And Quality In Health Care. Partnering with consumers standard. 2019. <https://www.safetyandquality.gov.au/standards/nsqhs-standards/partnering-consumers-standard>

⁹⁵ NHS. The Information Standard. <https://www.england.nhs.uk/tis/>

⁹⁶ NHS. Accessible Information Standard. <https://www.england.nhs.uk/ourwork/accessibleinfo/>

Table 5: Attributes of a health-literate healthcare organisation proposed by the US National Academy of Medicine

1. Has leadership that makes health literacy integral to its mission, structure, and operations.
2. Integrates health literacy into planning, evaluation measures, patient safety, and quality improvement.
3. Prepares the workforce to be health literate and monitors progress.
4. Includes populations served in the design, implementation, and evaluation of health information and services
5. Meets the needs of populations with a range of health literacy skills while avoiding stigmatisation.
6. Uses health literacy strategies in interpersonal communications and confirms understanding at all points of contact.
7. Provides easy access to health information and services and navigation assistance.
8. Designs and distributes print, audio-visual, and social media content that is easy to understand and act on.
9. Addresses health literacy in high-risk situations, including care transitions and communications about medicines.
10. Communicates clearly what health plans cover and what individuals will have to pay for services.

Source: Brach C, Keller D, Hernandez LM, et al. Ten attributes of health literate health care organizations. *NAM Perspectives*. 2012. <https://doi.org/10.31478/201206a>



In the US there are multiple federal resources supporting a drive towards health literate organisations. Notably, the US Department of Health and Human Services features the “Health Literate Care Model”, an information tool supporting health literate environments

and calling on care providers to consider patients’ understanding limitations, using strategies for clear communication and confirming that patients understand health messages.⁹⁷ Resources are also compiled by the CDC, for example, the white paper

⁹⁷ U.S. Department of Health and Human Services. Health Literate Care Model. <https://health.gov/our-work/health-literacy/health-literate-care-model>

“Ten Attributes of Health Literate Health Care Organizations” (attributes are listed in Table 5).⁹⁸ The AHRQ is another organisation active in this space: it has developed a Literacy Universal Precautions Toolkit for the promotion of health literacy among primary care practices.⁹⁹

Improving health information and communication channels

The EIU examined how countries are adapting web portals of their healthcare systems to boost engagement with patients. Different attributes were examined: having an accessible format, interactivity, offering usable health information and providing a route to contact healthcare services. The assessment focused on government-led portals, given the capacity of the public health sector to reach a wider population than the private sector (especially the vulnerable).

Australia and England offer the most advanced healthcare system web portals based on these attributes. Healthdirect Australia is a government-funded service intended for provision of high quality, verified health information and advice. Through its website it is possible to consult an extensive database of health information, including conditions, symptoms, procedures and medicines. Users can also check their symptoms through an interactive platform, obtain health advice on the condition and access contact details of relevant health providers they can

approach.¹⁰⁰ Dr Khorshid sees value in this type of resource: “Making sure that we have readily available and easily identifiable trusted health information in ways that people can understand can improve health literacy and can help patients understand how to navigate a complex health system.” Similarly, England’s NHS website is a centralised platform offering information on conditions, self-care and access to services.¹⁰¹ The NHS 111 online service is an algorithm-based tool to check for symptoms and obtain information on how to get help based on location.¹⁰²

While these two countries feature the most sophisticated and accessible platforms, there is evidence of countries moving in a similar direction. Following France’s national health strategy 2018-2022, the portal “sante.fr” was created, aiming for orientation of users into the healthcare system.¹⁰³ The portal offers information on diseases and available resources in the location of the patient.¹⁰⁴ Additionally, there is the website “ameli.fr” by the health insurance agency “Assurance Maladie”. This resource contains comprehensive information on health conditions, with guides on how to manage them and when to see a healthcare professional.¹⁰⁵ The US is comparatively lagging behind among the high-income countries examined. The country features a variety of information portals on areas such as insurance, disease information and prevention but such a fragmentation of sources may prove a limitation for patients to navigate the system.¹⁰⁶

⁹⁸ Brach C, Keller D, Hernandez LM, et al. Ten attributes of health literate health care organizations. *NAM Perspectives*. 2012. <https://doi.org/10.31478/201206a>

⁹⁹ Agency for Healthcare Research and Quality. AHRQ Health Literacy Universal Precautions Toolkit. 2020. <https://www.ahrq.gov/health-literacy/improve/precautions/index.html>

¹⁰⁰ Healthdirect. <https://www.healthdirect.gov.au/>

¹⁰¹ NHS. <https://www.nhs.uk/>

¹⁰² NHS 111 online. <https://111.nhs.uk/>

¹⁰³ Moumjid N. Prise de décision partagée en France: point et perspectives synthétiques en 2019. *Rev Med Suisse*. 2019. Oct 30;15(669):1998.

¹⁰⁴ Santé.fr. <https://www.sante.fr/>

¹⁰⁵ ameli.fr. <https://www.ameli.fr/>

¹⁰⁶ Portals identified included: health.gov/myhealthfinder, medlineplus.gov, cdc.gov/diseasesconditions and healthcare.gov/get-coverage.

There are signs of progress among middle-income countries. The health agency of Mexico City offers the programme “Health in your life” (Salud en tu vida), a tool through which users can access information on conditions, and receive personalised advice via SMS for staying healthy. Users can also be directed to health providers. It is intended to help identify risks and prevent conditions such as diabetes, hypertension and breast cancer. The platform also allows for follow up functionalities, such as reminders for appointments and medication.¹⁰⁷

In India, the Ministry of Health and Family Welfare enabled the National Health Portal, a unified platform for verified health information available to the public. The portal offers comprehensive information on diseases, but lacks interactivity.¹⁰⁸ South Africa is lagging somewhat but there are signs of progress. “MomConnect” is a mobile phone-based platform designed to facilitate pregnant women’s interaction with healthcare providers. It has three main purposes: allowing registration of pregnant women in the health system, sending health promotion messages and allowing women to feedback on the service received.¹⁰⁹

There are numerous other ways information channels can be improved, and this does not always have to entail digital technologies, which can be a barrier in developing countries with infrastructure deficits. “It can range from things as simple as brochures through to

health promotion exercises,” says Dr Khorshid. “Things as simple as a programme called ‘Hello, my name is’, as a way to encourage patients in healthcare facilities to know who is treating them, helping understanding and in forming bonds.” “Hello my name” started as a social media campaign by a cancer patient in the UK supporting the idea that a simple introduction by a healthcare professional can improve relationships and trust with patients.¹¹⁰

Another interesting and straightforward solution is found in South Africa. Ros Dowse, emeritus associate professor at Rhodes University, has used pictograms, simple two-dimensional visuals, to convey health information. “It all started from realising that available health visuals were too complicated for the limited literacy population in the public health sector in South Africa. They were not contextualised for them.” She has worked on simple “black and white” visual information for HIV, tuberculosis and how to take medication. They have been developed at her university with postgraduate students, and they are used in posters and leaflets in clinics. Although she notes there is a lack of consistent adoption among healthcare institutions, she has noticed interest from pharmacists, who work in rural clinics. Pictograms used in medicine labels were observed to improve understanding and adherence among a Xhosa community, for example.¹¹¹ More recently pictograms have been observed to support safety in medication taking among seniors.¹¹²

¹⁰⁷ Gobierno de la Ciudad de México. Salud en tu vida. <https://saludentuvida.cdmx.gob.mx/>

¹⁰⁸ <https://www.nhp.gov.in/>

¹⁰⁹ Department of Health. MomConnect. <http://www.health.gov.za/momconnect/>

¹¹⁰ Hello My Name Is. <https://www.hellomynameis.org.uk/>

¹¹¹ Dowse R, Ehlers M. Medicine labels incorporating pictograms: do they influence understanding and adherence? *Patient Educ Couns*. 2005 Jul;58(1):63-70.

¹¹² Ng AWY, Chan AHS, Ho VWS. Comprehension by older people of medication information with or without supplementary pharmaceutical pictograms. *Appl Ergon*. 2017 Jan;58:167-175.



Health literacy is the very foundation of patient-centred health care.

Kawal dip Sehmi, CEO of the International Alliance of Patients' Organisations

Accessing electronic patient information leaflets

In Europe debates are taking place regarding accessing patient information leaflets for medicines. For example, the European Medicines Agency (EMA) leads the electronic product information (ePI) initiative to improve the dissemination of medicine information through digital platforms such as e-prescriptions and electronic health records. It aims to increase trust, encouraging improved accessibility to up-to-date information.¹¹³

Digital formats have been noted to benefit health literacy due to possibilities for customised formats and increased accessibility.¹¹⁴ A system for creating tailored information leaflets has been tested in Portugal, for example,

which elicited favourable reviews by pharmacists.¹¹⁵

Managing a transition to digital formats will entail some complexities, such as the coordination of numerous stakeholders in the healthcare sector. In Europe, for example, a collaboration promoting this initiative involves the European Federation of Pharmaceutical Industries and Associations, the Association of the European Self-Medication Industry, and Medicines for Europe (representing the European generic, biosimilar and valued added pharmaceutical industries).¹¹⁶ Patients will also require support as many may be used to using paper insert formats.¹¹⁷

¹¹³ European Medicines Agency. Key principles for the use of electronic product information for EU medicines. 2020. <https://www.ema.europa.eu/en/news/key-principles-use-electronic-product-information-eu-medicines>

¹¹⁴ AESGP, EFPIA and Medicines for Europe. e-Product Information Initiative. 2018. https://www.efpia.eu/media/361697/annex1_eproduct-information-feb-2018-reduced.pdf

¹¹⁵ Vitor C, Cavaco A. Community pharmacists' attitudes towards patient leaflets: Exploring perceptions underlying an electronic local production of tailored written information. *AIMS Public Health*. 2018 Jun 25;5(2):189-202.

¹¹⁶ AESGP, EFPIA and Medicines for Europe. e-Product Information Initiative. 2018. https://www.efpia.eu/media/361697/annex1_eproduct-information-feb-2018-reduced.pdf

¹¹⁷ Hammar T, Nilsson AL, Hovstadius B. Patients' views on electronic patient information leaflets. *Pharm Pract (Granada)*. 2016 Apr-Jun;14(2):702.

Patient-centred care and health literacy

Health literacy is considered to be a necessary attribute in the context of patient-centred care. “Health literacy is the very foundation of patient-centred health care,” notes Kawaldip Sehmi, CEO of the International Alliance of Patients’ Organisations. “It gives them autonomy and confidence to navigate the care pathways, negotiate with health providers and face any challenges they have with resilience.” In considering the relationship between patient-centred care and health literacy, the EIU snapshot examined how the concept of shared decision making is emerging across seven countries of different income levels.

Australia, the US and England are leading in this dimension. In Australia, shared decision making is a topic highlighted by the Australian Commission on Safety and Quality in Health Care (ACSQHC).¹¹⁸ The National Safety and Quality Health Service (NSQHS) Standards include “Partnering with Consumers Standard” which recognises the importance of patient participation.¹¹⁹ Dr Khorshid sees the importance of these approaches: “Rather than the traditional paternalistic model where you present a problem, the doctor tells you what to do, and you go out and do it; if we can improve our individual patients’ understanding of their problem, why it has arisen and how

it can be treated, what the various options are, we’re likely to get better compliance with treatment and achieve better outcomes.”

In England, information resources on shared decision making are available from both the NHS and the National Institute for Health and Care Excellence (NICE), an agency that evaluates the cost-effectiveness of health technologies and issues guidelines to the NHS.^{120, 121} In the US, this approach has also been making inroads. Notably, the 2010 Affordable Care Act includes a programme to facilitate shared decision making.¹²² Furthermore, the AHRQ has developed tools and training resources in this field.¹²³

In France, this approach has been observed to be slowly emerging. A 2019 study mentions this is driven by the efforts of patient organisations, and the support of professional associations in primary care legislation addressing the autonomy of the patient.¹²⁴ Also, the national health strategy 2018-2022 proposes fostering a culture of shared decision making in order to strengthen the role of users in their own health.¹²⁵

In Mexico, there was limited evidence of a government position on the topic. Studies have also documented challenges in the implementation of patient-centred approaches.¹²⁶ In South Africa, some support for these approaches has been documented,

¹¹⁸ Australian Commission on Safety And Quality In Health Care. Shared decision making. 2019. <https://www.safetyandquality.gov.au/our-work/partnering-consumers/shared-decision-making>

¹¹⁹ Australian Commission on Safety And Quality In Health Care. Partnering with Consumers Standard. 2019. <https://www.safetyandquality.gov.au/standards/nsqhs-standards/partnering-consumers-standard>

¹²⁰ NHS. Shared decision making. [https://www.england.nhs.uk/shared-decision-making/#:~:text=Shared%20decision%20making%20\(SDM\)%20ensures,a%20decision%20about%20their%20treatment.](https://www.england.nhs.uk/shared-decision-making/#:~:text=Shared%20decision%20making%20(SDM)%20ensures,a%20decision%20about%20their%20treatment.)

