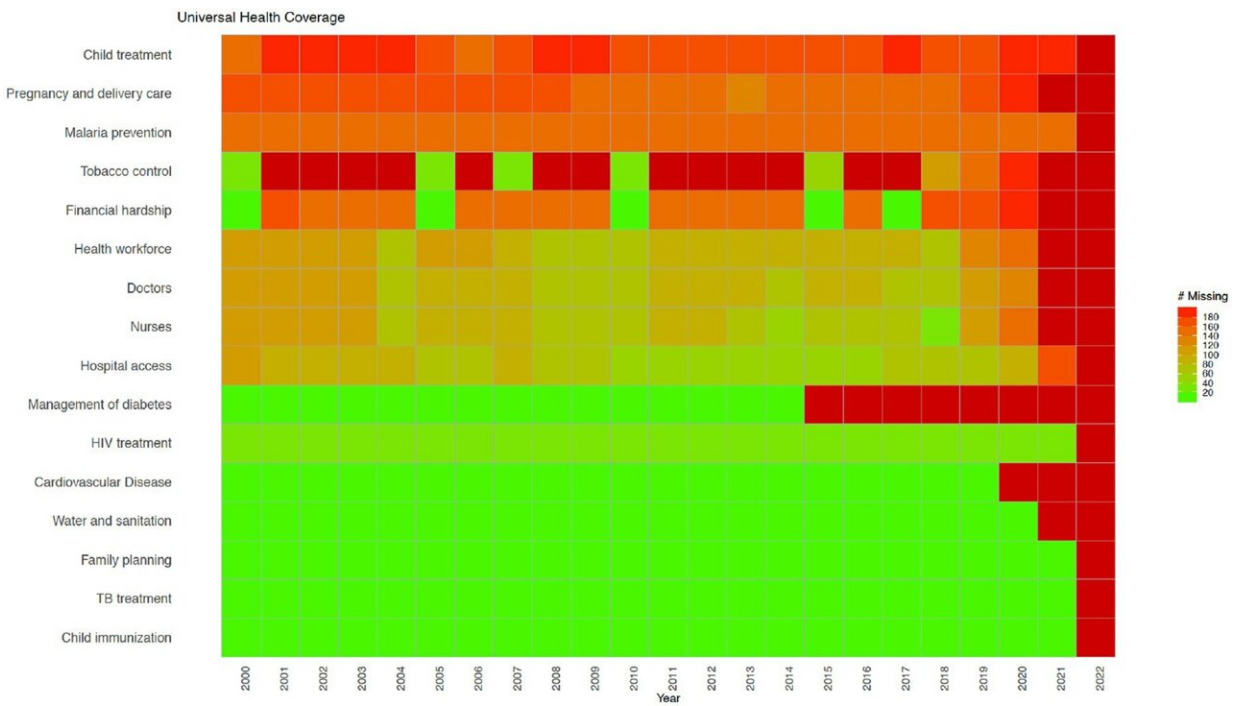


# Unlocking the power of citizen science to monitor health and well-being targets

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Universal Health Coverage indicators from the WHO's Triple Billion Targets and the SDG framework. Dark red indicates that data are missing for all countries for the mentioned year while bright green on the opposite end of the spectrum shows that there are no missing values reported for all countries, which is 194 in total. Shades in between show partial data availability. Source: WHO, 2023. Credit: *Frontiers in Public Health* (2023). DOI: 10.3389/fpubh.2023.1202188

IIASA researchers and experts at the World Health Organization (WHO)

have conducted a systematic review of health and well-being–related indicators, as well as citizen science initiatives, to explore the potential of citizen science for mobilizing action toward the achievement of health and well-being–related targets of the Sustainable Development Goals (SDGs) and the WHO's Triple Billion Targets.

The World Health Organization's Triple Billion Targets, which are largely based on the SDGs, aim to ensure that one billion more people benefit from universal health coverage; one billion more people are better protected from health emergencies, and that one billion more people are able to enjoy better health and well-being by 2025. To achieve these ambitious goals, informed decision making based on robust [data collection](#) and monitoring efforts is essential.

While data availability has improved in recent years, gaps in routine surveillance persist, impeding effective policy formulation and action. In addition, the COVID-19 pandemic has further emphasized the critical need for enhanced data and strengthened health information systems to enable timely decisions that can save lives. Traditional data sources, such as nationally representative surveys, are insufficient and securing funding for monitoring systems using conventional data sources presents significant challenges.

In this context, citizen [science](#), which refers to [public participation](#) in [scientific research](#) and knowledge production, emerges as a promising avenue to address these data gaps efficiently and sustainably. By involving citizens in data collection and analysis, as well as in mobilizing action, this approach can contribute to better monitoring and ultimately achieving health and well-being–related SDGs and Triple Billion Targets.

The systematic review, which has just been published in the journal *Frontiers in Public Health*, demonstrates that citizen science has the

potential to monitor 48 out of 58 health and well-being–related indicators covered. These contributions primarily occur at the local and community levels and can be scaled up to the national and global levels. According to the authors, citizen science has the power to increase the availability, quality, granularity, applicability, and timeliness of health-related data, effectively filling critical gaps in monitoring efforts.

"Establishing trusted partnerships with key stakeholders is crucial to integrating citizen science with official health and well-being statistics. Collaboration with National Statistical Offices, governments, academia, and custodian agencies, including the WHO, is essential to showcase the value of citizen science in health monitoring," explains Dilek Fraisl, lead author of the study and a researcher in the Novel Data Ecosystems for Sustainability Research Group of the IIASA Advancing Systems Analysis Program. "By forging partnerships, citizen science data can seamlessly integrate with official statistics, thereby strengthening the overall monitoring processes."

The findings of the review highlight that citizen science can directly contribute to or complement the monitoring of 83% of health and well-being–related indicators. Notably, the examples analyzed primarily come from low- and [middle-income countries](#), aligning with the "leaving no one behind" principle of the SDG agenda and considering the needs of the most vulnerable populations.

"This is an important study. It provides a [systematic review](#) of citizen science data for health-related indicators, providing valuable insights to where the WHO can explore potential alternative data sources. Given the pioneering nature of this study, the WHO was very happy to collaborate with a credible institution like IIASA," reflected Steve MacFeely, Director of Data and Analytics at WHO.

The authors encourage future research to build on their findings by

identifying citizen science initiatives with the greatest potential based on the data gaps and needs of custodian agencies such as the WHO and National Statistical Offices. By focusing on data management processes and data sets of specific projects, they say, further studies can provide valuable insights into optimizing citizen science for monitoring health and well-being–related targets.

"Citizen science presents a promising approach to monitor health and well-being-related indicators of the SDGs and Triple Billion Targets. By engaging citizens in data collection and analysis, [citizen](#) science can help to bridge critical data gaps, particularly at the local and community levels. Leveraging the power of [citizen science](#) effectively will advance the achievement of [health](#) and well-being goals outlined in the SDG framework and WHO's Triple Billion Targets, creating a healthier and more [sustainable future](#) for all," concludes Linda See, a study co-author and senior researcher in the Novel Data Ecosystems for Sustainability Research Group.

**More information:** Dilek Fraisl et al, Citizen science for monitoring the health and well-being related Sustainable Development Goals and the World Health Organization's Triple Billion Targets, *Frontiers in Public Health* (2023). [DOI: 10.3389/fpubh.2023.1202188](https://doi.org/10.3389/fpubh.2023.1202188)

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