Impact of COVID-19 pandemic on paediatric services at a referral centre in Pakistan: lessons from a low-income and middle-income country setting

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The COVID-19 pandemic has disrupted health and health systems worldwide, and most countries have still not recovered from the immediate effects of the increased mortality and morbidity due to severe acute respiratory syndrome coronavirus 2 infection.[1] This, in addition to the devastating economic consequences of the prolonged lockdowns, will challenge both developed and developing countries irrespective of their health infrastructure for years to come. It is predicted that these adverse health consequences will disproportionately affect the most vulnerable members of society—our children.[2] Although most children are going to recover uneventfully from the infection, the impact of the disruption on the usual care of children such as school, sports and health-related activities including routine immunisations and preventative care visits is predicted to have severe consequences for the health of children in our part of the world. In a country where routine immunisation coverage was already poor prepandemic, a huge number of children have now missed and will further miss their vaccinations. The consequences unfortunately are already being seen, with multiple new measles and diphtheria cases being reported across the country.[3–5] One of the serious challenges we are facing is with our National Polio Program, where approximately 25 000 polio workers have been diverted to help with the COVID-19 response. The national campaign has been postponed where 40 million children under the age of 5 years were going to be vaccinated. Vaccination centres have been closed during most of this period. There is also a growing concern among paediatrics providers that this lack of access to preventative and specialised care to millions of children will ultimately lead to a huge surge in preventable morbidity and mortality. In an attempt to address this problem, we have systematically studied the disruption in clinical activity at our Children's Hospital at the Aga Khan University, Karachi, and have observed patterns that would help to get routine clinical care back on track.

We observed a small but detectable decrease in outpatient clinic visits as soon as the first Pakistani case was reported on 26 February 2020, even before school closures or lockdown was announced (figure 1). This decline continued steadily for the next 4 weeks, although interestingly, inpatient admissions and procedures continued at previous rates. This probably indicates that during this time, parental anxiety about possible exposure to their children stopped them from visiting the hospital for non-severe illness, but they continued to bring them in for severe illness requiring admission or procedures. A dramatic drop in both outpatient visits and inpatient admissions and procedures was observed when a strict provincial lockdown was announced on 21 March. It is interesting to note that after 1 week of this lockdown, there has been a slow but steady rise in outpatient clinic visits for the next 6 weeks, even as the lockdown has continued. Inpatient admissions and procedures have also shown a commensurate increase during this time, with COVID-19 related admissions being a very small percentage of total admissions. This is despite the fact that the number of provincial COVID-19 cases and related deaths continues to climb sharply. There is a gradual increase over the last few weeks, probably indicating that as the public slowly realises that this pandemic will last for some time to come, the potential risk of exposure becomes less of a factor compared with the perceived health benefits of visiting their child's healthcare provider. A similar drop in routine immunisation rates was observed at our centre in the initial few weeks, and we now see a slow rise in the right direction.

Preparing a hospital facility for this COVID-19 pandemic remains challenging, especially in a set up where paediatrics wards and ICUs are part of a larger hospital taking care of patients of all ages. Mid-March and early April helped us to prepare our paediatrics units (emergency room, intensive care units and inpatient and outpatient areas).

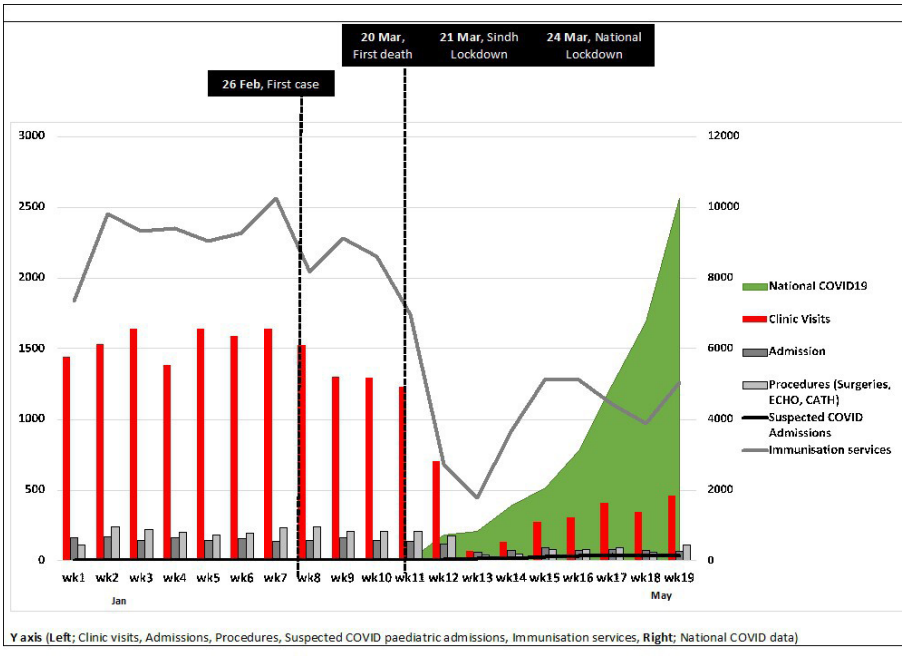

Figure 1 Pattern of outpatient and inpatient visits, procedures, and immunisation services relative to the detection of the first case of COVID-19, and the subsequent lockdown.

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We created negative pressure rooms in the emergency department, paediatric intensive care units (PICU) and neonatal intensive care units (NICU) (4 additional PICU beds and 3 additional NICU beds with negative pressure) and created a 15-bedded paediatrics COVID-19 unit with 10 negative pressure rooms. Extensive training of the staff on personal protective equipment (PPEs), donning and doffing; developing management protocols, screening methods and tools, infection control rounds, online teaching helped us limit the exposure to healthcare workers. A comprehensive protocol for the safe delivery of newborns born to COVID-19 suspect or COVID-19 positive mothers was created, with a dedicated COVID-19 mother and baby unit. A few innovations we introduced included teleclinics, home delivery medications for children on special needs, immunisation services at home and phlebotomy at home to provide lesser exposure to children.

We thus believe that paediatric healthcare providers must ensure that a safe clinic and hospital environment is created for children with both COVID-19 and non-COVID-19 related illnesses so that essential preventive care and health maintenance can be provided to children during this time. It is essential to continue to spread public health awareness messages about how to prevent COVID-19 infection and about the importance of routine immunisations and seeking appropriate advice from healthcare providers when necessary. If parents are reassured that healthcare providers will follow standard operating procedures and will wear and provide appropriate PPEs, they may be more likely to seek appropriate and timely care for their children.

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