Methods

- I performed a descriptive, cross-sectional, population-based survey of 412 households from 20th August 2020 to 10th November 2020.
- I conducted a self-prepared, peer-reviewed, structured interview in the vernacular languages (Hindi and Marathi) of parents with children below 12 years.
- The interview covered four domains: demographics, perception towards immunization during COVID-19 mandated city-lockdown, vaccination delays, and associated barriers.
- The interviews and the tracking of relevant households were carried out with the assistance of the local social health workers.

Results

- Demography: Out of 412 responses -

Gender	Ø Father: 21.6% (n=89) Ø Mother: 78.4% (n=323)
Age group	Ø 18 to 30 years: 61.9% (n=255) Ø 31 to 40 years: 29.1% (n=120) Ø 41 to 50 years: 7.3% (n=30) Ø 51 to 60 years: 1.7% (n=7) Ø 61 years and above: 0
Monthly income in USD	Ø Below 100: 37.9% (n=156) Ø 100 to 200: 42.7% (n=176) Ø Above 200: 19.4% (n=80)
Where does your child receive the vaccination?	Ø Government Hospital: 90.8% (n=374) Ø Private hospital: 3.1% (n=13) Ø Both of the above: 6.1% (n=25)

- Perception towards immunization during Covid-19 mandated city lockdown: (N=412)

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Children should be vaccinated during the current pandemic.	17.5%	66.5%	3.4%	9.9%	2.7%
My child is at increased risk for getting infected with SARS-CoV-2 by the hospital visit for immunization.	72.3%	21.1%	1.2%	4.9%	0.5%
It is not a problem to delay the vaccination of children till after the pandemic.	11.2%	21.6%	4.1%	42.5%	20.6%

- Parents' reasons for delaying vaccination and associated barriers: (N=412)

1. Sick child or family member	19.9%
2. Lack of Transportation facilities	25.1%
3. Social workers are not reachable	53.7%
4. The hospital's vaccination centre is closed	64.3%
5. Fear of getting infected with SARS-CoV-2	82.6%

- Vaccination delays:

According to the National Immunization Schedule, vaccination delays in children below 12 years were present in 378 households (91.7%), ranging from 12 days to 132 days with a mean of 52 days.

Conclusions The disruption of childhood immunization in the Covid-19 pandemic has put children at risk for diseases like measles, rotavirus, diphtheria, etc. A rise in the incidence of these vaccine-preventable diseases will put additional stress on the healthcare system. The government should organize outreach immunization activities to bolster children's vaccination, especially those residing in the containment zones and buffer zones. If a child visits a health care facility for any reason, the authorities should ensure that he is directed to the vaccination centre. Besides, the policymakers should find a sustainable and safe way to restore immunization services to pre-Covid-19 levels.

647

THE ROLE OF MATERNAL EDUCATION ON SMALL FOR GESTATIONAL AGE NEWBORN BABIES IN MEXICO: A DATA MINING APPROACH

Lorena Suarez-Idueta, Mario Cortina-Borja, Helen Bedford. *Great Ormond Street Institute of Child Health*

10.1136/archdischild-2021-rcpch.118

Background Low birth weight (LBW), preterm birth (PTB), and small for gestational age (SGA) are considered adverse neonatal outcomes because of their association with premature deaths and long-term complications in life. Their description are feasible by taking advantage of information routinely collected for administrative purposes. Data mining includes rapidly evolving techniques that have gained visibility because of their potential contribution to describe digital profiles of risks and advocate for more personalized approaches in clinical practice and public policy. However, these novel approaches have not been fully adopted in low and middle-income countries (LMICs), which experience the highest neonatal mortality rates. This research analyses sociodemographic, economic, and clinical factors influencing birth weight across limited-resource settings.

Objectives To investigate the hypothesis that babies of mothers illiterate or with lower years in school have a higher risk of having these adverse outcomes compared with those with more years in school.

Methods This ecological study analyses live births included in the National Registry of Live births in Mexico during 2017. After excluding missing and inconsistent values, data from 1,824,665 (89.1%) singletons were included. Quality assessment procedures were performed to describe and validate the dataset. The analysis used descriptive statistics, visualizations, logistic regression, and conditional inference tree models to establish the pathway within which maternal education influences SGA in Mexico.

Results This study found that 8% of neonates were born SGA. Small babies were more likely to be born in July and less likely to be born in January. Mothers with delayed education had a 41% (OR 1.41, 95%CI 1.38,1.44) increased chance of having a neonate SGA (versus non-SGA) than mothers attending the level of education expected for their age. This outcome was particularly likely among nulliparous

(OR 1.43, 95%CI 1.39,1.48), adolescents (OR 1.18, 95%CI 1.13,1.23), mothers living above 2,000 meters (OR 1.58, 95%CI 1.55, 1.60), those self-identified as indigenous (OR 1.35, 95%CI 1.32,1.39), and mothers living in very high deprivation (OR 1.23 95%CI 1.19, 1.26). On the other hand, antenatal care shown a protective gradient reducing the risk of SGA by 33% (OR 0.67, 95%CI, 0.64, 0.69), 25% (OR 0.75, 95%CI, 0.71, 0.78) and 23% (0.77, 95%CI, 0.73, 0.82) starting at the first, second and third trimester, respectively.

