Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the inspections of maternity services at St. Luke's General Hospital, Kilkenny.

Monitoring programme against the *National Standards for Safer Better Maternity Services* with a focus on obstetric emergencies

Inspection dates

Unannounced inspection : 12 November 2018 and 13 November 2018

Announced inspection : 3 September 2019

Safer Better Care

About the Health Information and Quality Authority (HIQA)

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA's mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children and Youth Affairs, HIQA has responsibility for the following:

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.

- **Regulating social care services** — The Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children's special care units.

- **Regulating health services —** Regulating medical exposure to ionising radiation.

- **Monitoring services** — Monitoring the safety and quality of health services and children's social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.

- **Health technology assessment** — Evaluating the clinical and cost-effectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.

- **Health information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland's health and social care services.

- **National Care Experience Programme** — Carrying out national service-user experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.

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1.0 Information about this monitoring programme

The *National Standards for Safer Better Maternity Services*[1] were published by HIQA in 2016. Under the Health Act 2007,[2] HIQA's role includes setting such standards in relation to the quality and safety of healthcare and monitoring compliance with these standards.

HIQA commenced a programme of monitoring against the *National Standards for Safer Better Maternity Services*, with a focus on obstetric emergencies, in maternity hospitals and in maternity units in acute hospitals in May 2018. The *National Standards for Safer Better Maternity Services* will be referred to as the National Standards in this report.

For the purposes of this monitoring programme, obstetric emergencies are defined as pregnancy-related conditions that can present an immediate threat to the well-being of the mother and baby in pregnancy or around birth. HIQA's focus on such emergencies intends to highlight the arrangements all maternity units have in place to manage the highest risks to pregnant and postnatal women and newborns when receiving care.

Pregnancy, labour and birth are natural physiological states, and the majority of healthy women have a low risk of developing complications. For a minority of women, even those considered to be at low-risk of developing complications, circumstances can change dramatically prior to and during labour and birth, and this can place both the woman's and the baby's lives at risk. Women may also unexpectedly develop complications following birth, for example, haemorrhage. Clinical staff caring for women using maternity services need to be able to quickly identify potential problems and respond effectively to evolving clinical situations.

The monitoring programme assessed if specified[3] National Standards in relation to leadership, governance and management had been implemented. In addition, maternity hospitals and maternity units were assessed to determine if they were resourced to detect and respond to obstetric emergencies which occurred, and explored if clinical staff were supported with specialised regular training to care for women and their newborn babies.

This monitoring programme examined if specified[3] National Standards in relation to effective care and support and safe care and support had been implemented. The programme assessed whether or not maternity hospitals and maternity units could effectively identify women at higher risk of complications in the first instance. It also examined how each maternity hospital or maternity unit provided or arranged for the care of women and newborns in the most appropriate clinical setting. The programme looked at how risks in relation to maternity services were managed and how the service was monitored and evaluated.

In monitoring against the *National Standards for Safer Better Maternity Services,* with a focus on obstetric emergencies, HIQA has identified three specific lines of enquiry (LOE). These lines of enquiry represent what is expected of a service providing a consistently safe, high-quality maternity service, particularly in its response to obstetric emergencies. These lines of enquiry have been used by HIQA to identify key relevant National Standards for assessment during this monitoring programme.

All three lines of enquiry reflect a number of themes of the National Standards. For the purposes of writing this report, compliance with the National Standards is reported in line with the themes of the National Standards. The lines of enquiry for this monitoring programme are listed in Figure 1.

Figure 1 – Monitoring programme lines of enquiry

LOE 1:

The maternity unit or maternity hospital has formalised leadership, governance and management arrangements for the delivery of safe and effective maternity care within a maternity network.*

LOE 2:

The maternity service has arrangements in place to identify women at higher risk of complications and to ensure that their care is provided in the most appropriate setting.

The maternity service has arrangements in place to detect and respond to obstetric emergencies and to provide or facilitate ongoing care to ill women and or their newborn babies in the most appropriate setting.

LOE 3:

The maternity service at the hospital is sufficiently resourced with a multidisciplinary workforce that is trained and available to detect and respond to obstetric emergencies at all times.

A further aspect of HIQA's monitoring programme was to examine progress made across the maternity services to develop maternity networks. The National Standards support the development of maternity networks in Ireland.

* Maternity Networks are the systems whereby maternity units and maternity hospital are interconnected within hospital groups to enable sharing of expertise and services under a single governance framework.

Further information can be found in the *Guide to HIQA's monitoring programme against the National Standards for Safer Better Maternity Services, with a focus on obstetric emergencies* [3] which is available on HIQA's website: www.hiqa.ie

1.1 Information about this inspection

St. Luke's General Hospital, Kilkenny is a statutory acute hospital which is owned and managed by the Health Service Executive (HSE). The hospital is part of the Ireland East Hospital Group.[†] The Maternity Unit is co-located with the general hospital. The hospital provides maternity services to meet the needs of women with low risk and high risk pregnancies. There were 1,578 births at the hospital in 2018.

HIQA conducted a two-day unannounced inspection of the maternity services at the hospital on 12 and 13 November 2018. To prepare for this inspection, inspectors reviewed a completed self-assessment tool[‡] and preliminary documentation submitted by St. Luke's General Hospital, Kilkenny to HIQA in June 2018. Inspectors also reviewed information about this hospital including previous HIQA inspection findings; information received by HIQA and published national reports.

The findings of the inspection in November 2018 identified a high level of non-compliance with a number of the National Standards assessed and areas of associated risk. Following the inspection, there was a process of engagement with the hospital and the Ireland East Hospital Group in relation to the identified risks. During this communication hospital management and Ireland East Hospital Group committed to addressing the risks identified.

Due to the level of identified non-compliance with National Standards and the nature and level of risk involved, HIQA determined that a second inspection was necessary to assess the level of progress made by hospital management in addressing the risks identified. An announced inspection was carried out at St. Luke's General Hospital on 3 September 2019. This follow-up inspection focused on assessing compliance with the National Standards that the hospital was found to be substantially, partially or non-compliant with during the first inspection. Therefore, the National Standards that were found to be compliant in November 2018, were not reviewed during the follow-up inspection.

The follow-up inspection identified both evidence of improved compliance, and also a requirement for some further work to be progressed.

[†] Ireland East Hospital Group (IEHG) comprises 11 hospitals operating across the counties Dublin, Westmeath, Meath, Wexford and Kilkenny. This group is led by a Group Executive Officer with delegated authority to manage statutory hospitals within the group under the Health Act 2004. Maternity services are provided in four hospitals in the Group namely, The National Maternity Hospital, Holles Street, Wexford General Hospital and the Regional Hospital Mullingar.

[‡] All maternity hospitals and maternity units were asked to complete a self-assessment tool designed by HIQA for this monitoring programme

Information about these inspections is included in Table 1.

Table 1: Inspection details

Dates	Times of inspection	Inspectors
12 November 2018	11:10hrs to 18:30hrs	Siobhan Bourke Aileen O' Brien Joan Heffernan Emma Cooke Sean Egan
13 November 2018	08:50hrs to 18:00hrs	
03 September 2019	09:30hrs to 16:00hrs	Siobhan Bourke Sean Egan Carol Grogan

During the inspections, the inspection team spoke with the following staff at the hospital:

- representatives of the hospital's Executive Management Team and
- the hospital's lead consultants in the clinical specialties of obstetrics, anaesthesiology and paediatrics.

In addition, the inspection team visited a number of clinical areas during the inspections which included:

- Assessment areas where pregnant and post-natal women who presented to the hospital with pregnancy-related concerns were reviewed. These included the obstetric assessment unit and two labour ward assessment rooms.
- The Labour Ward where women were cared for during labour and childbirth.
- An operating theatre in the Operating Theatre Department for women undergoing surgery, for example in the case of caesarean section.
- The Special Care Baby Unit where babies requiring additional monitoring and support were cared for.
- A mixed antenatal and post-natal ward where women were cared for before and after childbirth.
- The Coronary Care Unit and Intensive Care Unit in the hospital where women requiring additional monitoring and support were cared for.

Information was gathered through speaking with midwifery and nursing managers and staff midwives in these clinical areas and with doctors assigned to the maternity service. Inspectors also spoke with staff working in the hospital's operating theatre department. In addition, inspectors looked at the clinical working environment and reviewed hospital documentation and data pertaining to the maternity service during the inspections.

