WHO Science Council meeting, Geneva, Switzerland, 11–12 July 2022: report

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1. Background

Advances in science and technology hold great promise for new and improved ways to address global health and to support healthier populations worldwide.

WHO's Director-General, Dr Tedros Adhanom Ghebreyesus, established the WHO Science Council, a group of distinguished scientists from around the world, to work with WHO's Chief Scientist, Dr Soumya Swaminathan, on priority issues and to advise WHO on scientific breakthroughs and new technologies that can help WHO achieve its goals.

The Council's inaugural meeting was held virtually in April 2021, and at this meeting the Council identified genomics as the topic for their first report to the WHO Director-General due to the significant implications of genomics for global health.

The Council's first in-person meeting was held on 11 and 12 July 2022 with the goals of reflecting on their progress over the past year, defining their next steps, and launching the genomics report. In attendance (virtual or in-person) were eight members of the Council, members of WHO leadership including the Chief Scientist, the WHO Secretariat for the Science Council, and other invited participants.

2. Key points

Dr Swaminathan opened the meeting with a presentation on WHO harnessing the power of science for global health and included the following quote from Dr Tedros Adhanom Ghebreyesus:

"*Science is changing at a rapid pace. WHO must not just keep up; we must be ahead of the curve, setting the agenda, driving research and innovation, and ensuring it works for people. We need to ensure that WHO anticipates and stays on top of the latest scientific developments and identify new opportunities to harness those developments to improve global health.*"

Dr Swaminathan then proceeded to explain the Science Division's strategy to achieve these goals by focusing on the three main priorities: 1) timely and evidence-driven norms and standards updated in "real time", 2) forward-looking and prioritized global health research, and 3) adoption and scaling-up of digital health and innovation. She discussed how WHO is changing from old to new processes and provided examples of WHO products and services including guidelines produced in the past two years, a summary of WHO's role in the COVID-19 pandemic, and *a priori* identified components for successful implementation in global health programmes.

WHO's aspirations for the Council are two-fold: to provide strategic direction to WHO's work in science, research, and innovation and to be the voice of scientific leadership for high-priority scientific issues, and advances in science and technology that could directly impact global health. The meeting was handed over to the Science Council Chair, Dr Harold Varmus, and a discussion ensued on how the Council can fulfil their roles and support WHO. Three different modes of operation for the Council were identified consisting of providing rapid responses to hot button issues, analyzing specific topic(s) in-depth, and serving as a source of advice. Each mode of operation was discussed in the context of the Council (terms of reference, composition, available effort etc.) and it was deemed likely that all three modes will be used, albeit as needed, and at different times. This underscored the need to determine the next steps for the Council, which then segued into the remainder of the meeting.

Presentations during the two-day meeting can be categorized as WHO priorities and collaboration opportunities or deliberation on the next steps for the Council to undertake.

WHO priorities and collaboration opportunities

There were four presentations on opportunities for collaboration with the Science Council—WHO Global Health Foresight function, WHO divisions, WHO Council on the Economics of Health for All, and the International Science Council.

WHO Global Health Foresight function. Dr Anna Laura Ross provided information and context on the WHO Global Health Foresight function. The WHO Science Division established a Global Health Foresight function in 2020 to assist Member States to engage in building futures-

thinking and horizon-scanning into their strategic health planning frameworks so they can both better anticipate and prepare for a changing world and accelerate the gains from emerging technologies to address these changes. Foresight is the process of systematically surveying developments in science and technology that are likely to lead to the greatest health, social, and economic benefits. The objective is to understand areas of research and emerging technologies and identify their potential implications and opportunities to draw useful insights for strategic planning, policymaking, and preparedness. The aim of foresight is to identify and connect known, new, or emerging issues that could significantly impact global health within the next two decades. This is done to inform decision-making processes and debates about innovation and emerging technologies and to develop appropriate frameworks for oversight and governance mechanisms.

Next, Ms Marion Laumonier explained the guiding questions for WHO Global Health Foresight function—What are the most impactful, plausible, and novel issues in global health and healthcare over the next five, ten, and twenty years? How do these issues interrelate and how can global health governance respond to scenarios emerging from them? What are the potential risks arising from these developments? She also presented the results from two pilot horizon scan exercises that have already been completed by WHO. Science Council members described their experiences with foresight planning at other organizations, asked questions, and engaged in discussion. WHO Global Health Foresight function is a major WHO initiative and Science Council members will be engaging with the WHO Global Health Foresight function going forward.

WHO divisions. Key WHO leadership were in attendance providing overviews of their respective programmes including Dr Mariângela Simao (Access to medicines and health products); Dr Agnès Buzyn (WHO Academy); Dr Samira Asma and Dr Pavel Ursu (Data, analytics, and delivery); Dr Naoko Yamamoto (Universal health coverage / Healthier populations); Dr Ren Minghui (Universal health coverage / Communicable and noncommunicable disease); Dr Michael Ryan (WHO Emergencies Programme); and Ms Jane Ellison (External Relations and Governance). Dr Peter Singer (Special advisor to the WHO Director-General) and Mr Stewart Simonson (WHO's office to the UN in New York) were also in attendance. The discussions were informative and prompted several potential opportunities to collaborate. The WHO Director-General will meet with the WHO assistant directors-general separately to hear their input on potential areas of collaboration with the Science Council and will report back to the Science Council following these deliberations.

WHO Council on the Economics of Health for All. The WHO Council on the Economics of Health for All was established by the WHO Director-General in November 2020 to put "Health for All" at the centre of how WHO thinks about value creation and economic growth. It is chaired by Dr Mariana Mazzucato and she and members of the Council on the Economics of Health for All including Dr Senait Fisseha, Dr Jayati Ghosh, Ms Vanessa Huang, and Dr Stephanie Kelton presented their backgrounds and commented on potential areas of collaboration with the

Science Council. Dr Julie McCarthy presented information on the WHO mRNA technology transfer hub and how it will serve low- and middle-income countries wishing to produce their own vaccines by building capacity and knowledge within their own countries. This led into a broader discussion on innovation and research and development approaches. The scientific and economic aspects of the WHO mRNA technology transfer hub are intertwined; the economic success depends on the hub being based on sound science, and the science needs economic feasibility to shepherd this technology forward so that true capacity can be built. The WHO Economic and Science Councils will both be working on this area in tandem providing assessments and perspectives that will benefit from mutual collaboration.

International Science Council. Dr Peter Gluckman presented on the International Science Council, an international non-governmental organization that aims to be the global voice for science. Dr Gluckman explained that a major strength of the International Science Council is to bring together scientific experts from diverse scientific disciplines, and he provided a recent project using a systems-based approach to map out what domains were affected by the COVID-19 pandemic as an example of this approach. Discussions were held and three areas of potential collaboration were identified between the WHO Science Council and International Science Council—identification of scientific experts, dissemination of the genomics (and other) reports, and interaction with WHO Science Council on an as needed basis.

Deliberations on next steps

Discussions. There were six formal time blocks allocated for the Council to deliberate on their next steps. Discussion began in round-robin fashion by asking each Science Council member to comment on what they see as key, emerging global health issues over the next twenty years and which of these issues the Council should consider as a topic for recommendations to the WHO Director-General. Several topics were raised as potential next topics for in-depth analysis including: the application of data in clinical decision making and the structures to support data management and application; the need for innovations in diagnostic technologies; an assessment of barriers to innovation and a push for affordability of new technologies; access to imaging and the use of teleradiology; the integration of multiple disciplines in global health; implementation science to move existing technologies into practice; the use of biosensors and