¹²¹ NICE. Shared decision making. 2021. <https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-guidelines/shared-decision-making>

¹²² Patient Protection and Affordable Care Act. 2010. <https://www.govinfo.gov/content/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>

¹²³ Agency for Healthcare Research and Quality. The SHARE Approach. 2020. <https://www.ahrq.gov/health-literacy/professional-training/shared-decision/index.html>

¹²⁴ Moumjid N. Prise de décision partagée en France: point et perspectives synthétiques en 2019. *Rev Med Suisse*. 2019. Oct 30;15(669):1998.

¹²⁵ Ministère des Solidarités et de la Santé. Stratégie nationale de santé 2018-2022. https://solidarites-sante.gouv.fr/IMG/pdf/dossier_sns_2017_vdefpost-consult.pdf

¹²⁶ Doubova SV, Guanais FC, Pérez-Cuevas R, Canning D, Macinko J, Reich MR. Attributes of patient-centered primary care associated with the public perception of good healthcare quality in Brazil, Colombia, Mexico and El Salvador. *Health Policy Plan*. 2016. Sep;31(7):834-43.

through the constitution and the National Health Act which refer to patients' right for self-determination and informed consent.¹²⁷ National policies on insurance and palliative care refer to principles of patient-centred care.¹²⁸ However, studies point to limited implementation.¹²⁹ India offers an interesting case. There is little evidence of shared decision making in the healthcare sector. Some studies point to cultural limitations to the understanding of this approach. For example, a 2018 study among cancer patients in India

found that cultural attitudes of patients played a part in how much they want to be involved in shared decision making. Although most patients wished to be informed about their disease and treatment, when it came to treatment decisions, the majority of patients showed preference for a passive role, with most of them wishing to involve their families in decision making. The study also noted that it was common for physicians to play a "paternalistic" role.¹³⁰ This provides an example for the need to consider cultural

Choice and quality: Lessons from Taiwan

Taiwan stands out as an exemplar country in patient-centred care and health literacy approaches in Asia. Peter Chang, president of the Asian Health Literacy Association and a physician in Taiwan, describes the successful adoption of health literacy in the healthcare sector in Taiwan. Two elements stand out as potential drivers for success. First, the creation of system-level incentives for adoption of health literacy principles by health providers. Health literacy is one of the parameters evaluated in the Healthy Hospital accreditation programme,¹³¹ and crucially, payment by the national insurance system is influenced by quality performance of providers. In Taiwan, although the majority of health services are provided by private institutions, the national health insurance (NHI), acting as a single payer, is the cornerstone of the health system, which provides universal

coverage to the population. The system is noted to use multiple payment incentives schemes to promote quality. For example, hospital budgets are influenced by performance on criteria such as service delivery, quality, public satisfaction and appropriate use of resources.¹³² Second, Dr Chang describes that a high degree of freedom of choice of providers by patients has fostered a culture of empowerment (there is no gatekeeping in the system).¹³³ "It has pushed the hospitals to be very considerate about the issue or the patient will go to another provider." He further notes that a democratic tradition has influenced engagement and involvement of the public in healthcare. "Health education is often seen as one sided, but then it's not very successful. It's about patient-centred health," says Dr Chang. "It's not so much about teaching but about engagement and encouraging people to ask questions."

¹²⁷ Manyonga H, Howarth G, Dinwoodie M, et al. From informed consent to shared decision-making. *S Afr Med J*. 2014. Jun 19;104(8):561-2.

¹²⁸ Department of Health. National policy framework and strategy on palliative care 2017-2022. <http://www.health.gov.za/wp-content/uploads/2020/11/NationalPolicyFrameworkandStrategyonPalliativeCare20172022.pdf>

¹²⁹ Jardien-Baboo S, van Rooyen D, Ricks E, et al. Best practice guideline for patient-centred care in South African public hospitals. *Africa Journal of Nursing and Midwifery*. 2019. Dec 1;21(2):1-20.

¹³⁰ Sankar SD, Dhanapal B, Shankar G, et al. Desire for Information and Preference for Participation in Treatment Decisions in Patients With Cancer Presenting to the Department of General Surgery in a Tertiary Care Hospital in India. *J Glob Oncol*. 2018. Sep;4:1-10.

¹³¹ Wang YW. HPH Network to improve primary and secondary prevention of NCDs - Experience from Taiwan. 2018. https://www.hphconferences.org/fileadmin/user_upload/P3_Wang.PDF

¹³² The Commonwealth Fund. International Health Care System Profiles: Taiwan. 2020. <https://www.commonwealthfund.org/international-health-policy-center/countries/taiwan>

¹³³ Ibid.

attitudes when implementing patient-centred approaches to support health literacy.

Guda Alemayehu, executive board member at the International Health Literacy Association, notes culture could also pose barriers to patient empowerment in Africa too. For example: “In some countries, norms affecting antenatal care mean that pregnant women only seek support at the health facility if they feel physically unwell, not disclosing pregnancy until it is visible, and thus not obtaining any preventing health services.”

A change of paradigm in healthcare

While Ms Sørensen acknowledges progress in patient-centred approaches around the world she hopes these might be conducive to a change of mentality. “There is a risk that it’s becoming just a buzzword and a tick-the-box exercise for management, but what does it really mean to do people-centred work?” In her view, these approaches should lead to a change of paradigm in healthcare, focusing on health promotion and wellbeing. “It’s a whole mindset about developing people’s potential and creating the best environments that can support health and wellbeing for all,” she adds.

This cannot be achieved without greater participation of patients in healthcare design. “We think no health system should be designed without patient contribution,” notes Mr Sehmi. “All the care pathways should be designed in collaboration with [patients], health professionals and the government, so that we can very early on identify bottlenecks.” Mr Sehmi points to inclusion of

civil society in policy making in the European Union as a case of success and highlights the importance of participatory democracy in driving these processes.

“Business models should not be neglected in this conversation. How can we trigger that we design systems that really are based on people’s needs, that are people-centred, asking people, and listening to their concerns, looking at their pain points and then design the services?” notes Ms Sørensen. She points to how, facing pressures, healthcare systems have recently been able to accelerate much anticipated developments in telehealth. “During the covid-19 pandemic, during two to three weeks, they made this transformation.”

The role of pharmacies in health literacy and a changing market

Given their reach and accessibility, pharmacies also play a key role in health literacy; pharmacists are key communicators of health information as they interact directly and frequently with consumers and patients. Yet they can face some limitations in becoming more prominent drivers of health literacy. For example, information available in pharmacies may be too complex relative to the average levels of health literacy of the population, there may be a lack of specific health literacy strategies, staff face high volumes of prescriptions, and they can be overall fast-paced environments.¹³⁴

Yet there are promising initiatives on the role of pharmacies around health literacy. In both Australia and England, pharmacies are legally

¹³⁴ Shoemaker SJ, Staub-DeLong L, Wasserman M, Spranca M. Factors affecting adoption and implementation of AHRQ health literacy tools in pharmacies. *Res Social Adm Pharm*. 2013. Sep-Oct;9(5):553-63.

bound to conduct health literacy activities and health promotion.^{135, 136} Further, in Australia, the National Statement on Health Literacy includes propositions on the role of primary care centres and pharmacies in advancing health literacy.¹³⁷ In the US, the AHRQ features the online Pharmacy Health Literacy Center with numerous tools for assessment, training and guidance on how to promote better health outcomes based on supporting health literacy practices.¹³⁸

With the rise of digital technologies and e-commerce, however, the role of the pharmacy is evolving; also, the covid-19 pandemic has further accelerated adoption of digital platforms by the public. For example, in Germany, access to online pharmacy services has risen significantly after the first lockdown.¹³⁹ Some online pharmacies in the UK have also reported doubling their customer base in 2020.¹⁴⁰ In recent years, brick and mortar pharmacies have also been increasing their digital offering so as to not be left behind. For example, in the US, established brands have created apps for users to check, refill or transfer transcriptions from their devices, enabling medication

reminders, also offering online consultations with pharmacists.¹⁴¹

Globally, unregulated online providers however pose several risks to the public, such as purchases without prescription, marketing of counterfeit drugs, abuse of medication or inappropriate self-medication. And regulation of these platforms is still uneven across countries.¹⁴²

Governments should act to face the challenges of this evolving landscape, driving patient safety and health promotion. In the UK, for example, the Medicines and Healthcare products Regulatory Agency and the General Pharmaceutical Council regulate the advertisement and supply of medicines through online channels.¹⁴³ With more varied options to access medicines, it is also important to build people's health and digital literacy so they can make better decisions. The UK's NHS has issued recommendations for the public about buying medicines online,¹⁴⁴ while broadly its website is rich on content explaining all sorts of conditions and medications, encouraging people to make better decisions around their health.¹⁴⁵

¹³⁵ The Department of Health. 7th Community Pharmacy Agreement. 2021. <https://www1.health.gov.au/internet/main/publishing.nsf/Content/New-7th-Community-Pharmacy-Agreement>

¹³⁶ Pharmaceutical Services Negotiating Committee. Public Health (Promotion of Healthy Lifestyles). <https://psnc.org.uk/services-commissioning/essential-services/public-health/>

¹³⁷ Australian Commission on Safety and Quality in Health Care. Health literacy: Taking action to improve safety and quality. 2014. <https://www.safetyandquality.gov.au/sites/default/files/migrated/Health-Literacy-Taking-action-to-improve-safety-and-quality.pdf>

¹³⁸ AHRQ. AHRQ Pharmacy Health Literacy Center. 2020. <https://www.ahrq.gov/health-literacy/improve/pharmacy/index.html>

¹³⁹ Microsoft. Microsoft Advertising Insights: The rise of online pharmacies in Germany. 2021. <https://advertiseonbing-blob.azureedge.net/blob/bingads/media/insight/article/2021/03-mar/online-pharmacy-trends/microsoft-advertising-insights-retail-rise-online-pharmacies-de.pdf>

¹⁴⁰ Zion Payments. The rise of digital pharmacies. 2020. <https://www.zionpayments.com/blog/the-rise-of-digital-pharmacies/>

¹⁴¹ Clark M, Clark T, Bhatti A, Aungst T. The Rise of Digital Health and Potential Implications for Pharmacy Practice. *Journal of Contemporary Pharmacy Practice*. 2017;64(1):32-40.

¹⁴² Bandivaddekar SS. Online Pharmacies: Global Threats and Regulations. *AAYAM: AKGIM Journal of Management*. 2020;10(1):36-42.

¹⁴³ GPhC and MHRA. Regulating the advertising and supply of medicines from online pharmacies. <https://www.pharmacyregulation.org/sites/default/files/document/gphc-mhra-joint-statement-regulating-the-advertising-and-supply-of-medicines-from-online-pharmacies.pdf>

¹⁴⁴ NHS. Dangers of buying medicine online. <https://www.nhs.uk/nhs-services/prescriptions-and-pharmacies/pharmacies/dangers-of-buying-medicines-online/>

¹⁴⁵ NHS. Medicines A to Z. <https://www.nhs.uk/medicines/>

Case study 1: Village health volunteers in Thailand: a community initiative driving health education during the global pandemic

The Village Health Volunteer programme (VHV), which was created in the 1970s, plays a big part in Thailand's primary health care network as it successfully links communities with the healthcare system.¹⁴⁶ It has now shown its extra value during the pandemic.

Today, there are about one million volunteers (mostly female), each one expecting to reach around 5-15 Thai families. The Ministry of Public Health manages the programme and after selection the volunteers undergo a seven-day training period which can be supplemented by on-the-job learning.