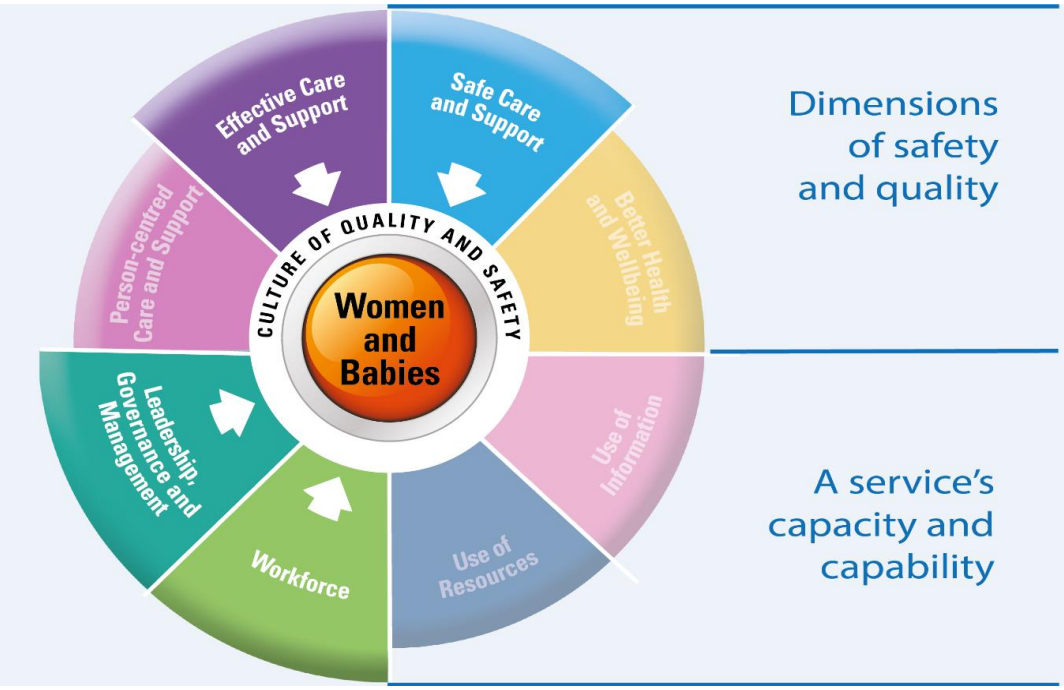
HIQA would like to acknowledge the cooperation of the hospital management team and all staff who facilitated and contributed to these inspections.

1.2 How inspection findings are presented

These inspections were focused specifically on maternity services and the systems in place to detect and respond to obstetric emergencies, as outlined in the published Guide[3] to this monitoring programme. Therefore as part of this inspection programme, HIQA monitored compliance with some, but not all of the National Standards. Report findings are based on information provided to inspectors during an inspection at a particular point in time.

The National Standards themes which were focused on in this monitoring programme are highlighted in Figure 1. Inspection findings are grouped under the National Standards dimensions of Capacity and Capability and Safety and Quality.

Figure 2 -The four National Standard themes which were focused on in this monitoring programme



Based on inspection findings, HIQA used four categories to describe the maternity service's level of compliance with the National Standards monitored.

These categories included the following:

- **Compliant:** A judgment of compliant means that on the basis of this inspection, the maternity service is in compliance with the relevant National Standard.
- **Substantially compliant:** A judgment of substantially compliant means that the maternity service met most of the requirements of the relevant National Standard, but some action is required to be fully compliant.
- **Partially compliant:** A judgment of partially compliant means that the maternity service met some of the requirements of the relevant National Standard while other requirements were not met. These deficiencies, while not currently presenting significant risks, may present moderate risks which could lead to significant risks for patients over time if not addressed.
- **Non-compliant:** A judgment of non-compliant means that this inspection of the maternity service has identified one or more findings which indicate that the relevant National Standard has not been met, and that this deficiency is such that it represents a significant risk to patients.

Inspection findings will be presented in this report in Sections 2 and 3. Section 2 outlines the inspection findings in relation to capacity and capability and Section 3 outlines the inspection findings in relation to the dimensions of safety and quality. Table 2 shows the main report sections and corresponding National Standards, themes and monitoring programme lines of enquiry.

Table 2: Report sections and corresponding National Standard themes and inspection lines of enquiry

Report section	Themes	Standards	Line of enquiry
Section 2: Capacity and Capability:	Leadership, Governance and Management	5.1, 5.2, 5.3, 5.4, 5.5, 5.8 and 5.11	LOE 1
	Workforce	6.1, 6.3, 6.4	LOE 3
Section 3: Dimensions of Safety and Quality:	Effective Care and Support	2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 2.8.	LOE 2
	Safe Care and Support	3.2, 3.3, 3.4, 3.5	

2.0 Capacity and Capability

Inspection findings in relation to capacity and capability will be presented under the themes of the National Standards for Safer Better Maternity Services of Leadership, Governance and Management and Workforce.

This section describes arrangements for the leadership, governance and management of the maternity service at this hospital, and HIQA's evaluation of how effective these were in ensuring that a high quality safe service was being provided. It will also describe progress made in the establishment of a maternity network from the perspective of this hospital. This section also describes the way the hospital was resourced with a multidisciplinary workforce that was trained and available to deal with obstetric emergencies twenty-four hours a day.

As set out in the methodology for these inspections, inspectors looked at 10 National Standards in relation to leadership, governance and management and workforce. In November 2018, St. Luke's General Hospital was found to be compliant with three National Standards, substantially compliant with two National Standards, partially compliant with one National Standards and non-compliant with four National Standards. During this unannounced inspection by HIQA, a number of risks to patient safety and quality were identified at St. Luke's General Hospital, Kilkenny in relation to the maternity service and critical care services necessary for the management of obstetric emergencies. Details of these risks were communicated in writing to the Chief Executive Officer (CEO) of the Ireland East Hospital Group following this inspection.

Further communication and correspondence followed between HIQA and the CEO of the Ireland East Hospital Group from January 2019 to April 2019. The purpose of this communication was to provide an update to HIQA on the progress made to implement the planned actions to address the risks identified. The response from the Ireland East Hospital Group in relation to actions planned to address the risks identified is included in this report.

The follow up inspection, on 3 September 2019, found that management and staff in the hospital had made significant improvements to address these risks. For example, St. Luke's General Hospital was now compliant with four National Standards, substantially compliant with three National Standards and partially compliant with three National Standards.

2.1 Leadership, Governance and Management

Leadership, governance and management refers to the arrangements put in place by a service for clear accountability, decision-making and risk management as well as meeting its strategic and statutory obligation.

A well-governed maternity service is clear about what it does, how it does it, and is accountable to the women who use the service and the people who fund and support it. Good governance arrangements acknowledge the interdependencies between organisational arrangements and clinical practice and integrate these to deliver safe, high-quality care.

Inspection findings in relation to leadership, governance and management are described next.

Inspection findings

2.1.1 Maternity service leadership, governance and management

Maternity network

Previous HIQA reports[4] [5] identified that development and implementation of maternity clinical networks was an essential step in ensuring the quality and safety of maternity services in smaller maternity units so that each hospital site can deliver care appropriate to the resources, facilities and services available on that site.

At the time of both inspections, inspectors found that the maternity service at St. Luke's General Hospital was not part of a formalised maternity network under a single governance framework as recommended in the National Maternity Strategy.[§]

In 2018, Ireland East Hospital Group established a number of forums to progress with the development of a Women and Children's Clinical Academic Directorate. The plan for this Clinical Academic Directorate was the development of a programme which would be clinically led and provide governance and oversight of maternity and paediatric services across the hospital group.[6] In March 2019, a consultant obstetrician was appointed Executive Director of the Women and Children's Health Clinical Academic Directorate for the Ireland East Hospital Group.

In August 2019, Ireland East Hospital Group developed a draft strategic plan for the Women's Health Clinical Academic Directorate. Inspectors were informed that this strategic plan was expected to be finalised in October 2019. The draft plan provided to inspectors detailed six key strategic goals that included development of key

[§] The National Maternity Strategy 2016 states that smaller maternity services require formal links to larger maternity units to enable sharing of expertise and clinical services to support safe quality maternity services across the country.

services and patient pathways, enhanced clinical governance and standardised care within the network.

In October 2018, Ireland East Hospital Group established a Maternity Oversight Group to develop the structures and processes to oversee and monitor quality and safety of the maternity services provided at St. Luke's General Hospital, and the other maternity units and maternity hospital within the Ireland East Hospital Group. This Group was chaired by the Chief Executive of Ireland East Hospital Group and membership included the Director of Midwifery and the Clinical Lead Obstetrician from St. Luke's General Hospital. This group met regularly and worked to improve communication and referral pathways between the maternity services within Ireland East Hospital Group. Clinical activity recorded in maternity patient safety statements** for each of the maternity units were reviewed and discussed at these meetings. The Ireland East Hospital Group Director of Nursing and Midwifery implemented a monthly meeting where directors of midwifery from the four maternity services in the hospital group met and reviewed issues such as workforce planning and new service initiatives.

During both inspections, inspectors found that there were no joint appointments in obstetrics or neonatology between St. Luke's General Hospital's Maternity Unit and any other hospital in the Ireland East Hospital Group. There were no shared clinical meetings such as perinatal mortality and morbidity meetings between St. Luke's General Hospital's Maternity Unit the other maternity units and maternity hospital within the Ireland East Hospital Group. There was no capacity for the rotation of medical or midwifery staff between the sites. Moreover, there were no written formalised care pathways to ensure that women with complex high-risk pregnancies were cared for in the most appropriate setting.

