

develop type 1 diabetes. Studies have highlighted anxiety associated with screening,⁴ as well as concerns about the effectiveness of teplizumab.⁵ The wider effect of a positive result needs to be assessed carefully regarding health, insurance, and other social factors that might be affected by having a disease. Similarly, the implications of a negative result also warrant consideration.

Access to teplizumab and other disease modifying therapies will be determined by their price and by whether this will be paid for by the individual or the health system. This access raises issues of equity between and within countries, with some individuals or health systems being able to pay for these therapies themselves and others not.⁴ The private sector's role in screening and introducing teplizumab should not be ignored. In discussing genetic screening in general, Turnbull and colleagues⁶ warn of commercial interests, government targets, and patient groups pushing a particular agenda versus a focus on the scientific benefits.

In their well recognised criteria for the justification of population screening, Wilson and Jungner⁷ discuss that screening should enable the discovery of a given condition with a view to provide a solution to the individual. However, applying these criteria for the general population screening of type 1 diabetes raises questions that require the consideration of ethical, equity, and health system perspectives before translating scientific advances to policy and practice (table).

Considering how the voices of those with lived experiences are integrated when addressing such complex factors and fundamental shifts in type 1 diabetes care is crucial. Finally, the implementation of population screening and use of teplizumab will have substantial financial implications for both individuals and health systems. Careful consideration of

this effect on existing type 1 diabetes care and services needs to be reflected upon.

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*David Beran, Aude Bandini, Emanuele Bosi, Claudia Boettcher, Marie-Anne Burckhard, Matthieu Colange, Nina Tousch, Valérie Schwitzgebel
david.beran@unige.ch

Division of Tropical and Humanitarian Medicine, Faculty of Medicine, University of Geneva, Geneva 1211, Switzerland (DB); Diabetes Center, Faculty of Medicine, University of Geneva, Geneva, Switzerland (DB, VA); Philosophy Department, University of Montreal, Montreal, QC, Canada (AB); Diabetes Research Institute, IRCCS San Raffaele Hospital, Milan, Italy (EB); Pediatric Endocrinology and Diabetology, University Children's Hospital Bern, Inselspital Bern, Bern, Switzerland (CB, M-AB); Department of Clinical Research, University of Basel, Basel, Switzerland (M-AB); Glucose toujours, Paris, France (MC, NT); Pediatric Endocrine and Diabetes Unit, Department of Pediatrics, Obstetrics, and Gynecology, Geneva University Hospitals, Geneva, Switzerland (VS); Institute of Genetics and Genomics (IGE3), University of Geneva, Geneva, Switzerland (VS)

- 1 Phillip M, Achenbach P, Addala A, et al. Consensus guidance for monitoring individuals with islet autoantibody-positive pre-stage 3 type 1 diabetes. *Diabetes Care* 2024; **47**: 1276–98.
- 2 Haller MJ, Bell KJ, Besser REJ, et al. ISPAD Clinical Practice Consensus Guidelines 2024: screening, staging, and strategies to preserve beta-cell function in children and adolescents with type 1 diabetes. *Horm Res Paediatr* 2024; **11**: 1–17.
- 3 Sims EK, Besser REJ, Dayan C, et al. Screening for type 1 diabetes in the general population: a status report and perspective. *Diabetes* 2022; **71**: 610–23.
- 4 Beran D, Abidha C, Adler A, et al. Teplizumab approval for type 1 diabetes in the USA. *Lancet Diabetes Endocrinol* 2023; **11**: 78–80.

- 5 Bombaci B, Passanisi S, Pecoraro M, et al. Use of teplizumab in children and adolescents at risk of type 1 diabetes: perspectives of parents and caregivers from an Italian pediatric diabetes center. *Acta Diabetol* 2024; **61**: 635–42.
- 6 Turnbull C, Firth HV, Wilkie AOM, et al. Population screening requires robust evidence-genomics is no exception. *Lancet* 2024; **403**: 583–86.
- 7 Wilson J, Jungner G. Principles and practice of screening for disease. Geneva: World Health Organization, 1968.

