

# BMJ Open Quality COVID-19 and maternity care in South East London: shared working and learning initiative

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## ABSTRACT

The SARS-CoV-2 COVID-19 pandemic has had an immediate and profound impact on how healthcare systems organise and deliver services and specifically, there is a disproportionate negative impact on Black, Asian and Minority Ethnic groups and other risk factors. This has required clinical leaders to respond at pace to meet patient's care needs, while supporting staff working in a volatile, uncertain, complex and ambiguous environment. During the initial wave and then the later waves within our South East London sector, there were new challenges as everyone faced a novel disease necessitating real-time learning and reflection. Through informal conversations and networks, the clinicians highlighted in the first wave the need for a forum for clinical discussion. Using our existing South East London Local Maternity System and the evolving Maternal Medicine Networks alliance, we initiated a sharing and learning platform to support clinical decision-making for all maternity health professionals during the pandemic. Fortnightly, multidisciplinary virtual huddles were established allowing obstetric physicians, obstetricians, midwives and obstetric anaesthetists to share their clinical experience, operational and service challenges. This approach fostered and developed cross-site team working and shared learning across traditional, organisational boundaries. In South East London, prior to the introduction of universal testing in the first surge, we had a total of 65 confirmed positive cases of which 5 women were delivered due to COVID-19, 5 women required high dependency or intensive care and 3 women were intubated and ventilated. During the second and third waves, the COVID-19 Local Maternity System huddles provided monthly learning opportunities to share clinical practice, guidelines, vaccination updates and challenges with workforce. The huddles have proven to be a sustainable platform, which have built trust across the sector, facilitating effective teamwork and providing invaluable support for clinical decision-making. We describe the evolution of this structure and share our experience of working within this new clinical network during the first wave and how this established way of working facilitated collaboration during the second and third waves as staff and the system became more fatigued. The huddles have developed to become multi-professional, multisite collaborations with the whole group taking joint ownership to develop shared learning and are providing a forum for discussions for the emerging South East London's Maternal Medicine Network.

## PROBLEM

The SARS-CoV-2 COVID-19 pandemic has had an immediate and profound impact on how healthcare systems organise services and the need to develop virtual ways of simultaneous teaching and learning. For maternity services, the clinical presentation of positive or suspected COVID-19 was a new clinical challenge. During the first wave, we all faced a novel pandemic first-hand and were acquiring new knowledge on a day-to-day basis. The maternity services in South East London (SEL) provide care to over 25 000 women. The three provider Trusts are Guy's and St Thomas' Hospitals NHS Foundation Trust, King's College Hospital NHS Foundation Trust and Lewisham and Greenwich NHS Trust Hospitals. SEL Local Maternity System (SEL LMS) consists of six boroughs, it is a densely populated area and as such carried increased demographic risks of COVID-19 transmission. It has a diverse population of 1.9 million, with the number of people from Black, Asian and Minority Ethnic (BAME) groups ranging from 16% in Bromley to 45% in Lewisham, with 4 out of the 6 boroughs ranking among the 15% most deprived in the country or London (Trust for London 2019).<sup>1</sup> Several SEL LMS boroughs report higher than average obesity rates, with one borough reporting a higher proportion of levels of obesity and smokers than most other London boroughs. There is a high proportion of residents in Lewisham who have diabetes mellitus and one-fifth of residents in Southwark rank in the most deprived in England 'SEL Clinical Commissioning Group 2020'. The mentioned conditions are also all risk factors for COVID-19. By the 29<sup>th</sup> June in the first wave, 6273 people had tested positive to COVID-19 'SEL Clinical Commissioning group 2020', of those there were 65 cases for maternity. The aim of the project was to promptly share and support

clinical decision-making for all maternity health professionals during the pandemic across the sector using the particular expertise of obstetric physicians.