It was evident to inspectors that preliminary work had commenced on the development of the Ireland East Hospital Group's Women and Children's Health Academic Directorate. Following these inspections, the Ireland East Hospital Group now needs to actively progress the implementation of a maternity network in order to enable a single governance framework, rotation of staff between sites to meet training and service requirements and mandatory acceptance policies for the transfer of women and neonates from linked hospitals.

** The Maternity Patient Safety Statement contains information on 17 metrics covering a range of clinical activities, major obstetric events, modes of delivery and clinical incidents.

St. Luke's General Hospital leadership, governance and management of maternity services

The General Manager had overall managerial responsibility and accountability for the maternity service at the hospital. The General Manager at the hospital was supported in the operational management of the maternity and general hospital services by the Executive Management Team. Membership of the Executive Management Team included the Clinical Director, the Director of Nursing, the Director of Midwifery, the Clinical Risk Manager, Finance Manager and other business managers.

The terms of reference of the Executive Management Team outlined that the purpose of the team was to manage the hospital including all aspects of patient safety within agreed financial limits set by the HSE and the Ireland East Hospital Group.

The Director of Midwifery, who was responsible for the organisation and management of the midwifery service, was a member of the hospital's Executive Management Team since July 2017. This is a welcome development in line with the National Standards.

Executive Management Team

The General Manager was the Chair of the Executive Management Team meetings that were held monthly at the hospital. Clinical leads from the specialities of obstetrics, anaesthesiology, paediatrics, emergency medicine, general medicine and surgery were also included in the membership of the Executive Management Team. Minutes reviewed indicated that information collated for the maternity patient safety statements was reviewed alongside other performance data at these meetings.

The General Manager reported to the Chief Executive Officer of the Ireland East Hospital Group and attended monthly performance meetings with the hospital group management team. Documentation provided to inspectors indicated that maternal and neonatal outcomes as outlined in the Maternity Patient Safety Statements, data on patient safety incidents and collated midwifery metrics were presented by the General Manager at these performance meetings.

The hospital had developed a four-year strategic plan from 2018-2021 for the maternity service. Inspectors found that this plan did not include short, medium or long-term objectives with clear targets and needs to be reviewed in line with National Standards and the draft strategic plan for the Ireland East Hospital Group Women and Children's Clinical Academic Directorate.

Quality and Safety Executive Committee

The hospital had a Quality and Safety Executive Committee to oversee the quality and safety of care provided at the hospital including maternity services. This Committee reported to the Executive Management Team at the hospital. The Quality and Safety Executive Committee was chaired by a consultant geriatrician and the hospital's Clinical Risk Manager and the General Manager attended all meetings. The Director of Midwifery represented the Maternity Unit at these meetings.

The Quality and Safety Executive Committee met every six weeks where the agenda items included updates on clinical incidents, medication safety, infection prevention and control, hospital risk register, clinical audit, mandatory training and education and departmental reports.

Maternity Services Governance Committee

At the time of the first inspection in November 2018, the Maternity Services Governance Committee met every two months and these meetings were attended by the Hospital's General Manager and the Clinical Director as well as obstetricians, paediatricians, anaesthesiologists and midwifery managers. At these meetings, Irish Maternity Indicator System data, clinical audits, updates on patient safety incidents and changes to clinical practice were presented and discussed. The Maternity Services Governance Committee reported in to the Quality and Safety Executive Committee on a quarterly basis. By the time of the September 2019 inspection:

- the frequency of these meetings had increased to monthly
- members of the Ireland East Hospital Group's Executive Management Team attended the monthly maternity governance meetings to provide group level oversight at the hospital.

During the September 2019 inspection, inspectors found improvements to the structure of maternity governance meetings, progression with actions arising at meetings and improved attendance by key managerial and clinical staff.

Clinical Governance for the maternity service was led by the Clinical Director for the hospital who reported to the General Manager. Clinical leads had been appointed in the specialties of obstetrics, anaesthesiology and paediatrics. These clinicians were appointed on a rotational basis of one to two years and were responsible for supporting the hospital Executive Management Team with communicating and liaising with consultants in relation to developments or initiatives within their respective departments.

Leadership and management of the obstetric service

In September 2019, inspectors identified that a number of improvements had been progressed in relation to the management of the obstetric service at the hospital.

In November 2018, HIQA identified significant risks related to the overall leadership and management of obstetric services at the hospital, specifically the lack of timely management of reported concerns related to team working amongst the obstetric team. During the onsite inspection in November 2018, HIQA found that a reported prolonged history of poor communication and lack of cohesive teamwork among consultant obstetricians had been identified as an ongoing potential risk to patient safety in the maternity service. Inspectors found that there was a potential risk to the management of obstetric emergencies due to a lack of clarity among clinical staff as to which consultant obstetrician was on-call at the hospital. There was also a potential risk of ineffective care planning and management due to a reported lack of supervision and training of non-consultant hospital doctors in obstetrics. These risks were escalated to the Ireland East Hospital Group by HIQA.

During the follow-up inspection in September 2019, inspectors found that the following actions had been taken to improve the leadership and management of the obstetric service in the maternity unit.

- Ireland East Hospital Group established an Obstetrics and Gynaecology Assurance Group in February 2019. This group included members of the Executive of the Ireland East Hospital Group and members of St. Luke's General Hospital Executive Management Team. This team met regularly to oversee implementation of strategies to improve the leadership governance and management of the maternity service.
- The Executive Director of the Ireland East Hospital Group Women and Children's Health Academic Directorate established the Maternity Clinical Care Development Committee at the hospital in May 2019. The purpose of this committee was to develop interventions to enhance clinical care and service in the Maternity Unit. The Committee reported to the hospital's Executive Management Team and to the Ireland East Hospital Group's Obstetrics and Gynaecology Assurance Group on a monthly basis.
- The clinical lead obstetrician at the hospital held a weekly meeting between consultant obstetricians. Inspectors were informed that these meetings improved communication between consultant obstetricians.
- Consultant obstetricians on call for the day conducted daily ward rounds and attended the safety huddle in the labour ward.
- A written on-call rota for consultant obstetricians was developed and clearly displayed in the Maternity Unit. There was a clear process in place at the hospital where changes to the rota were escalated to hospital management.

This was reported to be working well and was monitored by hospital management.

- Monitoring and management of work rosters and schedules for consultant obstetricians and non-consultant hospital doctors in obstetrics and gynaecology was in progress at the hospital.
- A fifth permanent consultant obstetrician was appointed in August 2019. This consultant was assigned as the lead for the labour ward.

Overall, the follow-up inspection identified significantly improved oversight and management of the maternity service at the hospital by the Ireland East Hospital Group Executive Management Team.

Clinical Governance of the Critical Care Services

In November 2018, HIQA also found that there was a lack of consultant anaesthesiologist or intensivist presence in the Intensive Care Unit during core working hours. This is not in line with the National Minimum Standards for Critical Care that recommend 24-hour availability of a dedicated consultant in critical care medicine who has exclusive sessional commitment to Intensive Care Unit and no conflicting commitment for that period.[7]

It was reported to inspectors that there was no consultant anaesthesiologist assigned to the care of patients admitted to the Intensive Care Unit each day. Patients admitted to the Intensive Care Unit remained under the care of their admitting consultant. Joint rounds where patients were reviewed by their primary consultant and a consultant anaesthesiologist did not occur on a daily basis. Inspectors were informed that there was no input from members of the anaesthetic team in the management of women admitted to the High Dependency Unit (known as the Coronary Care Unit) unless specifically requested to provide assistance with technical procedures such as insertion of central lines. This was a potential risk to patient safety as there was a missed opportunity for involvement from anaesthesiologists in the management of the critically ill pregnant or postnatal woman. This was not in line with HSE guidelines in relation to the management of the critically ill pregnant woman nor National Guidelines for sepsis management.[8, 9]

Weak clinical governance arrangements in the Intensive Care Unit at the hospital was identified as a potential risk to patient safety due to a shortage of consultant anaesthesiologist or intensivist presence in the Intensive Care Unit and resultant lack of clinical oversight of patients who were admitted with critical care needs. HIQA escalated this risk to the Chief Executive Officer of Ireland East Hospital Group in November 2018.

In September 2019, inspectors found that members of the Ireland East Hospital Group Executive Management Team (The Group Chief Operating Officer, Group

Director of Nursing and Group Director of Quality and Patient Safety) attended the Critical Care Governance meetings at the hospital to provide group level oversight at the hospital.

Inspectors found that the appointment of a temporary consultant anaesthesiologist /intensivist since the November 2018 inspection, improved the clinical oversight of patients admitted to the Intensive Care Unit three days a week. Progression with the advertisement of this permanent position needs to be advanced. Notwithstanding this, consultant anaesthesiologist and anaesthetic registrar presence on the remaining days was inconsistent resulting in lack of timely reviews of patients admitted to the critical care unit. This was brought to the attention of the Ireland East and Hospital Management Team during the September 2019 inspection.