The volunteers have a wide-ranging role. They provide assistance in maternal and child health, giving out health information, support health promotion and education, and provide basic healthcare services.¹⁴⁷ They work in coordination with the primary healthcare network at the sub-district level.¹⁴⁸

Volunteers have played a huge role in public health emergencies. For instance, they supported the response to the 2006 tsunami and since 2004 have been involved in the monitoring of avian influenza. They have supported surveillance and early warning mechanisms, while also acting as risk

communicators and health educators to the community.¹⁴⁹

During the covid-19 pandemic, they were called "unsung heroes" by the World Health Organisation. They went from door-to-door to give households advice and education on hygiene and prevention (offering face masks and hand gel) and supporting covid-19 management. Between March and early April 2020, they visited more than 10m households. Through the pandemic, they kept up to date on latest developments through an app and online communication with healthcare services which means they can act as a bridge between the health system and communities. They have also assisted the government in contact tracing, and in monitoring and assisting people in quarantine. On a system level, their contributions were deemed to offload pressure from hospitals and clinics.¹⁵⁰

Even as the country was exposed to the virus early on, Thailand's response has been considered a success and this has been partly attributed to the country's deep reach of primary health services and health education among communities, in which volunteers play an important role.^{151, 152}

¹⁴⁶ Kauffman KS, Myers DH. The changing role of village health volunteers in northeast Thailand: an ethnographic field study. *Int J Nurs Stud*. 1997. Aug;34(4):249-55.

¹⁴⁷ WHO Regional Office for South-East Asia. Role of Village Health Volunteers in Avian Influenza Surveillance in Thailand. 2007. <https://apps.who.int/iris/bitstream/handle/10665/205876/B0404.pdf?sequence=1&isAllowed=y>

¹⁴⁸ Ibid.

¹⁴⁹ Ibid

¹⁵⁰ WHO Thailand. Thailand's 1 million village health volunteers - "unsung heroes" - are helping guard communities nationwide from COVID-19. 2020. <https://www.who.int/thailand/news/feature-stories/detail/thailands-1-million-village-health-volunteers-unsung-heroes-are-helping-guard-communities-nationwide-from-covid-19>

¹⁵¹ Triukose S, Nitinawarat S, Satian P, et al. Effects of public health interventions on the epidemiological spread during the first wave of the COVID-19 outbreak in Thailand. *PLoS One*. 2021. Feb 19;16(2):e0246274.

¹⁵² Tejavivaddhana P, Suriyawongpaisal W, Kasemsup V, Suksaraj T. The roles of village health volunteers: COVID-19 prevention and control in Thailand. *Asia Pacific Journal of Health Management*. 2020. Aug;15(3):18.



Chapter 3: Driving health literacy through education

There is evidence that implementing health literacy programmes early in life can be efficient and effective. Fostering health literacy from an early age has been shown to reduce the prevalence of non-communicable diseases, improve lifestyle choices, reduce obesity and risky behaviours, with early action transcending into impact during adulthood.¹⁵³ A connection has been established between health literacy among adolescents and improved health behaviours.¹⁵⁴ The inclusion of health literacy within education programmes may prove cost-effective, may result in improved health and education outcomes and may be a factor in contributing to economic prosperity.¹⁵⁵

Countries are starting to recognise the value of instilling health literacy early in life. Australia,

regarded as a leading country in health literacy efforts, issued the National Statement on Health Literacy in 2014, which includes a section on the importance of developing health literacy in education settings and on its implementation in the context of education for children, adults, consumers and healthcare providers.¹⁵⁶ Similarly, the US' 2010 National Action Plan to Improve Health Literacy also acknowledges the importance of education in the health literacy agenda, incorporating two goals related to education; one focusing on children's education and the other on adults' education.¹⁵⁷

However, there are signs there is still work ahead in this area, starting with producing better evidence. A recent study claimed that the status of health literacy among children



Fostering health literacy from an early age has been shown to reduce the prevalence of non-communicable diseases, improve lifestyle choices, reduce risky behaviours, with early action transcending into impact during adulthood.

¹⁵³ Bruselius-Jensen M, Bonde AH, Christensen JH. Promoting health literacy in the classroom. *Health Education Journal*. 2017. Mar;76(2):156-68.

¹⁵⁴ Fleary SA, Joseph P, Pappagianopoulos JE. Adolescent health literacy and health behaviors: A systematic review. *J Adolesc*. 2018. Jan;62:116-127.

¹⁵⁵ McDaid D. Investing in health literacy: What do we know about the co-benefits to the education sector of actions targeted at children and young people? [Internet]. Richardson E, Wismar M, Palm W, editors. Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2016.

¹⁵⁶ Australian Commission on Safety and Quality in Health Care. Health literacy: taking action to improve safety and quality. 2014. <https://www.safetyandquality.gov.au/sites/default/files/migrated/Health-Literacy-Taking-action-to-improve-safety-and-quality.pdf>

¹⁵⁷ U.S. Department of Health and Human Services. National Action Plan to Improve Health Literacy. 2010. <https://health.gov/our-work/health-literacy/national-action-plan-improve-health-literacy>

is still less documented than that of adults.¹⁵⁸ Some exceptions include a 2018 Finnish study finding that about 10% of 7th and 9th grade students had low health literacy;¹⁵⁹ a 2019 study among adolescents in Lithuania which found that 12.1% of participants had low health literacy;¹⁶⁰ and a 2018 study from Taiwan which indicated that about 56% of school children were in the lower levels of health literacy (while a link between poor health literacy and obesity was established).¹⁶¹

Integrating health literacy in school education

Our snapshot across seven countries set out to identify ways in which health literacy has been introduced in the context of education. Australia, England and France foster health literacy through integration in the national curricula. In Australia, developing functional, interactive and critical health literacy is one of the propositions guiding the Health and

Table 6: Integrating health literacy in education

	Australia	England	France	India	Mexico	South Africa	US
Does the country support health promotion/ education in schools as part of education policy or curriculum?	Yes, in the Health and Physical Education propositions of the Australian F-10 Curriculum	Yes, through 2020 guidance "Relationships and sex education (RSE) and health education"	Yes, health education course from 2016 for pre-school to secondary students	Partially, health awareness is promoted through campaigns such as Fit India and Swachh Bharat Clean School	Yes, addressed in the 2017 "New Educational Model" by the Public Education Secretariat	Partially, promoted through the Integrated School Health Policy (ISHP) and health promotion programmes	Yes, supported through CDC's "National Health Education Standards"
Are there health literacy programmes targeted towards vulnerable adults?	Partially, by Healthdirect Australia, the Sydney North Health Network and NGOs	Partially, initiatives by NHS in East Midlands	Partially, initiatives by NGO "Migrations Santé"	Partially, through ASHA, POSHAN Abhiyaan programmes and "mitras"	Yes, the "PrevenIMSS" programme by the Mexican Institute of Social Security	Partially, in the Adult Literacy and Skills Training Programme (ALSTP)	Partially, "In It Together Health Literacy Project" on HIV and Anchorage Health Literacy Collaborative in Alaska

■ Green = Yes; ■ Yellow = Partially; ■ Grey = No evidence

Note: in this study, the EIU defines vulnerable adults as those living in socially deprived communities, refugees, immigrants, those with low education (without a degree), those with a limiting health condition or disability, and those living alone.

Source: The Economist Intelligence Unit research.

¹⁵⁸ Vamos S, Okan O, Sentell T, Rootman I. Making a Case for "Education for Health Literacy": An International Perspective. *Int J Environ Res Public Health*. 2020. Feb 24;17(4):1436.

¹⁵⁹ Paakkari O, Torppa M, Villberg J, et al. Subjective health literacy among school-aged children. *Health Education*. 2018. Feb 5; 118(2): 182-195.

¹⁶⁰ Sukys S, Trinkuniene L, Tilindiene I. Subjective Health Literacy among School-Aged Children: First Evidence from Lithuania. *Int J Environ Res Public Health*. 2019 Sep 13;16(18):3397.

¹⁶¹ Shih SF, Liu CH, Liao LL, Osborne RH. Health literacy and the determinants of obesity: a population-based survey of sixth grade school children in Taiwan. *BMC Public Health*. 2016 Mar 22;16:280.

Physical Education area of the Australian F-10 Curriculum (F-10 refers to the first eleven years of schooling).¹⁶² The curriculum establishes the standard of what students should be taught, while the details of implementation are to be determined by state or territory authorities.¹⁶³ In England, the Department for Education introduced new guidance on “Relationships and sex education (RSE) and health education” in 2020, making health education compulsory in state-funded schools (both primary and secondary), however giving flexibility to schools to design delivery methods according to their needs. The initiative addresses physical health and mental wellbeing, as well as relationships and sex education.¹⁶⁴ In France, the Ministry of Education introduced a course for health education for all students in 2016 which encompasses all education levels: from preschool to secondary education, with emphasis on health education, prevention and protection.¹⁶⁵

In absence of a national curriculum, in the US extensive work has been done at the federal level in creating guidelines and reference standards.¹⁶⁶ For example, the CDC has developed a range of resources helping to embed health literacy training across education levels, such as early childhood, kindergarten through 12th grade (K-12) and university.¹⁶⁷ One of such efforts is the National Health Education Standards (NHES) supporting the integration of health education in curricula from preschool to grade 12. The

NHES consists of eight standards defining what students should know and be able to do with regards to their own health or the health of their community.¹⁶⁸

Mexico has also addressed aspects conducive to health literacy in the curriculum. In 2017, the Public Education Secretariat issued the “New Educational Model”, along with a programme called “Health in your school” which features activities in health education (giving schools autonomy in designing their curricula). This programme was achieved in collaboration between the federal health and education authorities.¹⁶⁹ Ms Delaney notes some lag of the health literacy movement in Latin America, however: “We’ve investigated the definitions and tried to regionalise the concept because we haven’t seen a lot of, at least scientific, literature on the concept from the region and in Spanish.”

The introduction of health education policies in developing settings may still be a low priority in political agendas, as they do not offer rapid results. Ms Delaney notes: “It’s a tough sell sometimes when donors compare treating a million people a year, with waiting 25 years for the next generation to be formed.” On the situation in Africa, Mr Alemayehu notes: “I would say the development of health literacy as a field of knowledge is immature. There is a need to redefine health literacy based on the African context.”

¹⁶² Australian Curriculum. Key ideas. <https://www.australiancurriculum.edu.au/f-10-curriculum/health-and-physical-education/key-ideas/>

¹⁶³ Australian Curriculum. About the Australian Curriculum. <https://www.australiancurriculum.edu.au/about-the-australian-curriculum/>

¹⁶⁴ Gov.uk. Guidance: Relationships and sex education (RSE) and health education. 2020. <https://www.gov.uk/government/publications/relationships-education-relationships-and-sex-education-rse-and-health-education>

¹⁶⁵ Ministère de l’Éducation Nationale de la Jeunesse et des Sports. Le parcours éducatif de santé. 2020. <https://www.education.gouv.fr/le-parcours-educatif-de-sante-11786>

¹⁶⁶ Auld ME, Allen MP, Hampton C, et al. Health literacy and health education in schools: collaboration for action. *NAM Perspectives*. 2020. <https://doi.org/10.31478/202007b>

¹⁶⁷ Centers for Disease Control and Prevention. Health Literacy: Schools. 2020. <https://www.cdc.gov/healthliteracy/education-support/schools.html>

¹⁶⁸ Centers for Disease Control and Prevention. National Health Education Standards. 2019. <https://www.cdc.gov/healthyschools/sher/standards/index.htm>

¹⁶⁹ Secretaría de Educación Pública. Nuevo Modelo Educativo. 2017. <https://www.gob.mx/sep/documentos/nuevo-modelo-educativo-99339>

Table 7: A framework to assess progression in health education: The US National Health Education Standards

Standards refer to what students should know or be able to do at different stages of their education.

Standard 1	Students will comprehend concepts related to health promotion and disease prevention to enhance health.
Standard 2	Students will analyse the influence of family, peers, culture, media, technology, and other factors on health behaviours.
Standard 3	Students will demonstrate the ability to access valid information, products, and services to enhance health.
Standard 4	Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
Standard 5	Students will demonstrate the ability to use decision-making skills to enhance health.
Standard 6	Students will demonstrate the ability to use goal-setting skills to enhance health.
Standard 7	Students will demonstrate the ability to practice health-enhancing behaviours and avoid or reduce health risks.
Standard 8	Students will demonstrate the ability to advocate for personal, family, and community health.