## BACKGROUND

An LMS is coterminous with its integrated care system and brings together local providers, commissioners and organisations to develop a shared vision to implement the maternity transformation programme and NHS long-term plan maternity priorities of more personalised and safer maternity care.<sup>2</sup> The formation of a Maternal Medicine Network (MMN) as recommended in safer maternity care<sup>3</sup> aims to deliver coordinated and timely specialist care for women in the sector with complex medical conditions.

The aim was to work together and provide shared learning and governance in response to an unprecedented clinical pandemic. Responsive innovation and creativity are facilitated by individuals who collaborate across clinical networks. Good communication, common purpose, reflexivity and diversity leads to safer, higher quality patient care.<sup>4-6</sup>

During the fast-paced changing landscape of the COVID-19 pandemic, we have come together across the LMS to provide this. During the first wave, clinicians started to highlight the clinical management of positive or suspected pregnant women with COVID-19 and the need for rapid shared learning and education to assist clinical decision-making. There was a swift response, in terms of reviewing care pathways to continue to provide safe care for women during the pandemic. Simultaneously, providers and royal colleges were also focused on keeping staff safe.

We were apprehensive due to the outcomes of the swine influenza epidemic with the knowledge of the four fold-five fold increased risk of dying from swine influenza for pregnant woman.<sup>7</sup> Studies point to a possibly increased risk of severe disease from COVID-19 for pregnant women compared with non-pregnant women with COVID-19.<sup>8</sup>

During the early stages of the pandemic, the guidance issued centrally from NHS England and Improvement was organisational. It became obvious across the SEL LMS that we needed to share and support the clinical knowledge that was evolving in order to address the needs of local women and support staff clinically until more information was available. We tailored our implementation strategies by collating the baseline local practices and by reviewing the variation in pandemic severity.

## Measurement

The following case highlighted the need for increased awareness of the COVID-19 pandemic as it occurred across SEL and was the catalyst for sharing and learning huddles.

## Case study

An Asian woman in her 20s, body mass index 23 kg/m<sup>2</sup>, presented at 30+5 weeks gestation to a hospital in the

sector with symptoms of shortness of breath, pleuritic chest pain and dry cough. She had coryzal symptoms for 10 days. She attended the emergency department and had a chest X-ray, which reported atelectasis in the right upper and lower zones and was discharged with antibiotics. She was readmitted 2 days later to a medical ward and was reviewed by both the medical and obstetric team. A pulmonary embolism was excluded by a CT pulmonary angiogram scan and COVID-19 remained high on the differential diagnoses. Over the next day, she deteriorated significantly, and oxygen saturations reached 94% on fractional inspired oxygen 0.40/9L with a venturi mask. Discussions between medical, obstetric and anaesthetic colleagues revealed the pathway of care for pregnant women unwell with COVID-19 was ambiguous. Informal advice was sought from one of the obstetric physicians in the sector. The mother was delivered by a caesarean-section locally and both mother and baby did well. This case was the springboard for our sharing and learning huddles.

The LMS COVID-19 huddles were initially fortnightly and then moved to monthly as the intensity of the first wave regressed. Up to 46 members of staff participated, with all hospitals being represented. The healthcare professionals taking part were multidisciplinary and included obstetric physicians, obstetricians, obstetric anaesthetists, directors and heads of midwifery, consultant midwives, matrons, delivery suite midwives and specialist midwives.

Following the first meeting, a COVID-19 score card was developed with specific metrics (**Box 1**). For subsequent meetings, the hospital site leads would complete the scorecard and discuss their data during the huddle, highlighting areas of particular interest and learning. The discussion focused on areas specific to each trust with the aim of learning from good clinical practice and exploring unwarranted clinical variation alongside the guidelines released from the Royal College of Obstetrics and Gynaecologists (RCOG) and the Royal College of Midwives (RCM).<sup>9</sup> Common themes emerged such as thromboprophylaxis, intrapartum sepsis, third trimester presentation, hypoxia and escalation pathways and the need for training across the sector. There were no maternal deaths due to COVID-19 over this time in the sector.