In response, hospital management provided assurances to HIQA that an experienced registrar in anaesthesiology would be assigned to the Intensive Care Unit on the week days that a consultant anaesthesiologist or intensivist was not present following the inspection. Inspectors were informed that in the longer term a review of anaesthetic workforce schedules was in progress across the Ireland East Hospital Group. This longer term process was intended to inform changes related to anaesthetic cover – inclusive of the Intensive Care Unit – aimed at ensuring more efficient use of resources to enable routine senior medical cover in this unit.

Statement of Purpose

The hospital's statement of purpose outlined maternity service aims, services available at the hospital, and staffing resources. This was publicly available on the hospital's website in line with the National Standards.

Safety alerts in relation to medical devices and medicines were communicated to staff at the hospital in line with National Standards.

Overall findings related to Leadership Governance and Management of maternity services

In line with National Standards, governance arrangements should always ensure that services are only provided where they can be done so safely, effectively and sustainably. Effective management also includes deploying the necessary resources through informed decisions and actions to help with the delivery of safe, high-quality care.

During the follow-up inspection, HIQA was informed that the Ireland East Hospital Group had implemented a process to ensure that any issues or concerns were escalated each day at St. Luke's General Hospital from the floor to hospital management level and to hospital group executive level.

Furthermore, Ireland East Hospital Group had commissioned an external management intervention team to conduct an assessment of the safety and quality of the maternity service at the hospital in March 2019. Inspectors were informed that following this assessment, the Ireland East Hospital Group implemented a number of improvements to address the recommendations of this assessment including the following:

- The Chief Executive of Ireland East Hospital Group organised a risk summit[††] with the HSE to escalate concerns regarding the quality and safety of the maternity service at the hospital.

- Members of the Ireland East Hospital Group Executive Management Team were onsite at the hospital each week to oversee the safety and quality of the maternity service and critical care service.

In correspondence, following the November 2018 inspection, HIQA was informed that the Ireland East Hospital Group was seeking suitable candidates to appoint as an external onsite management team to manage the maternity service. However, this had yet to be achieved by the time of the September 2019 inspection. In the absence of the appointment of an onsite management team, Ireland East Hospital Group provided assurances to HIQA that they would continue to support and oversee the maternity and critical care services at the hospital.

Overall, inspectors found that the Ireland East Hospital Group had implemented strategies to strengthen the governance arrangements in place at the hospital for assuring the delivery of safe, high-quality maternity care. However these need to continue until the group is assured that the risks to patient safety identified by HIQA in November 2018 are fully and sustainably addressed.

Table 3 on the following pages lists the National Standards relating to leadership, governance and management focused on during both inspections and outlines HIQA's findings in relation to the hospital's compliance with the National Standards monitored during the inspections.

†† Risk Summits provide a mechanism for key stakeholders to come together to share and review information when a serious concern about the quality of care has been raised.

Table 3: HIQA's judgments against the National Standards for Safer Better Maternity Services for leadership, governance and management that were monitored during this inspection

Standard 5.1 Maternity service providers have clear accountability arrangements to achieve the delivery of safe, high-quality maternity care.	
Judgment November 2018	**Judgment September 2019**
Compliant	Not reviewed
Standard 5.2 Maternity service providers have formalized governance arrangements for assuring the delivery of safe, high-quality maternity care	
Judgment November 2018	**Judgment September 2019**
Non-Compliant	Partially compliant
Key findings: November 2018 Ineffective governance and management arrangements to effectively manage risks to patient safety for women using maternity services. Maternity network arrangements not formalised at the time of inspection.	**Key Findings: September 2019** Ireland East Hospital Group had implemented a number of strategies to strengthen the governance arrangements since the November 2018 inspection. Oversight and monitoring of critical care service still required.
Going forward Ireland East Hospital Group and the hospital management team should continue to oversee and monitor the critical care and maternity services at the hospital until the group is assured that the identified risks to patient safety are fully and sustainably addressed.	
Standard 5.3 Maternity service providers maintain a publicly available statement of purpose that accurately describes the services provided to women and their babies; including how and where they are provided.	
Judgment November 2018	**Judgment September 2019**
Compliant	Not reviewed

Table 3: HIQA's judgments against the National Standards for Safer Better Maternity Services for leadership, governance and management that were monitored during this inspection

Standard 5.4 Maternity service providers set clear objectives and have a clear plan for delivering safe, high-quality maternity services.	
Judgment November 2018	**Judgment September 2019**
Substantially compliant	Substantially compliant
Key findings: The hospital's strategic plan for maternity and women's health did not include plans that set a clear direction for delivering safe high quality care in the short medium and long term.	**Key findings:** The hospital's strategic plan remained unchanged. Ireland East Hospital Group developed a draft strategic plan for the Women's Health Clinical Academic Directorate.
Standard 5.5 Maternity service providers have effective management arrangements to support and promote the delivery of safe, high-quality maternity services.	
Judgment: November 2018	**Judgment: September 2019**
Non-compliant	Partially compliant
Key findings November 2018 Ineffective clinical governance of the Maternity Unit and the Intensive Care Unit with potential risk of inadequate management of critically ill pregnant or postnatal woman.	**Key findings September 2019** Significant improvements in the effective management of the obstetric service at the hospital. Lack of consistent availability of senior decision makers in the Intensive Care Unit resulting in lack of timely reviews of patients admitted to the critical care unit.
Going forward hospital management need to ensure that a senior decision maker in anaesthesiology is assigned to the care of patients in the Intensive Care Unit.	

Table 3: HIQA's judgments against the National Standards for Safer Better Maternity Services for leadership, governance and management that were monitored during this inspection

Standard 5.8 Maternity service providers systematically monitor, identify and act on opportunities to improve the safety and quality of their maternity services.	
Judgment November 2018	**Judgment September 2019**
Substantially compliant	Compliant
Key findings November 2018 Services monitored but not all opportunities to improve the safety and quality of maternity services are taken.	**Key findings September 2019** Processes for monitoring and acting on information to improve the quality and safety of maternity services were enhanced.
Standard 5.11 Maternity service providers act on standards and alerts, and take into account recommendations and guidance issued by relevant regulatory bodies.	
Judgment November 2018	**Judgment September 2019**
Compliant	Not reviewed

2.2 Workforce

Effective maternity services need to ensure that there are sufficient staff available at the right time, with the right skills to deliver safe, high-quality care. Training specific to maternity care is required to enable staff to acquire the skills and knowledge to detect and respond to obstetric emergencies. This inspection looked at the number of nursing and midwifery staff who provided care to women and infants using the maternity service. This inspection also looked at the number and grade of medical staff who worked in the specialities of obstetrics, neonatology and obstetric anaesthesiology at the hospital. Inspectors also reviewed the uptake and provision of training and education of staff relevant to obstetric emergencies.

Inspection findings in relation to workforce are described next.

Inspection findings

2.2.1 Midwifery and nursing staff

The hospital had a sufficient number of midwives employed on a permanent contract to meet service needs on a 24-hour basis in line with the HSE's Midwifery Workforce Planning Project.[10] At the time of the first and follow-up inspections, 7.5 and 8.5 WTE midwives respectively were on temporary leave. The hospital employed agency midwifery staff and offered overtime to midwifery staff working in the hospital to fill these temporary vacancies.

An experienced midwife shift leader was in place for each shift in the Labour Ward. These shift leaders were not always supernumerary at times of increased workload in the Labour Ward. Inspectors were informed that all women in established labour had one to one midwifery support.

An advanced midwife practitioner appointed in 2018 led a team of six community based midwives to provide care to low risk women before, during and after birth. One of these midwives was rostered to the Maternity Unit 24 hours a day to provide continuity of care to women availing of this new service. This is a welcome development at the hospital in line with the National Maternity Strategy and National Standards.[11]

In November 2018, the Clinical Nurse Manager in the Special Care Baby Unit was part of the nursing staff complement and did not have allocated time for administrative duties required for the role. Recruitment of a staff nurse to improve the staffing levels in the Special Care Baby Unit remained ongoing in September 2019. Staffing levels in the Special Care Baby Unit should be appropriate to manage surges in activity and workload. The hospital should ensure that nurse staffing levels are adequate on occasions when Special Care Baby Unit nursing staff are required to transfer to or bring back newborns from other neonatal units or hospitals.

The hospital employed a clinical skills facilitator to support nurses and midwives working in the Maternity Unit to maintain essential clinical skills and competencies appropriate to their scope of practice.

Operating theatre nursing staff

There were sufficient numbers of nursing staff available in the operating theatres during core working hours. The hospital's operating theatre was managed by a senior clinical nurse manager and a middle grade clinical nurse manager. Sixty four per cent of operating theatre nursing staff had specialist qualifications in perioperative nursing. Outside of core working hours, three nursing staff were on-call for any emergency surgery that was required. The hospital had arrangements in place for extra nursing staff to be contacted while off duty to come in from home should two coinciding emergencies occur.