Mpox and diabetes: a needed public health research agenda

In August, 2024, WHO announced that the surge of mpox cases in the Democratic Republic of the Congo constituted a public health emergency of international concern, and endorsed a continuation of that status on Nov 28, 2024.¹ Mpox is a viral infectious disease caused by the monkeypox virus. Since January, 2022, and until time of writing, there have been 124 753 laboratory-confirmed cases of mpox and 272 deaths reported across 128 WHO Member States globally.² With this ongoing public health crisis, an opportunity has arisen to deepen our understanding of the risk of mpox transmission, severity, and clinical outcomes in people with diabetes and the associated public health implications of the intersection of these two conditions.

People with diabetes have a well documented increased risk of severe or prolonged diseases from viral infections.³ This risk of more severe infection-related health outcomes has been attributed to changes in the immune response in people with diabetes including lowered production of interleukins, reduced chemotaxis and phagocytic activity, and immobilisation of polymorphonuclear leukocytes.³ Although poor glycaemic control is often associated with an increased risk of adverse outcomes from infections,

it might not be the only contributing mechanism. A substantial evidence gap remains regarding how diabetes affects clinical outcomes of mpox infection. In a small case series⁴ from a Nigerian facility, one patient with diabetes and poor glycaemic control experienced the longest duration of mpox observed in the study. The patient had upper limb skin lesions that lasted for more than 120 days. Another case was also described in Türkiye.^{4,5}

Addressing the knowledge gap on how diabetes and glycaemic control intersect for people exposed to mpox is important from the perspective of public health. First, if diabetes is to be considered an immune compromising condition that might elevate the risk of severe disease with mpox, this information would be valuable in helping people manage and reduce their risk of acquiring mpox. Second, access to mpox vaccines remains limited in most countries. This scarcity magnifies the need to better understand which populations should be prioritised for vaccination and to strengthen provision of optimal care for people with mpox and other underlying conditions.

There are several possible sources of data through which this issue can be studied. First, it would be helpful to explore any available information from the mpox outbreak in the USA—the largest outbreak of this condition recorded in any country outside of Africa. Second, in the African region, type 2 diabetes is also a prevalent chronic disease. The possibility for overlap in these two conditions might motivate assessing patients with mpox for diabetes through well designed studies. WHO collects observational clinical data for patients with mpox in the global clinical platform. Scientists should be encouraged to record the presence of diabetes in database entries. Finally, secondary analyses of completed large network trials could provide further insights into this intersection.

In summary, mpox is an important infectious disease threat, with evidence gaps for people with diabetes as a potential vulnerable risk group. These gaps have important public health implications, underscoring the need for research to support clinical guidance and public health policy at this intersection.

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**Jennifer Manne-Goehler, Rosamund Lewis, Bianca Hemmingsen
jmanne@bwh.harvard.edu*

Division of Infectious Diseases, Brigham and Women's Hospital, Harvard Medical School, Boston, MA 02115, USA (JM-G); Medical Practice Evaluation Center, Massachusetts General Hospital, Boston, MA, USA (JM-G); Health Emergencies Programme, WHO, Geneva, Switzerland (RL); Department of Non-Communicable Diseases, WHO, Geneva, Switzerland (BH)

- 1 WHO. WHO Director-General declares mpox outbreak a public health emergency of international concern. 2024. <https://www.who.int/news/item/14-08-2024-who-director-general-declares-mpox-outbreak-a-public-health-emergency-of-international-concern> (accessed Feb 2, 2025).
- 2 WHO. 2022–24 Mpox (monkeypox) outbreak: global trends. 2024. https://worldhealthorg.shinyapps.io/mpx_global/#2_Situation_in_Africa (accessed Feb 2, 2025).
- 3 Lontchi-Yimagou E, Feutseu C, Kenmoe S, et al. Non-autoimmune diabetes mellitus and the risk of virus infections: a systematic review and meta-analysis of case-control and cohort studies. *Sci Rep* 2021; **11**: 8968.
- 4 Chika-Igwenyi NM, Unigwe US, Ajayi NA, et al. Atypical mpox in a Nigerian tertiary health facility. *J Infect Dis* 2024; **229** (suppl 2): S181–87.
- 5 Coşkun E, Soyak F, Öztürk-Deniz SS, Kutlu M, Sayın-Kutlu S. Four human mpox cases from turkey. *Infect Dis Clin Microbiol* 2023; **5**: 53–58.

For more on WHO global clinical platform see <https://www.who.int/tools/global-clinical-platform/monkeypox>