### Box 1 COVID scorecard metrics

- Number positive
- Number negative
- Suspected COVID in pregnancy with chest symptoms
- Swab result turnaround time
- Delivered due to severe COVID .
- High dependence unit /Critical care admission
- Intubated and ventilated
- Positive postnatal
- Positive antenatal
- Asymptomatic positive

## Design

The SEL LMS provided a safe forum for discussion in which clinicians were able to seek advice and guidance, discuss and review cases to inform clinical practice and identify shared learning and education opportunities. It was led by one of the sector's obstetric physician and the clinical chair of the SEL LMS using a collaborative network approach. The project leads were a consultant obstetric physician and LMS midwife programme manager, who had daily contact via email or telephone to decide on format of the meetings and organisation issues. The implementation team expanded to include obstetric consultant leads for each hospital who cascaded meeting details to all staff on their sites.

Fortnightly, Microsoft teams' meetings were established and chaired by one of our consultant obstetric physicians, AB. Representatives from the sectors' hospital maternity departments, obstetricians, midwives and obstetric anaesthetists joined the meeting sharing number of cases, particular learning and identifying further learning needs. We identified training methods being used across the system, identified gaps and developed educational tools. We quickly recognised that a networked approach should include our colleagues in neighbouring LMSs and extended the reach to Kent and Medway, where we have strong clinical networks and relationships.

Generic and trust bespoke blended educational tools were developed: an animation explaining the physiology of pregnancy and clinical features of COVID-19, an oxygen therapy webinar, templates for maternity case simulation in all settings when encountering a pregnant woman with COVID-19 and an online e-learning case study. These teaching packages were readily available to support training during the second and third waves. The LMS huddles occurred fortnightly during the first wave owing to the fast changing environment and high support need of the multi-professional teams. Their success during the first wave has resulted in the ability to flex between COVID-19 and maternal medicine sharing and learning across the system as the pandemic has unfolded. In the second and third waves, hospital care became more robust and guidelines were shared. In the first wave, there were more than 65 pregnant women testing positive, during the second wave more than 200 tested positive and more than 500 at the beginning of third surge. The meetings are now monthly and are developing into non-COVID-19 discussions. National support for MMN has provided the opportunity to understand pathways for non-COVID-19 conditions and non-maternity specialists are now joining the huddles.

The LMS had a sharing and learning workstream as part of its Better Births plan aiming to share learning from the maternity safety reviews. The COVID-19 pregnancy sector huddle model is unique in its multidisciplinary membership and responsiveness. This model has been a catalyst for change in our sector highlighting the need to share information transparently, widely and frequently. Each workstream within the SEL maternity transformation

programme now hosts virtual events to enable sharing and learning, with initial learning also being shared via a pan-London webinar.

## Strategy

Our overall aim was to provide a sharing and learning platform to support clinical decision-making for pregnant women during the first wave of the pandemic. Plan, Do, Study Act (PDSA) cycles were used as an improvement tool. The project team met following each PDSA cycle to discuss what went well and areas for improvement, these were then incorporated into subsequent planning. Feedback was also sought from participants enabling evaluation of the impact of the intervention.

PDSA cycle 1: our initial intervention was to hold a multidisciplinary team (MDT) pregnancy huddle led by a consultant obstetric physician. Communication and organisational support were provided by the LMS midwife programme manager. Due to the pandemic, timescale and that the range of people needing to be included being spread over a large geographical area, a virtual meeting was arranged. All hospital sites within the LMS were represented with consultant and midwife site leads working within the trusts identified. Evaluating this initial intervention through informal feedback and discussions outside the meeting and engagement with the meeting, it became clear we needed to standardise our approach for data collection and a scorecard was developed and disseminated. From this initial huddle, the themes for learning were identified along with the need for specific teaching aids to support clinical management, skills development and sharing of current aids that were working well. We also recognised our MMN footprint extended beyond the LMS and extended our reach to include hospitals in Kent and Medway.