Information provided to inspectors indicated that extra staff were required to attend for coinciding emergency surgery on 17 occasions between January 2018 and October 2018. It was reported that there was never a delay in staff attending the hospital and this arrangement was based on the good will of nursing staff. However, in light of the frequency of the requirement for nursing staff to attend the hospital out of hours, the hospital should audit how quickly the second team can be present and review and formalise these arrangements to ensure a sustainable service.

Specialist support staff

In November 2018, the hospital did not have a sufficient number of trained fetal ultrasonographers employed to provide a fetal ultrasound service during core working hours. One midwife with specialist training in fetal ultrasonography was employed at the hospital. In September 2019, an additional midwife with specialist training in fetal ultrasonography was expected to commence employment in the maternity unit by the end of the month. A third midwife was undertaking a specialist training and education programme with an expected completion date of January 2020. Hospital managers anticipated that the appointment of these additional positions would ensure that all women attending the service would be offered fetal ultrasound scans at intervals in line with National Standards.

2.2.2 Medical staff

Medical staff availability

The hospital was staffed with medical staff at registrar and senior house officer grade in the specialties of obstetrics, anaesthesiology and paediatrics who were available onsite to provide care to women and newborns on a 24-hour basis. Rapid response teams were available on site 24 hours a day, seven days a week to attend to obstetric emergencies, neonatal emergencies and cardiac arrests.

Consultants in the medical specialties of obstetrics, anaesthesiology and paediatrics were registered as specialists with the Medical Council in Ireland. The use of locum and agency medical staff was kept to a minimum at the Maternity Unit.

Obstetric medical staff

In September 2019, significant improvements had been achieved in relation to obstetric medical staffing levels at the hospital since the previous inspection. A fifth consultant obstetrician commenced employment on a permanent contract at the Maternity Unit in August 2019. The Labour Ward is a critical location for pregnant women and best practice is that women being cared for on the Labour Ward have direct supervision and care by a consultant obstetrician.[12] Inspectors were informed that this position was assigned as the consultant lead for the Labour Ward. In September 2019, inspectors were informed that consultant obstetrician rotas were arranged so that there were two consultant obstetricians onsite at the hospital each week day.

The appointment of a fifth consultant obstetrician reduced the on-call commitments for consultant obstetricians working at the hospital from one night on call in four nights to one night on call in five nights which is a welcome development. At the time of the September 2019 inspection, one consultant obstetrician was on temporary leave since August 2019 and was replaced by a locum consultant obstetrician who had previously worked in the Maternity Unit.

On-call consultant obstetricians conducted ward rounds on Saturdays, Sundays and public holidays. A rota of two non-consultant hospital doctors in obstetrics, one at registrar grade and one at senior house officer grade was in place in the Labour Ward 24 hours a day. A senior registrar was assigned alongside a registrar and senior house office to the Labour Ward during core working hours since the November 2018 inspection.

Anaesthesiology medical staff

In November 2018, there were an insufficient number of consultant anaesthesiologists at the hospital to provide a dedicated obstetric anaesthetic service as recommended in the National Standards. The hospital had six permanent WTE consultant anaesthesiologists employed at the hospital. These consultant anaesthesiologists were responsible for providing anaesthetic services for the Emergency Department, Intensive Care Unit, general surgery and the Maternity Unit. They also provided anaesthetic services at Kilcreene Orthopaedic Hospital where elective orthopaedic surgery was provided Monday to Friday. During core working hours, two consultant anaesthesiologists were available on site at St. Luke's General Hospital where one consultant anaesthesiologist provided anaesthetic care for the elective operating theatre lists. The other consultant anaesthesiologist was available

to provide anaesthetic care for patients in the general hospital who required emergency general surgery and women in the maternity service who required epidural analgesia for pain relief or anaesthesia for surgery such as emergency caesarean sections.

In September 2019, as outlined previously, inspectors found that a seventh consultant anaesthesiologist with an interest in intensive care medicine was appointed to the hospital on a temporary contract. The seventh permanent consultant anaesthesiologist post with an interest in intensive care medicine was anticipated to be advertised in quarter four 2019. Approval for an eighth consultant anaesthesiologist with an interest in intensive care medicine was in progress with the Ireland East Hospital Group at the time of inspection. Hospital management needs to ensure that these appointments are accompanied with greater clarity around the clinical governance of the critical care service at all times.

During both inspections, the hospital had an on-call rota outside of core working hours for consultant anaesthesiologists whereby one consultant anaesthesiologist was on-call off site usually one in every six nights.

Four registrars in anaesthesiology were on site during core working hours. Two of these registrars were assigned to the operating theatres; one was assigned to the Intensive Care Unit while the remaining registrar was available to attend to emergencies within the hospital and to provide anaesthetic service for the Maternity Unit. Guidelines recommend that a duty anaesthesiologist should be immediately available for the Labour Ward 24 hours a day and must have no other responsibilities outside obstetrics.[13]

One registrar in anaesthesiology was on-call onsite outside of core working hours for the general hospital services and the maternity service. This meant that if two concurrent emergencies that required anaesthetic input occurred, for example an emergency caesarean section and emergency general surgical procedure, the consultant anaesthesiologist on-call had to attend the operating theatre from home. Inspectors were informed that a second registrar was available on-call from home should patients require transfer to a tertiary hospital for specialist critical care.

In April 2016, the HSE's Chief Clinical Officer issued a national recommendation that two consultant anaesthesiologists and two non-consultant hospital doctors in anaesthesiology should be available to provide on-call cover in hospitals with co-located maternity units.[14] The anaesthetic service at the hospital needed to be additionally resourced to provide a dedicated obstetric anaesthesiology service and on-call rota.
This was raised as a potential risk to patient safety following the November 2018 inspection to the CEO of the Ireland East Hospital Group.

In response, HIQA was informed that the hospital planned to recruit two extra registrars in anaesthesiology to provide a second registrar on-call onsite outside of core working hours.

In September 2019, Inspectors found that despite recruitment campaigns, the hospital had yet to find suitable candidates to increase the number of registrars in anaesthesiology to provide two registrars on call on site outside of core working hours. Ireland East Hospital Group and hospital management were looking at strategies to increase anaesthetic registrar availability on site. This included negotiating with the South/South West Hospital Group to return the anaesthetic registrar cover provided to Kilcreene Orthopaedic Hospital to St. Luke's General Hospital.

Hospital management needs to address the deficits in relation to the capacity of the hospital's anaesthetic service and increase onsite anaesthetic cover outside core working hours as a priority.

Paediatric medical staff

The hospital had an on-call rota outside of core working hours where a consultant paediatrician was on-call from home usually one in every five nights. In line with the model of care for a level one neonatal unit, the hospital was staffed by consultant general paediatricians who undertook routine newborn care as part of their duties and on-call roster. The hospital had 5.5 WTE consultant paediatrician positions filled at the hospital. One of these positions was filled by a long-term locum consultant. One of the consultant paediatricians who had a special interest and training in neonatology was responsible for oversight of the Special Care Baby Unit. During core working hours and out of hours a paediatric registrar and a paediatric senior house office was available to attend for any neonatal emergencies in the hospital.

2.2.3 Training and education of multidisciplinary staff

Mandatory training requirements

The hospital had defined mandatory training requirements for clinical staff. Clinical staff were expected to undertake training aligned to their clinical responsibilities, for example, in relation to basic life support, neonatal resuscitation, sepsis, Irish Maternity Early Warning Systems, obstetric emergencies and electronic fetal monitoring.

Mandatory training requirements for obstetric medical staff working in the maternity service included practical obstetric multi-professional training and fetal monitoring training every two years. Non-consultant hospital doctors in paediatrics were required to undertake training in neonatal resuscitation either prior to commencing

employment at the hospital or within the first four weeks of employment. Medical staff in anaesthesiology were required to undertake training in advanced critical life support and practical obstetric multi-professional training. Midwifery staff were required to undertake training in basic life support, electronic fetal monitoring, practical obstetric multi-professional training and neonatal resuscitation every two years. The hospital provided practical obstetric multi-professional training three times each year and this was attended by obstetric and anaesthesiology medical staff and midwives. In 2018, nursing staff from the operating theatre department had joined the practical obstetric multi-professional training provided at the hospital which is a positive development to ensure obstetric emergencies are managed safely in the obstetric operating theatres.

Uptake of mandatory training

In September 2019, inspectors found that the uptake of mandatory training for clinical staff working in the Maternity Unit had increased in the months following the November 2018 inspection.

Training records provided to inspectors indicated that the percentage of midwives who completed practical obstetric multi-professional training in the management of obstetric emergencies had increased from 62% to 87%.