Source: Centers for Disease Control and Prevention. National Health Education Standards. 2019. <https://www.cdc.gov/healthyschools/sher/standards/index.htm>

India and South Africa show a less consistent approach than the countries above, with health literacy in the education sector approached indirectly through health promotion programmes. In India, the National Education Policy 2020 addresses health as an aspect of a general literacy programme, without much detail.¹⁷⁰ However, the “Fit India Movement” promoting fitness and wellness for the population at large, entails specific activities for schools, while protocols and guidelines have been issued to be implemented in school settings.^{171, 172} There is also the “Swachh Bharat Clean School” initiative promoting sanitation and hygiene across schools, which includes a component

on raising awareness about hygiene among students.¹⁷³

In South Africa, the Integrated School Health Policy (ISHP), aimed at improving the health of children and their respective communities, includes activities in health education. Limited compliance with the programme has been documented, however.¹⁷⁴ Furthermore, the Department of Basic Education notes other programmes addressing health awareness, such as the “HIV and AIDS Life Skills Education Programme” and the “Alcohol and Drug Use Prevention and Management Programme”, which are integrated in school curriculum mainly via the life orientation

¹⁷⁰ National Council of Educational Research and Training. National Education policy, 2020. https://www.education.gov.in/shikshakparv/docs/Foundational_Literacy_Numeracy.pdf

¹⁷¹ Department of School Education and Literacy. FIT India. 2020. <https://seshagun.gov.in/fit-india>

¹⁷² Ministry of Youth Affairs and Sports, Ministry of Health and Family Welfare. FIT India: Fitness Protocols and Guidelines for 5-18 Years. [https://fitness.kheloindia.gov.in/Files/Fitness%20Protocols%20for%20Age%2005-18%20Years%20v1%20\(English\).pdf](https://fitness.kheloindia.gov.in/Files/Fitness%20Protocols%20for%20Age%2005-18%20Years%20v1%20(English).pdf)

¹⁷³ Department of School Education and Literacy. Swachh Bharat Clean School. 2020. <https://seshagun.gov.in/hi/sbsv>

¹⁷⁴ Rasesemola RM, Matshoge GP, Ramukumba TS. Compliance to the Integrated School Health Policy: Intersectoral and multisectoral collaboration. *Curatoris*. 2019. Feb 25;42(1):e1-e8.

or life skills subject area and co-curricular activities.¹⁷⁵ Professor Dowse makes a case for strengthening health literacy efforts in the education sector: “Often in Africa it’s children and adolescents who inform the adults who often are unable to read; if you teach them young, they can inform their community.”

An example of a long-running school-based health promotion programme is “Oryor Noi” in Thailand, in place since 2003 (led by the Thai Food and Drug Administration and with collaboration among the ministries of education and health). The initiative focuses on promoting the consumption of healthy products among school students. With increased awareness of healthy habits among the young, the programme expects that their families and communities will also be impacted.¹⁷⁶ By 2019, the programme reported over 15,000 participating schools.¹⁷⁷

Health education in the classroom: in combination or stand alone subjects?

According to Ms Delaney, competency-based curricula are common in Latin America, hence health education is often taught in combination with other subjects. She notes some advantages to this approach. Health is a subject that can be used as an example to test and develop a variety of skills, including soft skills. “Health literacy requires reading, writing and numeracy skills, but it also requires the assessment, the critical thinking and the decision-making skills,” she adds. “That gives us a chance to bring to bear different abilities

that the formal education system promotes, with very real world issues.”

Another approach consists of developing health and wellbeing as a stand-alone school subject, which Ms Sørensen advocates for. This would include “all dimensions of health: physical, social, spiritual, emotional, mental, sexual health”. In her view, this would also contribute towards a greater ownership of the subject from school staff (which may be weak when health is addressed on a project basis as part of other subjects). Finland, for example, has been recognised as a pioneer in establishing health education as a stand-alone subject (in the 7th to 9th grades). The health education subject has produced favourable perceptions among students, with the majority of boys and girls agreeing that the course has helped them think about the implications of different health behaviours.¹⁷⁸

A combination of different approaches could also work. In England, for example, a combination of the two approaches is encouraged. The recent guidance on “Relationships education, relationships and sex education (RSE) and health education” reports that schools have taught this content within a permanent subject of Personal, Social, Health and Economic Education (PSHE) with good results, however it also encourages linkage and complementarity between subjects.¹⁷⁹

Furthermore, teaching health subjects could do well with using multiple methodologies. A study pointed to the fact that classroom-only interventions can fail to encourage a sophisticated level of health literacy and

¹⁷⁵ Department of Basic Education. Health Promotion. 2019. <https://www.education.gov.za/Programmes/HealthPromotion/tabid/672/Default.aspx>

¹⁷⁶ Food and Drug Administration. Oryor Noi. http://pca.fda.moph.go.th/en/project_detail.php?id=8

¹⁷⁷ Oryor Noi. Performance data. <http://www.oryornoi.com/report/>

¹⁷⁸ Aira T, Välimaa R, Paakkari L, et al. Finnish pupils’ perceptions of health education as a school subject. *Glob Health Promot.* 2014. Sep;21(3):6-18.

¹⁷⁹ Department for Education. Relationships education, relationships and sex education (RSE) and health education. 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908013/Relationships_Education__Relationships_and_Sex_Education__RSE_and_Health_Education.pdf

called for a combination between theory and practice, and a focus on developing critical health literacy.¹⁸⁰

Supporting health literacy among adults

While most measurements of health literacy refer to adult populations, the health literacy education of this group can be often overlooked. “Adult education tends to be neglected in the education sector in general as programmes vary dramatically from one place to another,” says Ms Shohet. In the EIU snapshot, most of the seven study countries see only “partial” development in this area.

Mexico stands out as a leader in this area with a programme led by a large social security scheme, the Mexican Institute of Social Security.¹⁸¹ The “PrevenIMSS” programme focuses on the promotion of self-care and prevention and involves a range of activities offered by primary health centres, as well as the production of guidelines on healthy living, targeted at people of all ages (including women, men and the elderly). These guidelines feature recommendations on the importance of health education, vaccination, benefits of physical activity, healthy lifestyles, responsible use of medications, sleep quality and hygiene.^{182, 183} Outreach activities of the programme include group and individual talks on topics such as domestic violence, addictions, self-esteem, mental health, sexual health, stress and emotion management.¹⁸⁴

Along similar lines, Ms Delaney highlights an initiative taking place in Chile: “Empowered

Patient” (“Paciente Empoderado” in Spanish). It is an initiative developed by San Sebastián University to support health promotion and disease prevention, health education and self-care among adults over 35 with chronic diseases, who have been referred by primary care centres. It aims to improve disease management through personal and family engagement in health and treatment adherence. The initiative consists of 13 workshops, of a practical and fun nature, on topics such as chronic diseases, nutrition, physical activity, taking medications, emergencies at home, dental care, understanding lab tests, eye health, patient rights and duties, among others.¹⁸⁵ At the end of the training, participants receive a diploma, as an incentive. Ms Delaney notes that the initiative might have a multiplier effect. “If a grandmother is engaged and understands how; you can be sure that she’s going to insist on making those changes for her family.” The programme has run for more than six years and has reached four municipalities. It is sponsored by the Ministry of Health and UNESCO Chile.

Australia develops activities targeted at First Nations populations. “A focus recently in Australia has been trying to deliver culturally appropriate and culturally sensitive health care for indigenous patients, including health information,” notes Dr Khorshid. “Part of that for us has been trying to improve the understanding within our health community of the needs of our indigenous communities, but also promoting the healthcare workforce among indigenous populations.” He refers

¹⁸⁰ Bruselius-Jensen M, Bonde AH, Christensen JH. Promoting health literacy in the classroom. *Health Education Journal*. 2017. Mar;76(2):156-68.

¹⁸¹ Instituto Mexicano del Seguro Social. Conoce al IMSS. 2018. <http://www.imss.gob.mx/conoce-al-imss>

¹⁸² Gobierno de México. Autocuidado, primera acción para conservar la salud, prevenir y controlar enfermedades: IMSS. 2020. <http://www.imss.gob.mx/prensa/archivo/202007/500>

¹⁸³ Gobierno de México. Guías de Salud. <http://www.imss.gob.mx/salud-en-linea/guias-salud>

¹⁸⁴ Reporteros Hoy. Ellas y él con PrevenIMSS, dirigido a personas de 20 a 59 años. 2019. <https://reporteroshoy.mx/noticias/ellas-y-el-con-prevenimss-dirigido-a-personas-de-20-a-59-anos/>

¹⁸⁵ Universidad de San Sebastián. ¿Qué es el Programa Paciente Empoderado?. 2018. <http://www.ipsuss.cl/ipsuss/paciente-empoderado/que-es-el-programa-paciente-empoderado/2015-03-20/180015.html>

to the work of the National Aboriginal Community Controlled Health Organisation (NACCHO) in creating a pandemic response toolkit considering the specific needs of these communities.¹⁸⁶ Furthermore, NACCHO is active in a variety of health promotion and prevention projects, such as QUMAX (for the quality use of medicines), which features training on cultural awareness with community pharmacies.¹⁸⁷ Or “Good Medicines Better Health” which offers accessible and highly visual information materials for patients and healthcare centres to explain various conditions and their treatments.¹⁸⁸

Some experiences in India highlight the power of community activities to drive health literacy in developing settings. The government-run ASHA (Accredited Social Health Activists) programme promotes health among rural populations, based on the work of community health activists who raise awareness on health and its social determinants and promote health planning.¹⁸⁹ Further, POSHAN Abhiyaan is a national initiative for health promotion and nutrition, targeted towards vulnerable mothers and children, which relies on community engagement to facilitate interactions of families with the healthcare system from pregnancy and beyond.¹⁹⁰ Also, healthcare schemes employ the concept of “mitra” (meaning friend); individuals who help patients in accessing or understanding health.¹⁹¹ For

example, there are “Arogya Mitras” under Atal Amrit Abhiyan (a health insurance for low-income people) whose role includes facilitation and counselling in the context of patient interactions with healthcare services.^{192, 193}

Community approaches may also be relevant in Africa. “In Africa, where most of the population are rural dwellers, often without computers, even with low functional literacy, the tools and approaches for health literacy should be different. We use social mobilisation, community dialogue, local religious and community leaders to provide health information on available healthcare services,” notes Mr Alemayehu. In a similar direction, notes Professor Dowse: “In LMICs, social cohesion is important. Health literacy is developed in a more collaborative way with family, friends and neighbours. It’s a very different concept of health literacy.”

Immigrants need more support

Immigrants are often described as a group with deficits in health literacy. It is surprising that countries with considerable immigrant populations (the US, the UK and France) have few visible initiatives. Difficulties in accessing and understanding health services have been identified among asylum seekers and refugees in the UK, for example.¹⁹⁴ In France, only a NGO-led initiative targeting health education

¹⁸⁶ NACCHO. Coronavirus (COVID-19) Updates and Information. <https://www.naccho.org.au/aboriginal-health-alerts-coronavirus-covid-19/?hsCtaTracking=4fb6b65d-f3d3-481d-bd55-1035657e3393%7C0d109f40-711e-487b-84ce-1c8249e8fc7f>

¹⁸⁷ NACCHO. QUMAX. <https://www.naccho.org.au/qumax?hsCtaTracking=02e63e2a-5e5c-4f82-99d6-5eca94541d9c%7Cb0a7d7b0-ac92-431e-a246-46f088f2880f>

¹⁸⁸ NACCHO. Good Medicines Better Health. <https://www.naccho.org.au/good-medicines-better-health-resources?hsCtaTracking=ae87e70e-dbe0-41a6-b068-ca4aade7a6e6%7C144dcbe2-19e6-4ea2-b051-6f1d781163cd>

¹⁸⁹ Ministry of Health & Family Welfare. About accredited social health activist (ASHA). 2021. <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=150&lid=226>

¹⁹⁰ Ministry of Women and Child Development. POSHAN Abhiyaan. <http://poshanabhiyaan.gov.in/#/>

¹⁹¹ MediBuddy. Treading the path to health literacy in India. <https://portal.medibuddy.in/MImages/banner-images-2018/december/treading-the-path-to-health%20Literacy-in-india.pdf>

¹⁹² Government of Assam. Atal Amrit Abhiyan. <https://nhm.assam.gov.in/schemes/detail/atal-amrit-abhiyan-0>

¹⁹³ Government of Assam. Guidelines of Atal Amrit Abhiyan. https://nhm.assam.gov.in/sites/default/files/swf_utility_folder/departments/nhm_lipl_in_oid_6/menu/schemes/Guidelines%20of%20Atal%20Amrit%20Abhiyan%20with%20Annexures-26-50.pdf

¹⁹⁴ Kang C, Tomkow L, Farrington R. Access to primary health care for asylum seekers and refugees: a qualitative study of service user experiences in the UK. *Br J Gen Pract.* 2019. Aug;69(685):e537-e545.

of migrants was identified in the EIU snapshot review (“Migrations Santé”).¹⁹⁵ Similarly, in the US only the work of a non-profit in Alaska was identified.¹⁹⁶ Boosting health literacy among immigrants should be considered a useful tool for integration efforts. As Ms Shohet suggests: “Health literacy is a huge tool for engagement because everybody cares about their health.” Countries with large immigrant populations would do well to identify the needs of these vulnerable groups and design targeted interventions.