Conclusions Data mining was useful to demonstrate how maternal education and other social determinants influence the proportion of SGA babies who start their lives under significant disadvantages. This digital profiling would be useful to gain visibility of nulliparous women with delayed education who are at the highest risk of having vulnerable newborn babies. Early contact with health care is the best opportunity to reduce SGA live births. Women's access to health care, schooling, and social security are modifiable factors that are feasible to target by political and financial policies.

Quality Improvement and Patient Safety

648 DELAYED CORD CLAMPING QUALITY IMPROVEMENT PROJECT NEONATAL INTENSIVE CARE UNIT -LEEDS CHILDREN'S HOSPITAL

Shambhavi Sinha, Emma Gamwell, Lawrence Miall. *Leeds Teaching Hospital NHS Trust*

10.1136/archdischild-2021-rcpch.119

Background Delayed Cord Clamping (DCC) in a new born is endorsed by The Resuscitation Council, BAPM,RCOG and WHO. A peri-natal Quality Improvement initiative was carried across the neonatal units at Leeds Children's Hospital.

Objectives The aim of this project was to introduce a delay between birth and clamping of the umbilical cord of 1 minute or more. This allows smoother physiological transition, reducing IVH and mortality in preterm babies. Our target was to achieve 80% of preterm babies having DCC of more than 1 minute.

Methods Quality improvement methodology was applied at various stages. This collectively included brainstorming, creation of a driver diagram with steps to consider, its implementation at various primary and secondary driver levels and writing of a standard operating procedure (SOP) jointly with maternity. Monthly we collected pre and post intervention data from several neonatal databases, progress was reviewed and obstacles tackled. Tools used were multidisciplinary meetings, teaching to healthcare professionals, posters, simulation scenarios and a big push towards documentation of DCC to achieve quality data.

Results Results were analysed and interpreted through run charts and pie diagrams. Pre- intervention data (Jan 2019-Nov-2019) showed nearly 100% of DCC in term babies which completed phase 1 of the QI project. Phase 2 utilised our interventions to aim to achieve 80% DCC compliance in preterm babies. Both subgroups of babies showed significant improvement in DCC post intervention (Dec 2019-November 2020); from median 38% to 65% (32–36 weeks) and 0%

to 50% (<32 weeks). Less variability is noticeable in the 32–36 week group, however there is wide variability in the extreme preterm group which is attributable to small numbers of babies being born and their condition at birth. Phase 3 is to support resuscitation on the cord with a Life start trolley.

Conclusions Introduction of quality Improvement measures in the form of education, communication, promotion and guideline development, our institution showed significant success in the rate of deferred Cord Clamping in a new born. There has been a significant improvement in compliance across both preterm subgroups. We hope the rates of compliance will improve further upon the introduction of a Life start trolley.

Quality Improvement and Patient Safety

651 SURVIVING AND THRIVING – CREATING A CULTURE OF IMPROVEMENT DURING COVID

¹Sahana Rao, ²Tim Sell. ¹Oxford University Hospitals NHS Foundation Trust; ²Oxford university Hospitals NHS Trust

10.1136/archdischild-2021-rcpch.120

Background Staff strive to deliver high-quality care in demanding settings, and though keen and motivated, are often short on time, support, or skills to engage in quality improvement (QI) activities. There is a perceived notion that, though there are QI opportunities for senior medical and nursing staff, these are less accessible to allied health care professionals. Experience and feedback have shown that formal support for developing QI skills is often fragmented, difficult to access and as a result, QI can be seen as a 'tick-box' exercise or undertaken only if mandated as essential for progression.

Objectives Our aim was to develop QI capability amongst multi-professional staff thereby empowering individuals and teams to drive a culture of continuous improvement.

Methods We set up QI Hub in 2018 to enable multi-professional staff to develop QI capability, by providing shared learning, collaboration, and individual mentorship. Hub is multi-disciplinary and open to everyone within the Trust.

The format consists of a structured and comprehensive QI educational programme providing fortnightly, dedicated teaching on key QI methodologies including Model for improvement, Process map, Lean, and patient involvement. Each session is followed by individualised, practical face-to-face workshops with mentors, covering projects, ABCD, and action learning sets. Our faculty come from different specialties, providing effective communication and shared, collaborative QI. Each cohort runs for 4 months.

Due to restrictions during COVID, staff were struggling to undertake or receive support for QI projects. We adapted the program to deliver it remotely since May 2020, with fortnightly sessions of dedicated online QI teaching, mentorship, and virtual workshops.

Surveys were conducted for individual sessions, at end of each cohort and after one year of completion.

Results QI Hub has been running successfully for 2 years and we have supported 70 QI projects with over 80 participants.