Nursing staff with up to date attendance at a neonatal resuscitation training programme had increased from 29% to 79%. This percentage had increased from 29% to 62% for midwifery staff. While 71% of medical staff were up to date with neonatal resuscitation training.

Attendance at basic life support training within the required timeframe had increased from 29% to 60% for midwives and from 29% to 64% for nursing staff. Training records provided to inspectors indicated that 68% of medical staff were up to date with basic life support training.

Training records provided in relation to electronic fetal monitoring indicated that 71% of obstetric medical staff and 80% of midwifery staff had undertaken electronic fetal monitoring training in the previous two years.

The National Standards recommend that the skills gained by staff from fetal monitoring training should be supported by regular cardiotocography[‡‡] review meetings. Weekly cardiotocography meetings commenced in the Maternity Unit in July 2019 that were facilitated by an obstetric registrar. Attendance records indicated that these meetings were well attended by midwives and obstetric medical staff.

‡‡ Cardiotocography is an electronic means of recording the fetal heart beat and the uterine contractions during pregnancy. The machine produces a trace known as a cardiotocograph which illustrates the fetal heart rate and uterine activity.

Uptake of multi-professional training in the management of obstetric emergencies for obstetric medical staff remained low with rates of 37.5% at the time of the follow-up inspection. Inspectors were informed that a planned programme of multi-professional training in the management of obstetric emergencies was cancelled in June 2019 due to high levels of clinical activity in the Maternity Unit. The hospital had planned to provide this programme in October 2019 with anticipated improvement in medical staff attendance.

It is essential that hospital management ensure that clinical staff attend mandatory and essential training, at the required frequency appropriate to their scope of practice, in relation to resuscitation of adults and newborns and management of obstetric emergencies in line with the National Standards.

Orientation and training of new staff

Medical, midwifery and nursing staff were provided with induction training when commencing employment at the hospital. Discipline specific induction booklets and packs were provided to new staff. The Maternity Unit had an orientation and induction programme for newly registered midwives and newly employed midwives.

Other training and education opportunities for staff

- Obstetric emergencies were practiced through live skills and drills (simulation training) in the Labour Ward once a week for midwives and obstetric doctors. Attendance records were maintained and showed that these drills were well attended by midwifery and medical staff.
- The Executive Director for the Women and Children's Clinical Academic Directorate organised a series of workshops and education sessions for clinical staff in St. Luke's General Hospital. These updates and workshops on aspects of clinical practice were provided by consultant obstetricians and consultant anaesthesiologists from the National Maternity Hospital during July and August 2019.
- A multidisciplinary team meeting was held on Friday mornings where audit, guidelines and case presentations were reviewed by midwifery and obstetric medical staff. Non-consultant hospital doctors and consultant obstetricians were expected to attend these meetings and attendance records were maintained.
- The consultant obstetrician appointed in August 2019 planned to provide practical skills teaching for obstetric non-consultant hospital doctors on Friday afternoons.

- A senior registrar as well as the consultant obstetrician on call for the day was allocated to the labour ward rota since the November 2018 inspection to provide increased supervision to registrars and senior house officers.
- Neonatal resuscitation drills were held weekly in the Special Care Baby Unit for clinical staff. Medical edical staff in anaesthesiology undertook drills in relation to obstetric anaesthetic emergencies.
- The hospital had scheduled multidisciplinary education sessions every Thursday for midwifery and obstetric medical staff where education on areas of practices such as sepsis, communication, haemovigilance and anaphylaxis were provided by midwifery, nursing and medical staff.
- The hospital had held a back to basics midwifery programme that provided updates on normal birth practices.
- Communication workshops led by the HSE were held at the hospital and were well attended by both medical and midwifery staff.

The hospital was recognised as a site for undergraduate midwifery training. It was not a recognised site for higher specialist training for doctors in the medical specialties of obstetrics and gynaecology, anaesthesiology and paediatrics.

Table 4 on the next page lists the National Standards relating to workforce focused on during these inspections and outlines HIQA's findings in relation to the hospital's compliance with the National Standards monitored during these inspections.

Table 4: HIQA's judgments against the National Standards for Safer Better Maternity Services for Workforce that were monitored during this inspection

Standard 6.1 Maternity service providers plan, organize and manage their workforce to achieve the service objectives for safe, high-quality maternity care	
Judgment November 2018	**Judgment September 2019**
Non-Compliant	Partially compliant
Key findings: November 2018 This inspection identified staffing deficiencies in relation to consultant obstetricians and consultant anaesthesiologists and anaesthetic cover outside of core hours.	**Key findings: September 2019** Improvements to consultant obstetrician staffing levels and consultant anaesthesiologist levels since previous inspection. However, staffing deficits in relation to consultant anaesthesiologists and anaesthetic cover outside of core hours remained.
Going forward hospital management needs to address deficits in relation to consultant anaesthesiologist staffing levels and anaesthetic cover outside core working hours as a priority.	

Table 4: HIQA's judgments against the National Standards for Safer Better Maternity Services for Workforce that were monitored during this inspection

Standard 6.3 Maternity service providers ensure their workforce has the competencies and training required to deliver safe, high-quality maternity care.	
Judgment November 2018	**Judgment September 2019**
Partially-Compliant	Substantially compliant
Key findings: November 2018 Low uptake of neonatal resuscitation training and basic life support training by nurses and midwives at the hospital. No documentation of medical staff training at the hospital to provide assurance that workforce has competencies and training required to provide safe maternity care.	**Key findings: September 2019** Significant improvements in uptake of essential training in neonatal resuscitation, basic life support and fetal monitoring.
Going forward hospital management should ensure that all clinical staff attend mandatory and essential training, at the required frequency appropriate to their scope of practice, in relation to resuscitation of adults and newborns and management of obstetric emergencies in line with the National Standards.	
Standard 6.4 Maternity service providers support their workforce in delivering safe, high-quality maternity care.	
Judgment November 2018	**Judgment September 2019**
Non-Compliant	Substantially compliant
Key findings November 2018 HIQA found that there was inadequate consultant supervision of non-consultant hospital doctors in obstetrics in the labour ward and the operating theatre.	**Key findings September 2019** Improvements found in education, training and supervision available for non-consultant hospital doctors in obstetrics.

3.0 Safety and Quality

Inspection findings in relation to safety and quality will be presented under the National Standard themes of Effective Care and Support and Safe Care and Support. The following section outlines the arrangements in place at the hospital for the identification and management of pregnant women at greater risk of developing complications. In addition, this section outlines the arrangements in place for detecting and responding to obstetric emergencies and for facilitating ongoing care to ill women and newborns.

During the first inspection, inspectors looked at 11 of the National Standards in relation to Effective Care and Support and Safe Care and Support. In November 2018, St. Luke's General Hospital was compliant with two National Standards, substantially compliant with six National Standards, partially compliant with one National Standards and non-compliant with two National Standards. Inspectors identified significant improvements made at the Maternity Unit by September 2019 such that St. Luke's General Hospital was now compliant with six National Standards, substantially compliant with two National Standards, partially compliant with one National Standard and non-compliant with two National Standards.

Inspection findings leading to these judgments and key findings in relation to the hospital's level of compliance with the National Standards monitored during this inspection are included in Table 5 and Table 6 within this section.

3.1 Effective Care and Support

The fundamental principle of effective care and support is that it consistently delivers the best achievable outcomes for women and their babies using maternity services. This can be achieved by using evidence-based information. It can also be promoted by ongoing evaluation of the outcomes for women and their babies to determine the effectiveness of the design and delivery of maternity care.

Women and their babies should have access to safe, high-quality care in a setting that is most appropriate to their needs. How this care is designed and delivered should meet women's identified needs in a timely manner, while working to meet the needs of all women and babies using maternity services.

In relation to obstetric emergencies, the inspections included aspects of assessment and admission of pregnant women; access to specialist care and services; communication; written policies, procedures and guidelines; infrastructure and facilities; and equipment and supplies.

Inspection findings in relation to effective care and support are described next.

Inspection findings

St. Luke's General Hospital Kilkenny provided maternity services for women with both low risk and high risk pregnancies. In line with the National Standards, each woman and infant had a named consultant, or midwife in the case of women attending for midwifery-led care with clinical responsibility for their care.

3.1.1 Assessment, admission and or referral of pregnant and postnatal women

During the two inspections, the hospital had agreed pathways to identify, assess and ensure that women who were at risk of developing complications during pregnancy or around the time of birth were cared for in an appropriate setting. Assessment services for pregnant and post-natal women included:

- an early pregnancy assessment unit
- an obstetric assessment unit
- fetal assessment clinic
- consultant led antenatal clinics
- midwife led antenatal clinics

The hospital had an Early Pregnancy Assessment Unit for women with suspected complications in early pregnancy. This unit was operated by appointment from 9am to 1.30pm Monday to Friday. The Early Pregnancy Assessment Unit was led by a midwife with specialist training in fetal ultrasonography who reported to one of the consultant obstetricians with clinical responsibility for the service. A fetal assessment clinic was available from 2pm to 4pm Monday to Thursday.

