The role of Epidemiology in the Fight against Neglected Tropical Diseases

Daisuke Imoto (1)

1 : DNDi (Drugs for Neglected Diseases initiative)

Epidemiology is crucial for mapping the geographical distribution of NTDs and identifying at-risk populations. Accurate surveillance data allow health organizations to track progress toward the WHO 2030 targets. It helps clarify complex transmission cycles involving vectors (like mosquitoes or flies) and environmental factors. By analyzing how climate change and human mobility affect these cycles, epidemiologists can predict and prevent outbreaks. Epidemiological evidence guides the implementation of Mass Drug Administration (MDA) and vector control. It provides cost-benefit analyses to ensure that limited resources are allocated effectively to areas with the highest disease burden. Epidemiology also highlights the limitations of current diagnostic tools and treatments. This data directs pharmaceutical R&D toward the most urgent needs, such as new pediatric formulations or improved rapid diagnostic tests. DNDi conducted a retrospective data collection study in three different countries, namely in India, Senegal and Ethiopia, to deepen understanding of Mycetoma, one of the most neglected tropical diseases. Mycetoma had been considered widely a disease specific to Sudan, but the study allowed us to realize that the disease is more prevalent than it has been believed in different geographies. The data from the study will raise awareness of the disease and will facilitate implementation of the multi-country phase 3 trial. By presenting DNDi's epidemiological effort in Mycetoma, I will highlight that epidemiology continues to be the strategic backbone of global health efforts, transforming data into actionable policies to alleviate the suffering of the world's most vulnerable populations.

Biography

Daisuke joined DNDi in 2022 as Business Development Director. He expanded his role to lead the DNDi Japan along with the role in Business Development in 2025. He has gained an extensive experience in business development in different sectors, playing a prominent role at the GHIT Fund as Vice President of External Affairs and Corporate Development for three years before joining DNDi. Daisuke is fluent in English and French and holds a BA in Law from the University of Tokyo and an MBA from INSEAD, complemented by a diploma in French civilization from Paris Sorbonne University.

Harnessing Epidemiology for Health Crisis Management: The J-SPEED Japan Approach

Tatsuhiko Kubo (1)

1 : Department of Public Health and Health Policy, Hiroshima University
2 : Department of Multi-Sectoral Preparedness & Strategic Coordination for Health Emergency, Kyoto University

In the immediate aftermath of large-scale disasters and complex emergencies, overwhelming surge needs often create a “fog of war.” In this chaotic environment, relief activities frequently operate in isolated silos, data remain fragmented, and critical public health threats can be easily overlooked. To address these operational gaps, the J-SPEED (Japan–Surveillance in Post Extreme Emergencies and Disasters) framework provides standardized, real-time situational awareness for rapid, evidence-based coordination.At the core of J-SPEED is a pragmatic Minimum Data Set (MDS) designed to enable data-driven coordination across diverse agencies. Unlike traditional, exhaustive epidemiological research, J-SPEED is purpose-built for rapid, actionable data generation that directly informs response efforts. Using a simplified one-page reporting form, frontline responders can document case encounters in under a minute, categorizing them into essential syndromic groupings. These reports are transmitted daily to a Health Emergency Operations Center (HEOC), transforming field observations into visualized, strategic intelligence.The success of J-SPEED in Japan directly informed the World Health Organization’s adoption of the WHO EMT MDS as a global standard. This evolution transitioned a proven national practice into an international “common language,” significantly enhancing accountability and interoperability across borders. By bridging field-level case data with strategic coordination, the J-SPEED approach to “Tactical Epidemiology” enables more timely, life-saving health emergency response. As climate-related disasters and complex emergencies intensify, this scalable framework offers a vital blueprint for global health security and effective humanitarian assistance.

Biography

Professor Tatsuhiko Kubo is a pioneer in tactical epidemiology, transforming field-level data into real-time operational intelligence. He developed J-SPEED, which served as the blueprint for the WHO EMT Minimum Data Set (MDS)—the global standard for health crisis coordination.
As an advisor to WHO and the ASEAN ARCH Project, he has implemented the MDS in over 18 countries—including Mozambique, Moldova, Turkey, Vanuatu and Myanmar—he specializes in bridging the gap between clinical care and strategic decision-making to save lives through data-driven response coordination.

