

The *Lancet* Series on the Digital Determinants of Health

Executive summary



Digital technologies have become embedded within the systems and environments that shape health and wellbeing. They influence how people access information, communicate, learn, work, obtain health care, participate in society, and make decisions about their lives. As a result, digital technologies are no longer simply tools used within existing social systems. They have become part of the conditions that determine health.

This Lancet Series describes the digital determinants of health (DDoH) as the ways in which digitally mediated infrastructures, business models, design choices, information environments, and governance arrangements influence health outcomes. The Series argues that digital transformations are reshaping the determinants of health at an unprecedented pace and scale, creating new opportunities for improving health while also generating new risks and inequalities. Understanding and governing these determinants has therefore become a critical public health priority.

The three papers in this Series, developed by a multidisciplinary group of researchers from multiple countries, propose a new approach to understanding and responding to the DDoH, and set a bold agenda for future research, practice and governance.

A new conceptual foundation for understanding digital determinants

The Series argues that digital technologies should be understood not only as individual tools, but as part of a broader digital socio-technological order that shapes the conditions in which health is produced. The first paper in the Series describes the order as being formed through the interaction of political norms, economic logics, digital infrastructures, and social and personal practices. Together, these forces influence how digital technologies are designed, deployed, used, and governed, and therefore how they affect health.

The paper highlights how contemporary digital systems increasingly influence many established determinants of health. The effects of digital systems extend beyond individual users because digital infrastructures, platforms, and data systems now shape institutions, markets, public services, social relationships, and information environments. Consequently, the health implications of digital transformations are distributed across populations and can affect even those with limited direct engagement with digital technologies.

The DDoH framework shifts attention from specific technologies towards the wider systems that produce health effects. It emphasises that the impacts of digital transformations are shaped by power relations, commercial incentives, governance arrangements, and societal values. Through this lens, digital tools and environments become a public health issue not only because of how they are used, but because of the underlying structural conditions through which they operate.

Child and adolescent health in a hybrid world: a case for precautionary public health action

The second paper in the Series applies the DDoH framework to one of the most contested issues in contemporary public health: the impact of digital media use on children's and adolescents' health and wellbeing.

The paper explores the potential public health significance of existing evidence and what remains poorly understood about how digital environments affect young people's health. While digital media use can be associated with both benefits and harms, adverse outcomes are more frequently reported across different health domains. Illustrative modelling suggests that even modest associations between digital media use and adverse outcomes could translate into a substantial population-level burden because exposure is so widespread among children and adolescents. While these estimates are not evidence of causality, they highlight the scale at which small individual-level effects may become important population health concerns.

The paper argues, however, that current evidence often fails to capture the realities of young people's lived experiences in digital environments, including the influence of platform design, algorithmic recommendation systems, data collection practices, artificial intelligence tools, commercial incentives, and the social contexts in which digital media is used. As a result, many of the processes most likely to shape health outcomes remain poorly understood.

Applying the DDoH framework shifts attention from individual behaviour towards the wider systems and structures that shape young people's digital experiences. Given the

ubiquity of digital media use, the consistency of observed adverse associations, the potential for substantial population-level effects, and the concentration of risks among vulnerable groups, the paper concludes that a precautionary public health response is warranted despite incomplete evidence. It calls for improved measurement approaches, greater transparency and access to platform research and data, stronger inclusion of young people in research and policy processes, and increased attention to the impacts of emerging technologies.

Governing the digital determinants of health

The third paper of the Series argues that current approaches to digital governance are fragmented and insufficient to address the health consequences of digital transformations. Many of the factors shaping digital environments fall outside traditional public health institutions, while governance responsibilities are distributed across multiple sectors and jurisdictions. This creates significant gaps in accountability and oversight.

The paper proposes a governance approach grounded in public health values. Rather than focusing primarily on individual responsibility or downstream harms, governance should address the upstream determinants that shape digital environments. These include digital infrastructures, platform architectures, data governance systems, commercial incentives, and mechanisms of accountability.

Particular attention is given to improving the health and online safety of children and young people, who are exposed to digital environments during critical periods of development and may experience disproportionate risks. The paper therefore argues for stronger safeguards, greater transparency, improved accountability, and more effective regulatory capacity to ensure that digital systems are designed and governed in ways that protect health and wellbeing.

Recognising the global nature of digital technologies, the paper also highlights the need for international cooperation and stronger global governance. It argues that addressing the DDoH will require coordinated action across governments, international organisations, researchers, civil society, and the private sector. This includes a call for a WHO Framework Agreement on governing digital and AI transformations in health.

Conclusion

Across the Series, a common conclusion emerges: the current digital socio-technological order presents structural risks to global public health but can be changed through deliberate action.

The concept of digital determinants of health provides a framework for understanding how the current order has arisen and its implications for population health. It highlights the need for research, policy and practice to move beyond narrow concerns with access or individual use and towards a broader focus on the systems, incentives, infrastructures, and governance arrangements that shape digital life.

As digital transformation continues to accelerate, public health institutions, governments, researchers, international organisations, civil society, and industry all have a role in ensuring that digital infrastructures and systems advance health, equity, human rights, and wellbeing. Promoting health in the digital age will require not only

technological innovation, but also deliberate efforts to shape the digital environments in which current and future generations can live, learn, and thrive.

Read the full Series at: <https://www.thelancet.com/series-do/digital-determinants-of-health>

What are digital determinants of health?

The Series defines DDoH as structural conditions that affect health and wellbeing through digitally mediated infrastructures, business models, design choices, and information environments. They encompass the social systems, practices, and rules through which digital transformations operate — and the global conditions and human activities through which health is produced and distributed. As with other structural determinants, DDoH are shaped by power relations, economic logics, and governance arrangements operating at multiple scales.

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