In November 2018, not all pregnant women were offered fetal ultrasound scans at intervals recommended in the National Standards. Inspectors were informed that while all women were offered a formal dating scan, a detailed fetal-assessment ultrasound scan at 20-22 weeks was only offered to women with high risk pregnancies, for example, a complication in a previous pregnancy. This poses a potential risk to the woman and infant's safety as some fetal and placental complications may not be detected. Consequently, additional referrals and support may not be identified or implemented during pregnancy and at birth. [15] [16] [17] During the follow-up inspections,the following progress had been made at the hospital to address this deficit in the service. An additional midwife with specialist training in fetal ultrasonography was expected to be offered a contract in September 2019 to commence employment in the Maternity Unit. Another midwife was undertaking a specialist training and education programme with an expected completion date of January 2020. Hospital managers anticipated that with the appointment of these two

additional positions, all women attending the service would be offered fetal ultrasound scans in line with National Standards.

Women who were referred by their general practitioner could attend low risk midwife led clinics or consultant led antenatal clinics depending on their risk factors or underlying medical conditions.

The Special Care Baby Unit at St. Luke's General Hospital accepted babies over 34 weeks gestation. This meant that women who were anticipated to give birth prematurely before 34 weeks were transferred to another maternity hospital when possible.

Inspectors were informed that women with known underlying medical complications or who developed complications during pregnancy such as placenta accreta[§§] or severe pre-eclampsia[***] were transferred to the National Maternity Hospital as the specialist maternity hospital in the Ireland East Hospital Group. Inspectors were informed that this arrangement was informal and there was no mandatory acceptance policy for these women. While HIQA did not identify any evidence of delay in the transfer of women to the National Maternity Hospital, this pathway needs to be formalised so that all women who require transfer for specialist maternity care from St. Luke's General Hospital are facilitated within the Ireland East Hospital Group when possible.

Information provided to inspectors indicated that 52 pregnant women were transferred out of St. Luke's General Hospital in 2017 and 42 pregnant women were transferred out of the hospital in 2018. This is good practice and indicates that women were being risk categorised to ensure they were cared for in the most appropriate setting in line with National Standards.

Inspectors were informed that the hospital did not monitor which hospitals women were transferred to, for example, some women were also transferred to the Maternity Unit in University Hospital Waterford depending on the gestational age of the fetus and the reason for transfer.

Midwifery and medical staff carried out risk assessments of women at booking clinics during pregnancy and during and after birth. The maternity service had implemented the Irish Maternity Early Warning System for pregnant and postnatal women. Inspectors were informed that the Irish Maternity Early Warning System was used in

§§ Placenta accreta (and the more severe forms increta or percreta) is a serious pregnancy condition that occurs when the placenta grows too deeply into the uterus: also known as abnormally adherent placenta. The management of abnormally adherent placenta requires specialist multidisciplinary care.

*** Pre-eclampsia is a medical condition where high blood pressure and protein in the urine develop during pregnancy. If left untreated, it may result in seizures at which point it is known as eclampsia.

both the general hospital and the Maternity Unit for all pregnant and postnatal women in line with National Guidelines.

Admission pathways for neonates

Where preterm birth at 34 weeks gestation or less was anticipated, women were referred to either a maternity unit with a Level 2 (regional) neonatal care unit or to a specialist maternity hospital with higher level neonatal intensive care facilities in line with current national guidelines.[18]

Inspectors were informed that while the National Maternity Hospital was the first hospital contacted if a newborn infant required transfer for neonatal care, in practice infants were transferred by the National Neonatal Transport Team to which ever hospital had a neonatal cot available. Nationally, the availability of neonatal cots will vary according to the demand and activity in the maternity units and maternity hospitals. This was reflected in information provided to inspectors where the number of neonates transferred from St. Luke's General Hospital to the Coombe Women and Infants University Hospital was greater than the number transferred to the National Maternity Hospital in 2018.

Admission pathway for pregnant women

There were established pathways for the assessment, management and where necessary, admission of women who attended the hospital with obstetric problems 24 hours a day, seven days a week. Pregnant and post-natal women who presented with pregnancy-related problems attended the Obstetric Assessment Unit for assessment and review from Monday to Friday from 8.00am to 8.00pm. The Obstetric Assessment Unit was located in the Maternity Unit in close proximity to the Labour Ward and was staffed by two midwives. Two non-consultant hospital doctors, one at senior house officer grade and one at registrar grade provided medical assessment for women who attended the unit during core working hours.[†††] Outside of the opening hours of the Obstetric Assessment Unit, all women who presented with pregnancy related problems were assessed and reviewed in two assessment rooms in the Labour Ward. Pregnant women in labour who presented to the hospital were admitted directly to the Labour Ward for assessment and management.

Pregnant or post-natal women who presented to the hospital's Emergency Department with a surgical or medical condition unrelated to the pregnancy were assessed by the Emergency Department medical team and were then referred to the

[†††] The self-assessment tool submitted by St. Luke's General Hospital, Kilkenny reported that core working hours for medical staff at the hospital ranged from 08.30hrs to 17.00hrs Monday to Friday.

Obstetric Assessment Unit or the Labour Ward for review by the obstetric team. Once seen by the obstetric team, inspectors were informed that pregnant women with surgical or medical conditions were then reviewed by either the surgical or medical team at the hospital respectively.

Overall, inspectors found that admission and assessment pathways for pregnant women presenting with pregnancy related concerns were clear.

3.1.2 Access to specialist care and services for women and newborns

As the Maternity Unit was co-located with a general hospital, there was direct access to consultants in specialities such as respiratory medicine, cardiology, endocrinology, psychiatry and general surgeons onsite at the hospital. Clinical staff could access these specialities as needed for women attending the maternity service.

As with similar sized acute hospitals in Ireland, there was no access to a vascular surgeon or an interventional radiology service onsite. If pregnant women were diagnosed with placental abnormalities such as placenta accreta, they were referred by their obstetric team to the National Maternity Hospital for management and birth.

Advice from consultants in microbiology and haematology was provided to clinical staff at the hospital from consultants based at University Hospital Waterford. This was a legacy arrangement originating from the previous HSE South East Region and remained unchanged when the Ireland East Hospital Group governance structure was formed.[19]

Inspectors were informed that the hospital did not have access to a medical social worker onsite and that this was a long standing deficit at the hospital. This needs to be addressed. Maternity service providers should ensure that women have timely access to interventions and support from social workers as required in line with National Standards.[1]

Obstetric anaesthesiology services

Obstetric anaesthesiologists are required to assist with the resuscitation and care of women who become critically ill due to pregnancy-related conditions for example haemorrhage and pre-eclampsia. They are also responsible for the provision of pain relief such as epidural anaesthesia for women in labour and for the provision of anaesthesia for women who require caesarean section and other surgery during birth. Guidelines recommend that there is a duty anaesthetist immediately available to attend women in the Labour Ward 24 hours a day.[13]

The anaesthetic service in the hospital was led by a consultant anaesthesiologist and provided anaesthetic services to both St. Luke's General Hospital and Kilcreene Orthopaedic Hospital Kilkenny. The hospital did not have a designated obstetric

anaesthesiology service in line with National Standards. This meant that if a woman required an epidural or anaesthesia for surgery such as caesarean section, this was provided by either consultant or registrar grade anaesthesiologists who were also covering the hospital's emergency operating theatre rota and any emergencies requiring anaesthetic input in the hospital during core working hours. The reported epidural rate for women in labour was 30.4% in 2018 which is well below the national rate of 39.4% in 2018.

Outside of core working hours, the hospital had an on-call rota whereby a consultant anaesthesiologist was on-call from home and a registrar in anaesthesiology was on-call onsite at the hospital. The registrar on-call onsite at the hospital was responsible for providing anaesthetic care for the emergency operating theatres, the Emergency Department and the Intensive Care Unit. A second anaesthetic registrar in anaesthesiology was on-call from home to facilitate the transfer of patients to tertiary hospitals outside of core working hours if required.

In November 2018, Inspectors found that the anaesthetic service at the hospital was under-resourced and insufficient to meet the needs of the maternity service and the wider hospital outside of core working hours. This was identified as a potential risk to patient safety as there was a lack of capacity to manage two simultaneous emergencies that required anaesthetic input occurring at the hospital. HIQA escalated this risk to the CEO of the Ireland East Hospital Group after the onsite inspection. As discussed earlier in this report, by September 2019, despite recruitment campaigns, the hospital had yet to find suitable candidates to increase the number of registrars to provide two registrars in anaesthesiology on call on site outside of core working hours.

Anaesthetic pre-assessment service

Guidelines and National Standards recommend that there is an agreed system in place for the antenatal assessment of high risk mothers to ensure that the anaesthetic service is given sufficient notice of women at higher risk of potential complications.[13] St. Luke's General Hospital did not have an agreed system for the antenatal anaesthetic assessment of high risk mothers in line with National Standards.