Health situatedness and the limits of generalizable mono-method approaches in heterogeneous contexts

Koen Peeters Grietens (1)

1 : Institute of Tropical Medicine, Antwerp, Belgium
2 : School of Tropical Medicine and Global Health, Nagasaki University, Nagasaki, Japan.
3 : Amsterdam Institute of Social Science Research, Amsterdam, the Netherlands.

Providing concrete empirical examples, Professor Koen Peeters Grietens will examine the difficulties and limits of mono-methodological approaches and the pursuit of generalizability in health research and governance . Classical epidemiological and public health frameworks have been highly successful in producing standardized, transferable knowledge, yet they often rely on singular methodological lenses that lose effectiveness in increasingly diverse and heterogeneous contexts. When applied in such contexts, these approaches can produce a misalignment—referred to here as contextual violence—between methods and the empirical realities in which they are deployed This tendency is reinforced by the privileging of particular methods or forms of evidence as inherently authoritative (methodological fetishism), even when their assumptions sit uneasily with the phenomena under study and obscure contextual specificity. Together, these tendencies can be misdirecting, producing methodologically rigorous research and sustaining technically sound interventions that remain misaligned with the problems they aim to resolve, which is especially the case in marginalized communities or settings. This presentation will advance situational attentiveness and mixed methods as complementary orientations for epidemiological research, aimed at aligning methodological choices with the complexity of disease situations while retaining the strengths of population-level analysis.

Biography

Professor Koen Peeters Grietens heads the Socio-ecological Health Research Unit at the Institute of Tropical Medicine in Antwerp. He holds a PhD in Social and Cultural Anthropology and has conducted extensive research on sociocultural factors related to infectious disease transmission dynamics, community perceptions on health and illness, and their impact on the effectiveness of disease prevention, control and elimination strategies. His professional experience is characterized by extensive field research in low-income countries in West Africa, Latin America and South-East Asia.

Applying Planetary Health framework on epidemiology in complex, diverse, and to-be-inclusive world

Chiho Watanabe (1)

1 : Interfaculty Initiative in Planetary Health, Nagasaki University
2 : Planetary Health Alliance, Japan Hub

It has been already ten years since the word, *planetary health*, was put forward in 2015 by a committee report published in *Lancet*. While the interpretation of this word may vary depending on the context where it is used, it is characterized by its ecological standpoint, systems thinking, and transdisciplinary (i.e., engaging non-academic sectors) nature. All of these characteristics are imperative not only to deal with the problems in the complex, diverse, and dynamically changing world but also to promote a transition to a world that cannot emerge as long as we keep going on business-as-usual. Reflecting these characteristics of planetary health, as a "layman" to epidemiology, I would raise a couple of points, some of which might be already practiced while others are not feasible at all. First, epidemiology needs to find a better way to deal with dynamic events, in which multiple factors - each of themselves are rapidly changing - are interacting with each other. For example, climate change may influence so many physicochemical as well as biological factors that the structure of certain health risk(s) will change very rapidly. Second, locality rather than universality needs to be focused to obtain specific solutions for specific region. Meta analyses should be used not to find universal solution but identify the factors that generate inconsistency among the studies. Third, epidemiology should pay more focus on prediction of future risks. For this, as the Lancet paper pointed out long ago, analyses based on empirical data may not be enough or even misleading, but identification of driving processes and their structures should be prioritized. Epidemiological analyses coupled with physical and social scenarios would be of great use to deal with future challenges.

Biography

Prof. Watanabe is currently affiliated with Nagasaki University. He is ex-Prof of Dept of Human Ecology, the U of Tokyo and former President of the National Institute for Environmental Studies. His research interest has been the interaction between human population and various eco-environmental factors, including chemicals (both hazardous and beneficial) as well as heat exposure. He served as board member of several domestic and international academic societies, and currently acts as steering committee member for Health-GRP of Future Earth as well as for Planetary Health Alliance.