Some government-led initiatives have been implemented in Australia targeting

immigrants, for example. Healthdirect Australia, a government-funded telehealth service, documented a health literacy programme targeted towards new migrant mothers in Canterbury.¹⁹⁷ The Australian Institute of Health and Welfare refers to the issue of health literacy among migrants,¹⁹⁸ pointing to the Centre for Culture, Ethnicity and Health (a NGO in Victoria) which partners with communities, the government and the healthcare sector and offers health literacy resources, such as training courses.¹⁹⁹ At the local level, the Sydney North Health Network has also documented health literacy training for newly arrived migrants and refugees.²⁰⁰

¹⁹⁵ Migrations Santé France. <https://migrationsante.org/>

¹⁹⁶ Johnson RM, Shepard L, Van Den Berg R, Ward-Waller C, Smith P, Weiss BD. A Novel Approach to Improve Health Literacy in Immigrant Communities. *Health Lit Res Pract.* 2019 Oct 3;3(3 Suppl):S15-S24.

¹⁹⁷ Healthdirect. Community-focused solutions to health literacy challenges. 2019. <https://about.healthdirect.gov.au/news/community-focused-solutions-to-health-literacy-challenges>

¹⁹⁸ Australian Institute of Health and Welfare. Health literacy. 2020. <https://www.aihw.gov.au/reports/australias-health/health-literacy>

¹⁹⁹ Centre for Culture, Ethnicity & Health. Who we are. 2020. <https://www.ceh.org.au/who-we-are/>

²⁰⁰ Sydney North Health Network. Health literacy. <https://sydneynorthhealthnetwork.org.au/programs/health-literacy/>

Actions to support the delivery of health literacy programmes within the education sector

- Ensuring that health literacy is an integral element of teacher training and school curriculums.
- Developing supportive strategies for implementation at the individual school level.
- Making use of regulatory mechanisms that allow the pooling of funding and responsibility for policy and programmes between health and education sectors.
- Developing financial and reputational incentive schemes to promote fidelity in the implementation of education-system based health literacy programmes.
- Tailoring health literacy programmes to the local education sector context.
- Strengthening the evidence base on effectiveness and cost-effectiveness from an education as well as health system perspective.

Note: the original version addresses the European region specifically, but it has been slightly modified to convey global applicability.

Source: McDaid D. Investing in health literacy: What do we know about the co-benefits to the education sector of actions targeted at children and young people? [Internet]. Richardson E, Wismar M, Palm W, editors. Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2016.

²⁰¹ UNESCO. International technical guidance on sexuality education: An evidence-informed approach, 2018 (Revised edition)

²⁰² Ibid

²⁰³ Ley Programa Nacional de Educación Sexual Integral. 2006. <http://servicios.infoleg.gob.ar/infolegInternet/anexos/120000-124999/121222/norma.htm>

²⁰⁴ Ministerio de Educación. Lineamientos curriculares para la educación sexual integral. https://www.argentina.gob.ar/sites/default/files/lineamientos_0.pdf

²⁰⁵ Programa Nacional de Educación Sexual Integral (ESI). <https://www.argentina.gob.ar/educacion/esi>

²⁰⁶ UNFPA - Ministerio de Educación de la Nación. El derecho a la educación sexual integral en la Argentina. Aprendizajes de una experiencia exitosa. 2018. <https://argentina.unfpa.org/es/publications/el-derecho-la-educaci%C3%B3n-sexual-integral-en-la-argentina-aprendizajes-de-una-experiencia>

²⁰⁷ Herrera A. Mandatory sex ed curriculum stirs controversy in Argentina. The World. 2019. <https://www.pri.org/stories/2019-07-04/sex-education-mandatory-argentina-it-s-not-enforced>

²⁰⁸ Garcia Giribet A. Argentina: La ignorada Ley de Educación Sexual. Amnistía Internacional. 2019. <https://www.amnesty.org/es/latest/education/2019/02/argentina-fighting-for-sexual-education/>

²⁰⁹ Ley General de Educación. 2008. <https://www.ineed.edu.uy/images/pdf/-18437-ley-general-de-educacion.pdf>

²¹⁰ ANEP – UNFPA. Evaluación del Programa de Educación Sexual. 2017. <https://uruguay.unfpa.org/sites/default/files/pub-pdf/Presentaci.pdf>

²¹¹ La Diaria. Especialistas consideran que proyecto de ley para que padres elijan la educación sexual de sus hijas e hijos significa un retroceso. 2020. <https://ladiaria.com.uy/feminismos/articulo/2020/10/especialistas-consideran-que-proyecto-de-ley-para-que-padres-elijan-la-educacion-sexual-de-sus-hijas-e-hijos-significa-un-retroceso/>

²¹² M24. Proyecto de ley sobre educación sexual que impulsa el MEC es un «absoluto retroceso», aseguran desde el colectivo trans. 2020. <https://www.m24.com.uy/proyecto-de-ley-sobre-educacion-sexual-que-impulsa-el-mec-es-un-absoluto-retroceso-aseguran-desde-el-colectivo-trans/>

Case study 2: Driving sexual health literacy in Argentina and Uruguay

Sex education helps adolescents prepare for a productive and fulfilling life, offering an opportunity to learn more about their sexuality, sexually transmitted infections, pregnancy, gender-based violence and inequality.²⁰¹ UNESCO says there is strong evidence on the benefits of sex education, but few young people receive preparation for their lives that empowers them to make informed decisions about their sexuality and relationships freely and responsibly.²⁰²

How can a country boost sexual education? Speaking about the experience in Latin America, Mary Guinn Delaney, regional advisor on health education Latin America at UNESCO, thinks legislative frameworks play an important role in supporting these projects. “It compels governments to put the infrastructure in place, to give it resources, to train teachers, and to develop materials that are appropriate but also address public resistance,” she says. She notes that the experiences of Argentina and Uruguay can provide lessons for others. While these countries have made significant progress, they have faced resistance from social and political actors, and the work is still ongoing.

In Argentina, for instance, the “Comprehensive Sexual Education” programme was set up through a law in 2006 stating that all students have the right to receive sex education (in both publicly and privately-run primary and secondary schools).²⁰³ Two years later, the Ministry of Education issued curricular guidelines for the implementation of sexual education, giving communities the autonomy to decide on implementation (for example, the subject could be developed transversally, in combination with other subjects, or as a stand-alone course).²⁰⁴ This was followed by the distribution of education materials

across the education system, as well as teacher training. Today, the government has enabled a portal offering a wide range of information resources supporting the programme.²⁰⁵ Years later, this project has received some praise given the high degree of political coordination, as well as technical and financial effort that has been necessary for its implementation across a large federal system.²⁰⁶ However, challenges have been documented too, for example, inconsistent implementation across schools and social resistance from conservative segments of the population.^{207, 208}

Uruguay introduced sex education into law in 2008. The law states that sexual education should be one of the intersecting subjects in the education system and should aim to offer tools for critical thinking “on gender relations and sexuality in general”.²⁰⁹ Since then, a sexual education programme has developed implementation strategies and teacher training activities. It relies on the collaboration of designated teachers who act as knowledge promoters in different territories of the country. In primary and secondary schools, the topic is taught transversally with other subjects. The programme was evaluated in 2017 and some of its achievements include its autonomy and flexibility, the amount of teacher training resources, and favourable feedback from students. However, there is a need to update the programme to feature bullying, social media and sexual diversity, the study also found.²¹⁰ As in Argentina, the project has not avoided public resistance. In 2019, a bill was presented which stipulated that schools would need consent from parents prior to sexual education being taught.²¹¹ This bill has reportedly not moved forward.²¹²



Chapter 4: Health literacy in a digital world

Digital technologies have the power of advancing health literacy by facilitating access to information, fostering transparency and more effective communication within healthcare settings. The availability of information in a variety of new formats can instantly change how people access and process health information. “Putting information visually and graphically, people can keep going back, looking at a demonstration; when you’re home you can replay that video as many times as you want,” notes Ms Shohet as an example.

The impact of digital technologies on health literacy can be witnessed already, based on the prevalence of internet health-related searches. Across the European Union, for example, one out of two adults reported going online for health information on injuries, diseases, nutrition or improving health. This proportion has been rising rapidly over the years; from 32% in 2009 to 53% in 2019.²¹³ Also, “one in 15 daily searches on Google are in fact health related; people turn to Google, or other search engines, when they want to understand their symptoms, before they go to the doctor,” notes Jacqueline Shreibati, MD, clinical lead and health economics and outcomes research scientist at Google Health.

The covid-19 pandemic is also increasing people’s need to be informed about health in an exponential way, and for this they are likely to use the internet. Using “Google Trends” as an example, Dr Shreibati notes unprecedented engagement with health terms, for example

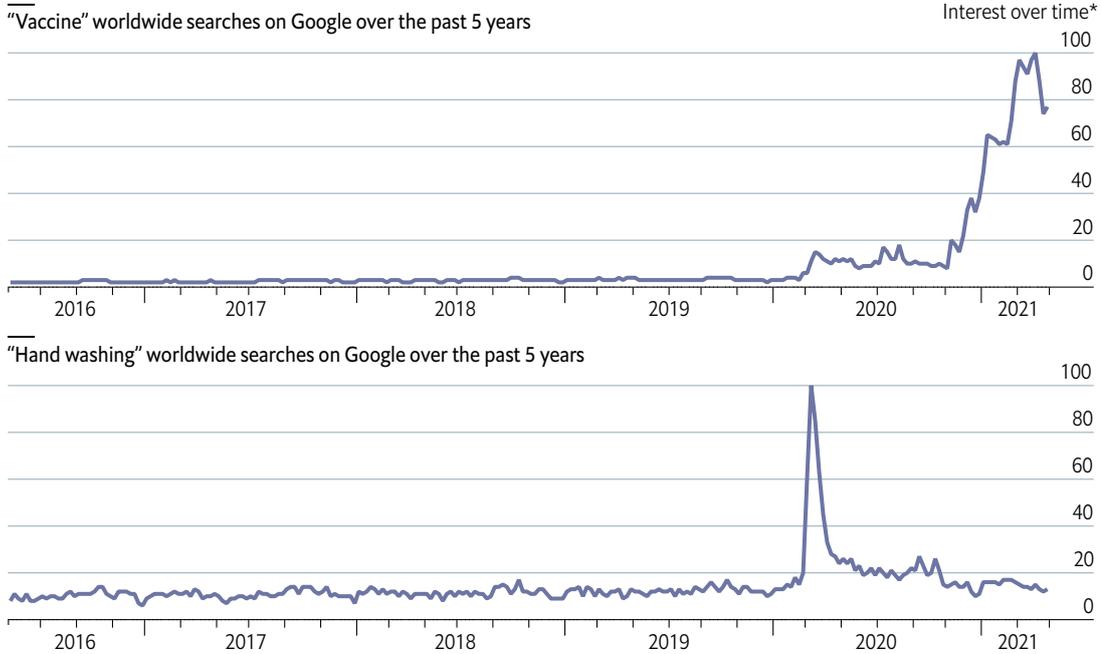
the meaning of “vaccine”: “For years, searching vaccine was not very common. And then in the last six months it’s skyrocketed many times over,” she adds (see Figure 3.)

