

Editorial

Covid-19 Pandemic: A spoiler for health research

The current Covid-19 pandemic has essentially been an uncharted territory, and has posed multiple challenges to the medical profession. Eight months on, at the end of August 2020, India has recorded a staggering 3 600 000 cases and nearly 65 000 deaths, with more than 75 000 new cases and 950 deaths occurring every day.¹ This has stressed the health system at all levels. Prevention of spread of infection has necessitated drastic measures, including prolonged complete lockdown, followed by continuing travel and workplace restrictions.² A large laboratory capacity has been created for disease diagnosis and to support the test-and-track approach to prevention. Covid-19 hospitals have been set up, intensive care beds have been added and hospital workflows have been modified.²

These changes have been successful in reducing the spread of infection and permitting focused care of patients with Covid-19. However, despite these changes and sometimes because of these, delivery of healthcare for other disease conditions and of other services, such as immunization and contraception, have seen major disruptions.³ In addition, the pandemic has interfered with medical research in a big way, and that is what we wish to focus on here.

Medical research encompasses several diverse domains, including basic research, clinical research including clinical trials, applied or translational research and public health research (including epidemiological, operational and implementation research). The Covid-19 pandemic has affected each of these.

For clinical research, the main challenge has been a reduction in access of researchers to their research participants. The countrywide lockdown and continued travel restrictions have prevented the latter from reaching hospitals and other research facilities. Several large hospitals have either closed or markedly limited their outpatient facilities to reduce crowding and thus prevent transmission of SARS-CoV-2. Many hospitals have been designated as Covid hospitals,² placing these out of the reach of patients with other disease conditions and healthy volunteers. Even where the study participants are in a position to travel and the facilities are open, the study subjects are wary of visiting the latter, for fear of getting infected.

Response to the pandemic has led to diversion of personnel, equipment and supplies. The researchers have seen their clinical responsibilities increase during the pandemic, at the cost of time available for research activities. Covid-19 has also led to increased absenteeism of research personnel from work for several reasons—their being afflicted by Covid-19, enforced quarantine following exposure at home or at work, or the need to look after children because of closure of schools. Laboratory facilities for research have been curtailed due to repurposing of equipment (such as machines for polymerase chain reaction) for Covid-19 diagnostics. Closure of factories and disruption of transport supply chains have made it difficult to procure test kits, reagents and other supplies.

Many routine procedures that require close contact between patients or generate aerosols, and place the healthcare workers at a high risk of Covid-19 (e.g. in ophthalmology, otorhinolaryngology and endoscopic procedures) have been given up unless absolutely essential. The same being true of anaesthesia, elective surgeries have been cut down. In some research protocols, intercurrent Covid-19, though primarily a respiratory illness, has led to a change in the course of the disease condition, through its systemic effects.

All of the above have meant that several ongoing research protocols have had to be discontinued, and those in the planning phase have had to be postponed.⁴⁻⁷ Others have suffered interruptions, leading to protocol deviations, and missed collection of

data on key outcomes.⁸ For many ongoing studies, such as drug trials and long-term cohort studies, this loss of data from missed visits is likely to be permanent.

The impact on community-based research, though less well recognized, has been equally severe. Workplace closures, limited availability of public transport and other restrictions (e.g. the number of persons who can travel in a vehicle) have prevented field visits. When workers do manage to reach the field-site, they often find that families, which previously used to welcome them, are now unwilling to even talk to them. Fear is prevalent that medical professionals are at a higher risk of being infected and of transmitting disease, leading to their being stigmatized. For some of our cohort studies, workers have been denied access to the enrolled children even for simple clinical examination or recording of weight, even though Covid-19 disease is less frequent among children.⁹ The atmosphere is so vitiated that our field teams for a Covid-19 seroprevalence study were manhandled, threatened and taken to a nearby police station.

Several families enrolled in field studies are no longer available because of pandemic-related migration. For others, unemployment, provision of food, taking care of children because of closure of schools and creches, etc. are more immediate concerns, leading to their shunning research studies. Field studies often employ short-term staff, and the pandemic has reduced the supply of such human resource.

Prolonged closure of schools has brought all school-based research projects to a halt. Aanganwadis play a crucial role in community-based research, by acting as a portal of entry into the community, and providing a venue for field-based research activities and coordination with the community. With their closure during the pandemic, this valuable research resource has been shut.

We can foresee further longer-term collateral damage to research. Inability to organize face-to-face training programmes has affected capacity building in research. Funding agencies and research organizations have modified their agendas to prioritize Covid-19 research. This will undoubtedly divert research funds, which are finite, from ongoing research. There are delays in release of committed research grants by funding agencies. The cost of doing research has gone up—with additional expenditure on personal protective equipment and for mobilizing patients especially in community-based research. The pandemic has also caused wastage of research funds—with test kits and reagents being discarded due to stoppage of laboratory activities and on salaries of research staff who despite no work could not be laid off due to moral obligations. Many researchers have opted to give up their current research fields to focus on Covid-19—while this is a necessity for our fight against Covid-19, it does mean a loss for their previous fields of research.

Of course, there have been efforts to resurrect the ongoing studies. The US Food and Drugs Administration (FDA) has come out with guidance on conduct of clinical research during the pandemic while ensuring participant safety.¹⁰ Trial drugs are being couriered to patients' addresses and follow-up is being done through tele-consultation.¹¹ Though the tele-consultation tools have existed for years, these were not being used optimally. Having been adopted now, their use is likely to continue in the future, ultimately reducing research costs and making projects that need frequent observations feasible. Training of young researchers has also moved to online platforms.

The pandemic has spawned a lot of new research activity focusing on Covid-19. Thus, several vaccines against Covid-19 are in phase 3 clinical trials with a distinct possibility of success before the end of 2020. The pandemic has aroused an enhanced public interest in medical science, with terms such as reverse transcription-polymerase chain reaction, reproduction number, disease modelling, being used in lay conversations. The public's trust in science has increased several-fold. Hopefully, this will lead to a greater funding of science in the coming years. Some of the laboratory and other infrastructure created for Covid-19 should be useful for research in other fields too.

The way forward

As the pandemic shows no sign of abatement, investigators on each study need to rapidly take stock. They need to assess whether it is still possible to meet the objectives of a particular study even partially. If yes, they must take steps to quickly modify the protocol as required, while simultaneously instituting measures to ensure the safety of the study participants and the research personnel. If not, they need to decide

whether and how to discontinue the study while minimizing losses. In implementing this, they will need support from their institutions, ethics committees, other regulatory bodies and funding agencies. One hopes that they will rise to the occasion. Let us all try to work together to cut our losses and make the best out of a difficult and unprecedented situation.

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SONALI SARKAR

Department of Preventive and Social Medicine

RAKESH AGGARWAL

Department of Gastroenterology

Jawaharlal Institute of Postgraduate Medical Education and Research

Puducherry 605006

India

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