PDSA cycle 2: a COVID-19 metrics scorecard was developed and sent to hospital site leads to complete. Teaching aids started to be developed to address themes identified above. Guy's and St Thomas' Hospital's COVID-19 escalation pathway was shared. The second huddle occurred a fortnight after the first. The standardised scorecard allowed us to see similarities and differences between all the sites in terms of numbers of women presenting. We noticed differences in swab result time between 2 hours and 30 hours. For sites working with the extended times, this presented challenges for management and cohorting of patients. This was an unexpected finding and one that was taken to the LMS board to try and address the inequity.

PDSA cycle 3: it was decided the third huddle would be a month after the second as cases were declining and to allow time for feedback and further development of proposed teaching aids. The scorecard was revised to include antenatal and postnatal cases. A further consideration for the project team was to accurately record ethnicity data as women from BAME communities were more likely to become seriously ill due to COVID-19 infection. There were inconsistencies in recording ethnicity

Table 1

COVID wave	Huddle themes	Huddle outcomes
Overarching outcome: supportive, safe environment for sharing and learning		
First wave (wild-type variant) March–November 2020	Personal protective equipment Workforce Thromboprophylaxis Swabs: timing of and technique Intrapartum sepsis Third trimester presentation Hypoxia and escalation Training across the area	Sector COVID-19 scorecard developed Teaching aids: animation, oxygen therapy and maternity escalation
Second wave (alpha variant) Dec 2020–mid-May 2021	Cardiology Nephrology Neurology Maternity and neonatal health collaborative COVID-19 vaccinations Workforce	Service to use coordinate my care for high-risk women Non-maternity specialists included in huddles Dissemination of Maternal Medicine Network guidelines and directory of key people to ensure aware of pathways
Third wave (delta variant) Mid-May 2021–Present	Pulmonary hypertension Onboarding/community pulse oximetry Choice and personalisation Workforce	Sharing of guidelines across sector Getting onboarding right Mutual aid through critical care network and across the sector facilitating early referral discussions

that needs to be further addressed. Feedback highlighted the value of the shared learning forum and the need for the huddles to continue. To embed and sustain the model, it was decided to broaden the scope to include more generally the management of the deteriorating women in pregnancy. Maintaining the ability to increase the huddle frequency, should we find ourselves facing a second wave.

The model subsequently evolved into non-COVID-19 monthly learning. Themes and outcomes for each wave are included in [table 1](#).

## RESULTS

Overall, we achieved our aim to promptly share and support clinical decision-making for all maternity health professionals during the pandemic across SEL. The success of the initial huddle resulted in the reach being extended beyond our LMS. The supportive learning environment and sharing of pathways increased staff confidence and calmed anxieties. Shortly after the initiation of our intervention, the London Maternity Clinical Leaders Group met to discuss the COVID-19 pandemic. We shared our ideas and escalation pathways in the forum.

One of the notable challenges was the time available to develop learning tools as this was in addition to clinical duties. However, the establishment of these meant we were well equipped to cope with the subsequent waves enabling appropriate training to occur. Several unwarranted variations were also identified, for example, the variation in swab to result time across provider organisations.

The RCM and the RCOG<sup>10</sup> in March 2018 issued a joint statement on the importance of multidisciplinary working for the delivery of safe maternity care. The RCM and RCOG<sup>11</sup> in a joint response to the rapid report from MBRRACE-UK<sup>12</sup> into maternal deaths during the SARS-CoV-2 pandemic again highlighted the need for high-risk

women to be cared for by an MDT. This ambition has been realised by the model described here. They have also been a catalyst for the further development of a wider learning and sharing platform across the LMS and beyond.