As the world’s most used search platform, Google is an important gateway to health information. Dr Shreibati highlights a “commitment to organising the world’s information as it pertains to health”. In her view, it is important that “information is not just understandable but that it’s also actionable, which is part of the two-prong approach to health literacy.” In addition to the range of Google resources allowing for search of health information resources (such as search, Youtube or maps), Dr Shreibati notes the development of structured content to facilitate access to health information. For example, a search for “anxiety” on Google (in the US) offers the user a self-assessment tool based on the GAD-7 screening tool,²¹⁴ as well as information from Mayo Clinic. “This is something that you might very well do in the clinic, but instead of doing it in the clinic with your primary doctor you’re now also getting that access on the Google surface,” notes Dr Shreibati. “So we’re helping initiate that journey for people who are trying to understand more on their own.” Google is also piloting a tool to help patients prepare for medical visits, which emerges upon searching healthcare providers. Developed in collaboration with the AHRQ, the tool suggests possible questions to ask during a medical visit, based on evidence.²¹⁵

²¹³ Eurostat. 53% of EU citizens sought health information online. 2020. <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20200327-1#:~:text=In%20the%20last%20three%20months,nutrition%2C%20improving%20health%20or%20similar>

²¹⁴ Google. Anxiety self-assessment. <https://landing.google.com/screener/anxiety?source=google>

²¹⁵ Google. Prepare for medical visits with help from Google and AHRQ. 2020. https://blog.google/technology/health/prepare-medical-visits/?_ga=2.237579203.230744744.1615307136-1809206865.1589402003

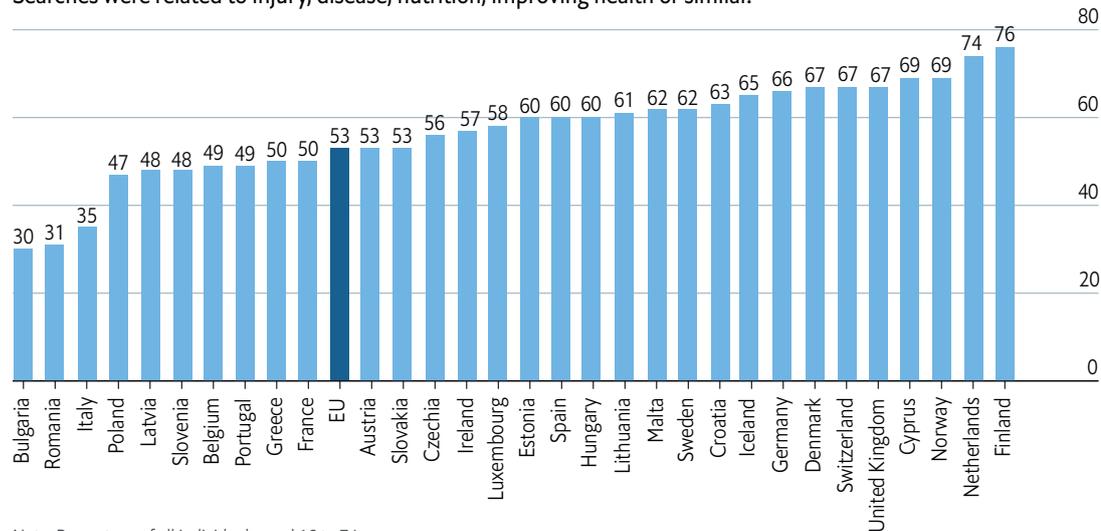
Figure 3: Worldwide searches for health and hygiene terms on Google over the past 5 years

*Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means that there was not enough data for this term.

Source: Google Trends. 2021. <https://trends.google.com/trends/>.

Figure 4: Share of people seeking health information online in Europe in past three months (2019 survey)

Searches were related to injury, disease, nutrition, improving health or similar.



Note: Percentage of all individuals aged 16 to 74.

Source: Eurostat. 53% of EU citizens sought health information online. 2020. <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20200327-1#:~:text=In%20the%20last%20three%20months,nutrition%2C%20improving%20health%20or%20similar.>

There is also social media, which has been a powerful tool enabling organisations to communicate with people, support health promotion²¹⁶ and the forming of interest groups among patients.²¹⁷ For Mr Sehmi, these mean a lot for patients with rare diseases, for example: “Very often, you wouldn’t be able to find anybody in your own country and so you may have a patient in Patagonia who finds some information that’s been written or produced by somebody in Finland.”

Health apps have also been around for years, offering new ways for patients to engage with health information. Worldwide, there’s a plethora of them. One study estimated there are more than 318,000 health apps²¹⁸ on popular app stores with more than 200 being added each day, so choice is wide. Progress in this area is happening at a great speed. Ray Pinto, digital transformation policy director at DIGITALEUROPE (which represents the digital technology industry), says: “In the past five years apps have changed quite radically from seeing lifestyle apps, to having software as a medical device.” And recently, the pandemic has accelerated the development and uptake of telehealth solutions. “There is huge potential to scale up healthcare delivery and scale up our communication with people about their individual health situations, without the traditional need for face-to-face consultations,” notes Dr Khorshid.

Emerging technologies and health literacy

Which technologies are likely to have the most impact in the future? AI and machine learning may underpin digital tools in myriad forms. In sum, the power of AI lies in the opportunities for processing large amounts of data and in personalisation of health solutions or information. “Innovative health literacy, supported by digital technology, automatically incorporates the individual’s social determinants of health, particular lifestyles and genetic genomic factors. And then, hopefully, is able to influence behaviour, optimise the treatment needed, and ensure the best outcomes,” notes Mr Sehmi.

AI can also drive the development of more and more sophisticated chatbots, a format that is already widely available. “That may include patient-facing systems where people can enter what’s going on, what their issue is, and an AI-system could provide them with a level of triage or similar helping them make decisions,” notes Dr Khorshid. “We’re certainly expecting things like clinical decision making tools to come down the path later on as well.” Symptom checkers offered by health systems and private providers are already making use of AI (see case study 3). Mr Pinto thinks chatbots can help reduce pressures on already congested health systems, in the context of the pandemic: “They can play a tremendous role in doing triage, telling the majority of people actually you can just stay home, or you should be doing this, or you don’t need to go to hospital.”

²¹⁶ Kubheka BZ, Carter V, Mwaura J. Social media health promotion in South Africa: Opportunities and challenges. *Afr J Prim Health Care Fam Med*. 2020 Jul 9;12(1):e1-e7.

²¹⁷ Roberts M, Callahan L, O’Leary C. Social Media: A Path to Health Literacy. *Stud Health Technol Inform*. 2017;240:464-475.

²¹⁸ IQVIA. The Growing Value of Digital Health. 2017 <https://www.iqvia.com/insights/the-iqvia-institute/reports/the-growing-value-of-digital-health>

Voice technologies are also highly relevant to health literacy, as they can improve patients' engagement with technology. Notably, England's NHS is working with Amazon to offer verified health information through the Alexa voice assistant, recognising the growing importance of these technologies in making health information more accessible.²¹⁹ Wearables promise to be an important tool for self-management, as they allow for a permanent feed of bodily and environmental data and the return of customised information. An example is the electrocardiogram (ECG) capabilities of the Apple Watch.²²⁰

But in fact some of the biggest impact of technology may be taking place behind the scenes, invisible to patients. Technology may create great efficiencies in all layers of health systems, helping to liberate time from professionals which can be used in more meaningful face-to-face interactions with patients and in supporting personalised care.²²¹ Dr Shreibati notes an example in this regard: the Care Studio product by Google organises patients' health record information to support the work of clinicians.²²² As Google Health's website suggests, there is evidence of information overload contributing to the burnout of professionals.²²³ "Health literacy is a universal challenge," she notes. "We're making it easier for any person, whether it's a

doctor or the consumer, to understand health information."

To reap the benefits of technology, societies should strive to cultivate skills beyond literacy and numeracy and into critical and communicative skills, to navigate complex environments as empowered actors.²²⁴

Ms Sørensen says that health literacy in the future will involve continuous learning. "Digital health literacy, digital literacy, media literacy, all these interlinked literacies will be very important for us to navigate the online sphere," she adds. Digital health literacy, for example, refers to health literacy (and its standard definition, as in chapter one) but in the context of technological tools.²²⁵

Health systems and digital creators should also play their part in accommodating patients' needs, and for this an essential element is patient involvement. Mr Sehmi calls for developers to consider patient voices right from the start. "We want patients to engage with the health software manufacturers so that tools make sense to the real life of patients." Dr Shreibati notes this is an important part of product development at Google: "There is a constant iterative process of getting feedback from users. It's really important for developing inclusive products that are useful for all."

²¹⁹ NHS Digital. Blog: How we are talking to Alexa. 2019. <https://digital.nhs.uk/blog/transformation-blog/2019/how-we-are-talking-to-alexa>

²²⁰ Apple. Apple Watch. Helping your patients identify early warning signs. 2021. <https://www.apple.com/healthcare/apple-watch/>

²²¹ DigitalEurope. Harnessing the power of AI in health applications. 2020. <https://www.digitaleurope.org/wp/wp-content/uploads/2020/01/DIGITALEUROPE-position-paper-on-AI-in-health.pdf>

²²² Google Health. Introducing Care Studio. <https://health.google/for-clinicians/care-studio/>

²²³ Kroth PJ, Morioka-Douglas N, Veres S, et al. Association of Electronic Health Record Design and Use Factors With Clinician Stress and Burnout. *JAMA Netw Open*. 2019. Aug 2;2(8):e199609.

²²⁴ Dunn P, Hazzard E. Technology approaches to digital health literacy. *Int J Cardiol*. 2019. Oct 15;293:294-296.

²²⁵ *Ibid*.

Table 8: Examples of emerging technologies with potential to impact health literacy and their applications

Technology	Opportunity	Example
AI/machine learning	Deep learning algorithms can enable highly personalised treatment and care plans.	Boosting developments in genomics (the study of a person's genes), a tool for personalised care solutions
Voice-first solutions (technology intended for operation through voice)	Improve communications and interactions with technology by using voice. Natural language processing	Siri, Alexa, Google Home
Wearables	Atrial fibrillation detection	Apple Watch / AliveCor (a medical device developer)
Remote monitoring	Monitoring of blood pressure	Check.Change.Control (a hypertension management programme by the American Heart Association based on self monitoring)
Apps	Allowing to connect knowledge, numeracy, navigation, communication, and decision-making domains of health literacy	Establishing digital biomarkers (indication of health status) and producing tailored information for individuals.

Source: Dunn P, Hazzard E. Technology approaches to digital health literacy. *Int J Cardiol.* 2019. Oct 15;293:294-296.

Making digital technologies work for health literacy

But technology will not come without its challenges. These are some of the key issues that were raised by experts interviewed in this study:

- **Digital divides and affordability:**

Technology itself can become a barrier to health literacy if segments of the population are left out of digital channels due to high prices of devices or limited connectivity.²²⁶ Even as technologies like mobiles are widely available, "there can be a divide in that files available are too large or slow to download or stream," notes Mr Sehmi.

- **Quantity and quality of information:**

"There's absolutely tonnes and tonnes of information out there, which has happened with covid-19, and there is no way of knowing what is right from wrong," notes Mr Sehmi. "We're overloaded with information, which is difficult to cope with for our brains," says Ms Sørensen. "There are stories from people with cancer or other diseases that are getting a lot of ads for things they may not really need; we see the whole pandemic with fake news."

- **Amplification of misinformation and echo chambers:** Platforms such as social media give opportunity to amplify messages and connect people with similar interests,

²²⁶ Ibid.

but they may also enable easy spread of misinformation and the creation of bubbles. “There is a significant use of social media by fringe groups, who become amplified because of the nature of social media,” notes Dr Khorshid. “The anti-vaxxers are an example of groups that use some of these technologies extremely well to amplify what is generally a fringe message.”

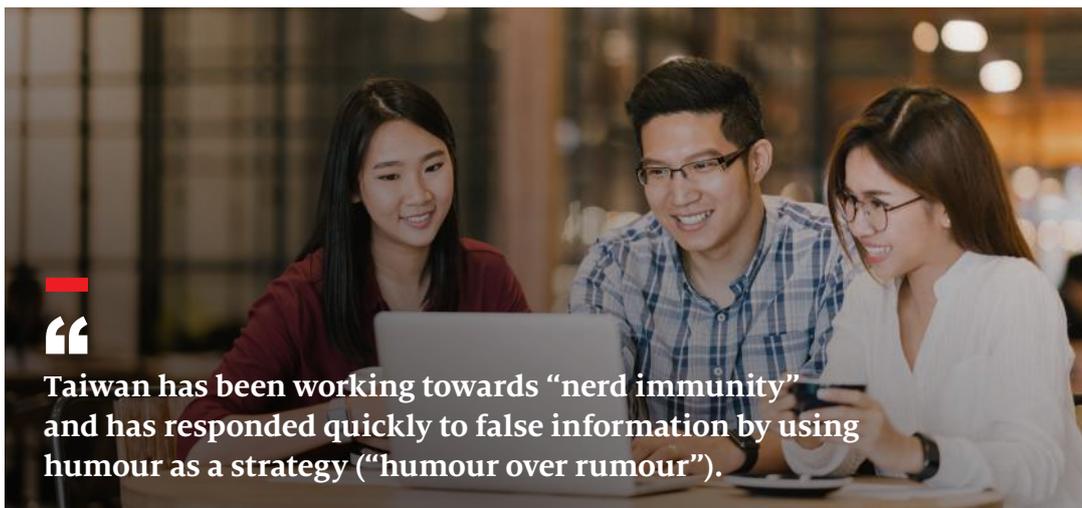
- **Safety, privacy and ethical concerns:**

“Technology can really assist in improving health literacy. As long as that technology is coming from organisations with the right motivation,” notes Dr Khorshid. “You can see health information being stolen or misused by apps; you can see a lot of risk there.” Studies have furthermore shown that groups with low health literacy had more difficulties in assessing the privacy²²⁷ and trust²²⁸ attributes of digital content. Lastly, as healthcare systems become increasingly automated, the risks of social bias observed in some AI applications should also be closely monitored.²²⁹

There is a need for regulators to keep up with innovation

It will be important for regulatory processes to keep moving at the pace of innovation. In this sense, Mr Pinto says: “We will need very skilled regulators who understand AI and who understand the risks of AI.” Dr Khorshid notes: “We do think that our traditional regulations haven’t been built for this social media world. And we need to be more nimble in responding to the threat that misinformation through social media can provide.”

Not moving fast enough can turn digital solutions into part of the problem. Peter Nowak, head of department of health literacy and health promotion at the Austrian Public Health Institute, says: “It is not easy for users of apps to see if these are based on serious evidence, or just follow economic interests of companies. So, it would be good to have some regulations as to the quality of apps.”



Taiwan has been working towards “nerd immunity” and has responded quickly to false information by using humour as a strategy (“humour over rumour”).

²²⁷ Mackert M, Mabry-Flynn A, Champlin S, et al. Health Literacy and Health Information Technology Adoption: The Potential for a New Digital Divide. *J Med Internet Res*. 2016. Oct 4;18(10):e264.

²²⁸ Diviani N, van den Putte B, Giani S, van Weert JC. Low health literacy and evaluation of online health information: a systematic review of the literature. *J Med Internet Res*. 2015. May 7;17(5):e112.

²²⁹ Parikh RB, Teeple S, Navathe AS. Addressing bias in artificial intelligence in health care. *Jama*. 2019. Dec 24;322(24):2377-8.

Dealing with misinformation and disinformation in a pandemic

The widespread reach of digital channels has boosted our capacity to share valuable health information during the pandemic. However, with the proliferation of news sources and channels there has also been an overabundance of information referred to as an “infodemic”.²³⁰ Amid such an explosion of information there has emerged a distinction between information which is essentially wrong or untrue (“misinformation”) and information that is created or shared deliberately to be misleading or harming (“disinformation”).²³¹ “You have some lack of understanding, sometimes, but you’ve also got some deliberate misinforming,” says Ms Shohet. No matter the intent, false information is harmful as it can undermine compliance with public health measures, effective mobilisation for prevention and treatment and can contribute to polarisation, hate speech and social divisions.²³²

Such a complex problem requires action from all concerned stakeholders:²³³ citizens, governments and information platforms, as well as international collaboration. Since the start of the pandemic, online platforms have gradually taken steps to address this issue. For example, Twitter²³⁴ has developed specific policies to limit the spread of false health information in the context of covid-19. Google’s response includes prioritising authoritative information on searches about vaccines²³⁵ and restricting covid-19 misinformation on Youtube.²³⁶ National governments have also taken steps. Taiwan has been a role model in its nationwide commitment to combating misinformation by encouraging online civic participation. Taiwan has been working towards “nerd immunity” and has responded quickly to false information by using humour as a strategy (“humour over

rumour”), fostering public engagement with government messaging.^{237, 238} “One area where we still have some work to do is on whether there should be any regulation of inappropriate healthcare information,” says Dr Khorshid. “It’s certainly a topic of much discussion, and it probably won’t end up being regulated, it’ll probably be more of a government having a role in directing people to trusted sources of information.”

Cross-border collaboration will also be needed. “Let us not think that one country alone can manage this. We must work in global solidarity,” notes Mr Sehmi. “We must have a global standard.” Key international organisations are working on this. A joint statement from September 2020 by the WHO, UN agencies and the International Federation of Red Cross calls for action on the infodemic by national governments and social media organisations.²³⁹ The UN describes multiple approaches taken to fight misinformation: dissemination of accurate information, partnering with businesses, working with media and journalists, mobilising civil society as well as supporting free speech.²⁴⁰

The role of citizens is also important. There is a need for the population to be more discerning and that is when health literacy, and especially critical health literacy comes to play. Finland, for example, has been fighting misinformation for years by teaching children to read critically, starting from school.²⁴¹ “Covid has been a real crash course in a health literacy experience on a planetary scale,” notes Ms Delaney. “We’ve had enormous access to all kinds of information. But at the same time we need to understand it, we need to appraise it in the sense of what’s relevant for me in my life, in my context, and then take action on it.”



Covid has been a real crash course in a health literacy experience on a planetary scale.

Mary Guinn Delaney, regional advisor on health education Latin America, UNESCO, Chile

In order to take a glimpse into how fast governments are moving to recognise the potential and the risks of digital health content, The Economist Intelligence Unit examined how seven countries regulate health apps and health devices.

The clearest guidelines concerning health apps were found in Australia, England, France and

the US. Across these countries, regulations for medical devices have expanded to consider software. Commonly, regulatory procedures apply to apps that serve a clear medical purpose. In Australia, the Therapeutic Goods Administration (TGA) has clear regulation for medical devices (serving medical purposes such as diagnosis, monitoring, prediction, prognosis, treatment).²⁴² The agency

²³⁰ WHO. Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. 2020. <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>

²³¹ Wardle C, Singerman E. Too little, too late: social media companies' failure to tackle vaccine misinformation poses a real threat. *BMJ*. 2021. Jan 21;372:n26.

²³² WHO. Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. 2020. <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>

²³³ National Academies of Sciences, Engineering, and Medicine. Addressing Health Misinformation with Health Literacy Strategies: Proceedings of a Workshop—in Brief. Wojtowicz A, editor. Washington (DC): National Academies Press (US); 2020. Dec 17.

²³⁴ Twitter. Help Center: COVID-19 misleading information policy. 2021. <https://help.twitter.com/en/rules-and-policies/medical-misinformation-policy>

²³⁵ Google. How you'll find accurate and timely information on COVID-19 vaccines. 2020. <https://blog.google/technology/health/accurate-timely-information-covid-19-vaccines/>

²³⁶ Google. YouTube Help: COVID-19 medical misinformation policy. 2021. <https://support.google.com/youtube/answer/9891785?hl=en>

²³⁷ Mahdawi A. Humour over rumour? The world can learn a lot from Taiwan's approach to fake news. *The Guardian*. 2021. <https://www.theguardian.com/commentisfree/2021/feb/17/humour-over-rumour-taiwan-fake-news>

²³⁸ Quito A. Taiwan is using humor as a tool against coronavirus hoaxes. *Quartz*. 2020. <https://qz.com/1863931/taiwan-is-using-humor-to-quash-coronavirus-fake-news/>

²³⁹ WHO. Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. 2020. <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>

²⁴⁰ United Nations. 5 ways the UN is fighting 'infodemic' of misinformation. 2020. <https://www.un.org/en/un-coronavirus-communications-team/five-ways-united-nations-fighting-%E2%80%98infodemic%E2%80%99-misinformation>

²⁴¹ Barber H. Finland's secret weapon in the fight against fake news: its kindergarten children. *The Telegraph*. 2021. <https://www.telegraph.co.uk/global-health/climate-and-people/finlands-secret-weapon-fight-against-fake-news-kindergarten/>

²⁴² TGA. Is my software regulated?. <https://www.tga.gov.au/sites/default/files/my-software-regulated.pdf>

distinguishes between these and health and lifestyle apps or software which serve information purposes only, which are not regulated.²⁴³ Similarly in France, the National Agency for Medicine and Health Product Safety (ANSM), offers information on software and apps. It defines a regulatory process for applications falling under the definition of “medical device”, distinguishing these from other apps, such as those to support compliance with treatment, communication or for physical exercise.²⁴⁴ In the US, Food and Drug Administration (FDA) regulation applies

to applications whose use can pose a threat to consumers and can be defined as a medical device,²⁴⁵ providing multiple examples of those which would fall under this definition.²⁴⁶

The UK shows some leadership in this space. These matters are regulated by the Medicines and Healthcare products Regulatory Agency (MHRA) which similarly focuses on the regulation of applications that can be defined as medical devices.²⁴⁷ The national government further outlines an evaluation process which can be carried out by NICE for

Table 9: Regulation of digital health content

	Australia	England	France	India	Mexico	South Africa	US
Is there a regulatory framework to approve health-related apps/digital tools?	Yes, addressed by the regulator Therapeutic Goods Administration (TGA)	Yes, addressed by Medicines and Healthcare products Regulatory Agency (MHRA), NICE and the NHS	Yes, addressed by Agence nationale de sécurité du médicament et des produits de santé (ANSM)	Partially, there is regulation on medical devices but no specific guidelines for other types of health apps	Partially, not specifically addressed by the Federal Commission for Protection against Health Risks (COFEPRIS)	Partially, no specific rules available from the South African Health Products Regulatory Authority (SAHPRA)	Yes, addressed by the regulator, Food and Drug Administration (FDA)
Are there national standards/guidelines to promote clear and accessible health-related digital content or health communication?	Yes, produced by the Australian Commission on Safety and Quality in Health Care	Yes, the NHS content style guide	Yes, “Communicate for all: Guide for accessible information” by Public Health France	No evidence found	Partially, resources produced by the General Directorate for Health Promotion	No evidence found	Yes, multiple resources available from the CDC

Green = Yes; Yellow = Partially; Grey = No evidence

Source: The Economist Intelligence Unit research.

²⁴³ TGA. Regulation of software based medical devices. 2021. <https://www.tga.gov.au/regulation-software-based-medical-devices>

²⁴⁴ ANSM. Logiciels et applications mobiles en santé. 2017. [https://www.ansm.sante.fr/Activites/Mise-sur-le-marche-des-dispositifs-medicaux-et-dispositifs-medicaux-de-diagnostic-in-vitro-DM-DMIA-DMDIV/Logiciels-et-applications-mobiles-en-sante/\(offset\)/3](https://www.ansm.sante.fr/Activites/Mise-sur-le-marche-des-dispositifs-medicaux-et-dispositifs-medicaux-de-diagnostic-in-vitro-DM-DMIA-DMDIV/Logiciels-et-applications-mobiles-en-sante/(offset)/3)

²⁴⁵ FDA. Device Software Functions Including Mobile Medical Applications. 2019. <https://www.fda.gov/medical-devices/digital-health-center-excellence/device-software-functions-including-mobile-medical-applications#b>

²⁴⁶ FDA. Examples of Device Software Functions the FDA Regulates. 2019. <https://www.fda.gov/medical-devices/device-software-functions-including-mobile-medical-applications/examples-device-software-functions-fda-regulates>

²⁴⁷ Gov.uk. Guidance: Criteria for health app assessment. 2017. <https://www.gov.uk/government/publications/health-app-assessment-criteria/criteria-for-health-app-assessment>

apps that demonstrate a high degree of clinical effectiveness. NICE has published guidance on a number of health apps.²⁴⁸ Furthermore, the NHS features an apps library with tools that have been evaluated. A wide range of digital health tools are available to help manage health and wellbeing in diverse areas such as mental health, sleep, pregnancy, healthy living and cancer. Evaluation is conducted following the Digital Technology Assessment Criteria, intended to set a baseline for what is expected for all types of digital health technologies on the basis of clinical safety, data protection, security, interoperability, usability and accessibility.²⁴⁹

In India, Mexico and South Africa, there was evidence of regulations for medical devices expanding to consider software or apps. However, there was little visibility of considerations on the regulation of information or educational apps which do not serve a specific medical purpose.