## Lessons and limitations

The project's aim was to provide a sharing and learning platform to support clinical decision-making for pregnant women during the pandemic. This rapid response to a quickly changing clinical landscape during a pandemic has resulted in the process becoming embedded in the learning and sharing strategy within the LMS. The learning and teaching tools developed provided us with COVID-ready training and education.

The success of the huddles was seen during the second and third waves of the pandemic when maternity services experienced higher acuity and a reduction in staff due to COVID-19 infection and overall lower staff morale. There were earlier transfers to tertiary centres and more timely intervention by providing mutual aid in our sector and beyond for managing deteriorating pregnant women with COVID-19, increased awareness and clinicians across the sector reaching out earlier for help and support.

A key strength of the project was its team's diversity, professional, regional and national leadership and influence, clinical experience and its emphasis on a collaborative inclusive approach, which engaged widely within the sector. The process had the unintended consequence of promoting team-building with the positive impact of an increase in relationship building and networking. The authors now see a key outcome of the work was an increase in effective team-working across the sector and sustainability of the huddles, beyond the initial intervention during the first wave. With the publication of the interim Ockendon report,<sup>13</sup> just prior to the second

wave, our work was timely. The huddles have strengthened our SEL network through peer support. One of the immediate actions being ‘safety in maternity units across England must be strengthened by increasing partnerships between Trusts and within local networks’.

Limitations of the first wave intervention included the redeployment of the midwifery programme management function of the LMS, which resulted in a reduction in the ability of the sector to address issues as a system, for example, the discrepancies in swab turnaround times. Although understandable at the beginning of the pandemic, it highlights the importance of system level working to improve outcomes. It was subsequently escalated to directors of midwifery and the LMS’s co-chairs. The learning from system-wide coordination, using established networks to bringing together staff who are providing care and those working strategically, had been valuable for future emergency planning.

Gathering the right people and ensuring information was cascaded were a challenge. A mitigating action was to share recordings of the huddles. The first wave huddles were predominately attended by medical staff. This was subsequently addressed by direct communication with midwifery leaders and midwives as well as medical staff leading huddle presentations.

The study highlighted discrepancies in the sectors ethnicity recording. Maternity ethnicity data have since been addressed nationally. SEL LMS has significantly improved and is now reporting consistently as required. Data collection generally was a challenge prior to COVID-19 and although advances have been made, it remains a significant challenge which is being addressed.

A further limitation is the small number of women involved making it difficult to demonstrate quantitative outcomes. However, research highlights the more staff who are working in effective teams, the more innovative and creative they can be resulting in better quality patient care: this is reflected in higher patient satisfaction scores and significant reductions in mortality.<sup>5</sup> More time is required to see the impact of working in this way. The development of a short qualitative survey for use prior to and post subsequent huddles would have helped contribute to further insights.

## CONCLUSION

The already established SEL LMS network enabled the team to move at pace to establish the learning and sharing COVID-19 huddles and respond to the needs of clinicians managing pregnant women during the SARS-CoV-2 COVID-19 pandemic in a volatile, uncertain, complex and ambiguous environment. The project used a collaborative network approach to support and provide a safe space for the maternity MDT across the sector and beyond.

As a result of the wide engagement and positive feedback from the huddles, the model has been expanded to include more broadly the management of the medically

complex and deteriorating pregnant woman across the sector. This method of learning frequently and on recent clinical events is being embedded within our LMS and the process, method and outcomes are being shared pan London. We believe it could be expanded as a virtual learning tool to other clinical specialties and shared more widely within trusts at clinical governance forums.

Limitations of the study include difficulties in addressing system wide concerns such as swab turnaround time during the first wave. The project leaders also addressed the need for increased midwifery involvement and cascading of information as the project progressed. A major challenge was system-wide data collection.

Knowledge sharing is critical for optimum team performance.<sup>14</sup> The LMS was able to provide safe maternity services during the first surge of the pandemic with the collaborative foundations enabling us to provide enhanced care and support for women and staff during subsequent waves of the COVID-19 pandemic.

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