Ensuring communication guidelines for clear health information

It may be difficult, however, to regulate every aspect of the digital landscape, so another approach consists in setting standards and principles for clear communication across different formats or media. Our snapshot exercise examined whether there were national standards or guidelines to promote clear and accessible health-related digital content or health communication.

The Australian Commission on Safety and Quality in Health Care, for example, offers numerous resources to support health literacy among healthcare stakeholders, including a fact sheet called “Writing Health Information for Consumers” which addresses aspects such as the use of plain language, design and layout, consumer participation and cultural diversity.²⁵⁰ In France, the national public health agency published “Communicate for all: Guide for accessible information” in 2018. This document refers to national health strategy 2018-2022 objectives of improving health literacy and provides guidance for all forms of communication, such as print, images and digital.²⁵¹ In England, the NHS features a comprehensive content style guide striving for clarity and consistency across the system with advice on creating digital content that is aware of and supports health literacy.²⁵²

Meanwhile, in the US there is a rich collection of resources available from the CDC and other federal entities, such as: Clear Communication: An NIH Health Literacy Initiative (National Institutes of Health); Toolkit for Making Written Material Clear and Effective (Centers for Medicare and Medicaid Services); Health Literacy Online Guide (Department of Health and Human Services).²⁵³ Dr Shreibati notes these are valuable resources for the digital world too, referring to CDC’s Clear Communication Index²⁵⁴ and the AHRQ’s Patient Education Materials Assessment Tool.²⁵⁵ “How can we take all the incredible research out there on health literacy, and

²⁴⁸ NICE. Guidance and advice list. 2021. <https://www.nice.org.uk/guidance/published?type=mib&title=health%20app>

²⁴⁹ NHSX. Digital Technology Assessment Criteria (DTAC). <https://www.nhs.uk/key-tools-and-info/digital-technology-assessment-criteria-dtac/>

²⁵⁰ Australian Commission on Safety and Quality in Health Care. Supportive resources on health literacy. 2019. <https://www.safetyandquality.gov.au/our-work/patient-and-consumer-centred-care/health-literacy/tools-and-resources-for-health-service-organisations>

²⁵¹ Santé publique France. Communiquer pour tous : Guide pour une information accessible. 2018. <https://www.santepubliquefrance.fr/docs/communiquer-pour-tous-guide-pour-une-information-accessible>

²⁵² NHS. Digital service manual: Content style guide. <https://service-manual.nhs.uk/content>

²⁵³ Centers for Disease Control and Prevention. Health Literacy: Guidance and tools. 2019. <https://www.cdc.gov/healthliteracy/developmaterials/guidancestandards.html>

²⁵⁴ Centers for Disease Control and Prevention. The CDC Clear Communication Index. 2020. <https://www.cdc.gov/ccindex/index.html>

²⁵⁵ Agency for Healthcare Research and Quality. The Patient Education Materials Assessment Tool (PEMAT) and User’s Guide. 2020. <https://www.ahrq.gov/health-literacy/patient-education/pemat.html>

around clear communication, and make it useful for interactive digital tools?” she adds. “We at Google are trying to adapt [these tools] for our own product development processes.”

While no comparable guides for online content were observed in Mexico, some resources are created to support health promotion at the federal level, striving to improve the understanding of health issues. In particular, the Federal Directorate for Health Promotion has issued numerous resources,

available on its website, such as educational and communication materials for health promotion and healthy lifestyles.²⁵⁶ The health secretariat also implements a programme called “The National Health Card System” consisting of booklets for individuals of all ages intended to support engagement with health promotion and prevention activities, allowing them to keep track of their health and interactions with health services.²⁵⁷ There was no visibility of such initiatives in South Africa and India.

²⁵⁶ Secretaría de Salud. Materiales Educativos y de Comunicación de Riesgos. 2015. <https://www.gob.mx/salud/documentos/dgps-materiales-educativos-y-de-comunicacion-de-riesgos-12231>

²⁵⁷ Secretaría de Salud. Cartillas Nacionales de Salud. 2015. <https://www.gob.mx/salud/articulos/cartillas-nacionales-de-salud-12270>

Case study 3: The rise of symptom-checking apps and some possibilities for health literacy

Symptom-assessment health apps can give individuals relevant health information based on the type of data (such as symptoms or medical history) they've entered. These apps offer the promise of supporting health literacy as they can allow for relevant, timely and personalised health information, helping with patient empowerment.

Not only can they suggest conditions based on symptoms, they can advise on actions (for example, self-care or seeking emergency services). Research is emerging in this field. A 2020 study, which compared eight apps to each other and against advice from GPs, found that while apps still don't outperform GPs, some of them come close. The criteria examined were: coverage of conditions, accuracy of conditions suggested and quality of urgency advice.²⁵⁸

As technology progresses these tools can be expected to become smarter.

With increasing pressures faced by healthcare systems these apps are emerging as powerful tools for triage or pre-screening. In the context of covid-19, numerous experiences have been documented where healthcare providers enabled chatbots (instead of telephone hotlines, for example) to guide patients appropriately before they approached healthcare facilities (risking overwhelming provider capacity and contributing to dissemination of the virus).^{259, 260, 261} England's NHS 111 online service is an example of adoption of these approaches at a system level. The tool is designed to direct patients to the right healthcare resources within the system. It also features a specific covid-19 assessment tool.^{262, 263}

²⁵⁸ Gilbert S, Mehl A, Baluch A, et al. How accurate are digital symptom assessment apps for suggesting conditions and urgency advice? A clinical vignettes comparison to GPs. *BMJ Open*. 2020. Dec 16;10(12):e040269.

²⁵⁹ Martin A, Nateqi J, Gruarin S, et al. An artificial intelligence-based first-line defence against COVID-19: digitally screening citizens for risks via a chatbot. *Sci Rep*. 2020. Nov 4;10(1):19012.

²⁶⁰ Lai L, Wittbold KA, Dadabhoy FZ, et al. Digital triage: Novel strategies for population health management in response to the COVID-19 pandemic. *Healthc (Amst)*. 2020. Dec;8(4):100493.

²⁶¹ Herriman M, Meer E, Rosin R, et al. Asked and Answered: Building a Chatbot to Address Covid-19-Related Concerns. *NEJM Catalyst*. 2020. <https://catalyst.nejm.org/doi/full/10.1056/cat.20.0230>

²⁶² Pulse. What happened when Pulse tested symptom checker apps. 2019. <https://www.pulsetoday.co.uk/analysis/technology/what-happened-when-pulse-tested-symptom-checker-apps/?cmpredirect>

²⁶³ NHS 111 online. <https://111.nhs.uk/>

Conclusions and policy takeaways

Health literacy, or the competencies to access, appraise, understand and act on information to improve health, is a concept gaining more and more importance. Critical skills will be necessary as healthcare systems become more complex, health solutions more precise and information sources more varied. Knowledge is a prerequisite for empowerment, so the adoption of patient-centred care approaches around the world should be accompanied with improvements in health literacy. There is growing evidence showing that better health literacy pays off, financially and in terms of better health outcomes.

The covid-19 pandemic has brought global attention to how the health and hygiene of individuals have a collective impact. Governments should build on this opportunity to design health messaging, health education and health policies that encourage people to engage more actively in protecting their own health and that of their communities. With growing pressure on healthcare systems and public health challenges coming our way, it's important to consider the concept of health literacy as a tool to build resilient societies. Governments are starting to take note, but are responding to the challenge at different speeds.

Greater engagement with health should be promoted in society from an early age. But also, attention should be paid to vulnerable adults that risk being left behind by healthcare improvements. Importantly, health literacy should be regarded as a joint project involving

not only individuals, but also healthcare systems. Around the world there are examples of healthcare systems and providers driving transformation to make healthcare easier to understand and engage with. Within the healthcare sector it's important to start a change of mindset in healthcare provision, placing the patient at the centre, accommodating their needs and fostering their empowerment regarding their own health, to gain economic and social benefits in return. However, health literacy can be also developed with smaller actions, for example through better communication practices in pharmacies, high-quality health portals or even encouraging the use of visuals and plain language in health-related activities.

Technology offers many promises for the field of health literacy. Technology allows for greater power and flexibility in delivering information and in creating healthcare solutions. This can help boost personalised healthcare, promote patient engagement with health and wider accessibility. Technology can also boost public health communication efforts. However, as seen during the covid-19 pandemic, there are also important risks. Health misinformation is a complex issue with serious public health implications. It will require actions from citizens, governments, businesses and global institutions to be overcome. Governments should catch up with the rapid pace of innovation and enable appropriate review of technologies to protect public health, promote trust and foster continued innovation.

Policy takeaways

Based on our review of recent evidence on health literacy, these are some directions that policymakers and health leaders can take to support societies that are more knowledgeable and more empowered concerning their health:

- **Countries should strive to measure health literacy.** Measurement of health literacy can provide a benchmark when developing policies or strategies tailored to a country's needs. Importantly, the multidimensional nature of health literacy should be taken into consideration. As an example, the 2018 Australian national survey used the HLQ questionnaire which captures multidimensional aspects, identifying strengths and weaknesses to help inform tailored policy responses. Likewise, the HLS tool has been used widely in Europe (and beyond) and continues to expand.²⁶⁴ Attention should be given to identifying vulnerable or priority groups, such as people with lower incomes, older people and immigrants.
- **Countries can start integrating the concept of health literacy in policies.** As a means to coordinate actions in this space, health literacy should be integrated in health policies. For example, France included health literacy within its "principles of action" in the National Health Strategy 2018-2022. A sign of global momentum, China features health literacy as an indicator in its Healthy China 2030 strategy.²⁶⁵ To promote ownership and accountability of this important public health asset, creating a dedicated health literacy body or a champion should be considered. A good example is the Austrian Health Literacy Alliance.
- **Drive health literacy in organisations based on patient-centred approaches.** Multiple approaches are being tried around the world, such as including health literacy parameters in accreditation or certification schemes, and using available communication channels to facilitate better patient engagement. At the core of these transformations should be the aim of supporting the empowerment of individuals regarding their own health. As seen in Taiwan and Australia, system-wide transformations can be driven by introducing mandatory schemes and financial incentives.
- **Train healthcare professionals.** Engaging healthcare professionals will be paramount to the success of health literacy initiatives. Knowledge creation and dissemination should be supported. The education sector and professional bodies should be involved in driving awareness of health literacy, starting in vocational schools, university colleges and universities and into continuing professional development. At the same time, policymakers should be aware of the increasing pressures faced by health professionals and should aim to offer tangible benefits for their involvement in health literacy.

²⁶⁴ HLS19 Project. https://m-pohl.net/HLS19_Project.

²⁶⁵ Tan X, Liu X, Shao H. Healthy China 2030: A Vision for Health Care. *Value Health Reg Issues*. 2017. May;12:112-114.

- **Bring health literacy education into schools.** When introducing health education in curricula, governments may consider approaches such as stand-alone health subjects, or combining health lessons with other subjects on a project basis. Evidence shows that both can work. Programmes should strive for the development of critical skills and the use of real life examples. Finland is a global leader in two important features: including health as a standalone subject and also teaching critical analysis of the media from an early age.
- **Don't forget about adult education, considering vulnerable groups in each context.** This study examined programmes targeting health literacy among vulnerable adults (such as those living in deprived communities, refugees, immigrants, those with low education levels, pre-existing health conditions or disability, and those living alone). Adult education programmes can benefit from community approaches which do not require heavy investments. Programmes in Mexico, Chile and India benefit from such approaches and recognise a social element to building health literacy that is an important facet in many cultures. Immigrant populations may find it particularly hard to navigate complex health systems so targeted efforts in destination countries should be made.
- **Countries should be quick to identify the opportunities and challenges of digital technology.** Digital technology is advancing very quickly and regulators should keep up. The UK offers an example of a government reaching out in multiple directions to regulate and validate health apps, whether medical, informational or educational (as done by the MHRA, NICE and NHS). Actions should also consider building bridges with the private sector.
- **Addressing misinformation will require concerted efforts.** Misinformation is a complex problem that requires action from all stakeholders involved. Individuals need to develop critical analysis skills, businesses will need to show responsibility on limiting the spread of misinformation on their platforms and governments in setting standards and control. There will also be a need for global collaboration to create common understandings and action frameworks that can help protect public health.
- **Participation of people in all levels.** Health literacy requires actions from individuals and health organisations and systems. For all these transformations to be meaningful, patient voices should be heard in all stages and levels. They should participate in health system design, policy design and should engage in co-creation or feedback processes in the development of digital tools.

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