In November 2018, inspectors were informed that there was an informal arrangement whereby some consultant obstetricians requested a consultant anaesthesiologist to review the healthcare records of women with risk factors, for example, lower back problems that may lead to complications with epidural analgesia. However, this was not standardised across the hospital and it was reported to HIQA that women with other risk factors for anaesthesia such as obesity were not consistently referred or reviewed in the antenatal period. Furthermore there were no written guidelines to advise staff of which women should be referred

for antenatal anaesthetic assessment. There was no improvement in these arrangments by the time of the September 2019 follow-up inspection. The hospital needs to address this risk to the safety of women following this inspection. Hospital management should ensure that there is a formalised clinical pathway in place for the referral and review of pregnant women with risk factors for anaesthesia in line with National Standards and guidelines.[13]

Critical care

Pregnant and post-natal women who required short term invasive cardiovascular monitoring or close observation were managed in the High Dependency Unit (known as the Coronary Care Unit) and women who required Level 3[‡‡‡] care were managed in the Intensive Care Unit in the hospital.

The hospital had guidelines for the transfer and admission for critical care to the Coronary Care Unit (for high dependency care) or the Intensive Care Unit, if a pregnant woman or post-natal woman's condition necessitated critical care. Pregnant and postnatal women admitted to critical care facilities at the hospital remained under the care of their consultant obstetrician. It was reported that these women were reviewed by the obstetric team at least once a day and midwifery care was provided as clinically indicated by midwives from the Maternity Unit. The presence of consultant anaesthesiologist or intensivist in the Intensive Care Unit have been addressed previously in Section 2.1.1 of this report.

Neonatal care

St. Luke's General Hospital Kilkenny reported in the self-assessment tool submitted to HIQA that the hospital had a Level 1 neonatal unit (local unit).[18] In line with the neonatal model of care in Ireland, this meant that the hospital provided special care for premature infants born at greater than 32 weeks gestation and for sick term infants.[18] Inspectors were informed that the hospital in practice provided special care for babies born at greater than 34 weeks gestation and all clinical staff who spoke with inspectors were clear on the gestational age that newborns could be admitted to the Special Care Baby Unit. Medical care for infants admitted to the Special Care Baby Unit was provided by one of the five consultant paediatricians working at the hospital. One of the consultant paediatricians had a special interest in neonatology and was assigned as the Clinical Lead for the Special Care Baby Unit.

[‡‡‡] Level 3 is the level of care required for patients who need advanced respiratory support (mechanical ventilation) alone or basic respiratory support along with support of at least one additional organ.

The Special Care Baby Unit provided Continuous Positive Airway Pressure (CPAP)[§§§] to babies greater than 34 weeks who required short term respiratory support since 2016. Babies who were born less than 34 weeks gestation were stabilised and transferred to either the Level 2 neonatal unit in University Hospital Waterford or to one of the three Dublin specialist maternity hospitals. Inspectors were informed that the majority of these newborn transfers were undertaken by the National Neonatal Transport Team.[****]

Newborns that required therapeutic cooling[††††] for neonatal encephalopathy had passive cooling commenced at the hospital and were then transferred to a tertiary maternity hospital. Urgent transfers of newborns requiring neonatal intensive care were organised through the National Neonatal Transport Programme.

3.1.3 Communication

Emergency response teams

The hospital had emergency medical response teams in place 24 hours a day, to provide an immediate response to obstetric and neonatal emergencies.

When a neonatal emergency occurred, clinical staff called an emergency number that went directly to switchboard to alert the paediatric senior house officer and paediatric registrar of their need to attend. In the Special Care Baby Unit, an emergency alert button could also be triggered to request the paediatric team to attend immediately.

The hospital implemented a separate emergency call system for obstetric emergencies that alerted a registrar in anaesthesiology, an obstetric registrar, the obstetric senior house officer and a senior midwife to attend an obstetric emergency. While clinical staff who spoke with inspectors stated that the system was effective, the hospital should audit the timeliness and effectiveness of the emergency response systems to provide assurance that the hospital can provide an effective timely response to obstetric emergencies.

§§§ Method of maintaining low pressure distension of lungs during inspiration and expiration when infant breathing spontaneously.

[****] The National Neonatal Transport Programme is a retrieval service for the stabilisation and transportation of premature and sick neonates up to the age of six weeks corrected gestational age, who require transfer for specialist care within Ireland and abroad. The service operates 24 hours a day seven days a week.

†††† Whole body neonatal cooling (WBNC) or therapeutic cooling is 'active' (not passive) cooling administered during the current birth episode as a treatment for Hypoxic Ischemic Encephalopathy (HIE). WBNC is only conducted in the four large tertiary maternity hospitals in Dublin and Cork.

Multidisciplinary handover

During the two inspections, inspectors identified that a nationally mandated guideline[20] in relation to clinical handover in maternity services had not been fully implemented at the hospital. The HSE conducted an audit of compliance with implementation of this national guideline at the hospital between January and March 2018. The findings of this audit indicated that while the Maternity Unit had developed local guidelines for clinical handover, the Maternity Unit was not fully compliant with the national guideline.

In September 2019, inspectors found that clinical handover had improved in the Maternity Unit. The hospital had implemented twice daily clinical handover for obstetric staff in the labour ward. Consultant presence at the morning handover had improved since the last inspection. The Maternity Unit introduced a daily safety huddle after the morning handover in the labour ward. At this meeting, midwifery managers, the consultant on-call for the day and non-consultant hospital doctors in obstetrics discussed key patient safety issues such as staffing levels, women admitted with high risk pregnancies and patient equipment issues. This was reported as working well at the hospital to improve care planning and communication in the Maternity Unit.

Notwithstanding these improvements, inspectors found that multidisciplinary handover between obstetrics, midwifery and anaesthesiology teams did not occur in the Maternity Unit.

Paediatricians held daily handover in the paediatric ward that was attended by all available paediatric consultants, non-consultant hospital doctors and paediatric nursing managers where information was handed over in relation to the babies in the Special Care Baby Unit. It was reported that the clinical nurse manager in the Special Care Baby Unit was unable to attend this handover meeting due to nursing staff shortages.

Clinical staff used the Identity-Situation-Background-Assessment-Recommendation (ISBAR) communication format to communicate information about patients in line with national guidelines.[20]

There was no system in place for the anaesthesiologist on duty to be notified when women with known anaesthetic risks were admitted. Inspectors were informed that some of the consultant anaesthesiologists and registrars in anaesthesiology attended the Labour Ward during weekdays where they discussed women with potential anaesthetic risks with the midwifery shift leader. However, this was not practised among all anaesthetic staff. This needs to be addressed following this inspection.

Non-adherence with effective clinical handover practices can result in delays in detection and treatment which can lead to adverse outcomes for women and newborns.[20] Following this inspection, the hospital should review the systems of clinical handover at the Maternity Unit to ensure that all clinical disciplines involved in the care of pregnant and postnatal women share information to identity potential clinical concerns to improve the safety of care provided in the maternity unit.

Other findings relevant to communication

The hospital had a written procedure detailing how to contact and inform the relevant staff when an emergency caesarean section was required. All clinical staff who spoke with inspectors were able to describe this procedure and required contact numbers were displayed in the maternity unit.

Staff who spoke with inspectors were clear about who was the most senior doctor to be called in line with the Irish Early Maternity Warning System escalation process.

3.1.4 Written policies, procedures and guidelines

In September 2019, inspectors found that the Maternity Unit had developed a strategic approach to reviewing and updating policies, procedures and guidelines. Progress with implementation and updating of policies, procedures and guidelines was monitored through the Maternity Services Governance Committee.

The Maternity Unit had a suite of policies, procedures and guidelines for the management of obstetric emergencies for example; postpartum haemorrhage, major haemorrhage, shoulder dystocia and umbilical cord prolapse. The hospital also had policies based on National Clinical Effectiveness Committee[‡‡‡‡] guidelines in relation to sepsis, clinical handover in maternity services and the Irish Maternity Early Warning System. The hospital developed a policy outlining the care of the critically ill obstetric patient. This policy was reviewed and updated in August 2019. This hospital need to ensure that this policy is audited to provide assurance that it has been fully implemented.

The Maternity Unit had a standardised procedure for the estimation and measurement of maternal blood loss. In September 2019, Inspectors found that a safe surgery checklist[§§§§] was completed for emergency and elective surgical procedures in obstetric operating theatres in line with best practice

[‡‡‡‡] Guidelines produced by the national clinical effectiveness committee have been formally mandated by the Minister of Health.
[§§§§] A surgical safety checklist is a patient safety communication tool that is used by operating theatre nurses, surgeons, anaesthesiologists and others to discuss together important details about a surgical case so that everyone is familiar with the case and that important steps are not forgotten. Surgical checklists work to improve patient safety during surgery.

recommendations. The hospital audited the use of this checklist in May 2019 and found 94% compliance rate with its use.

3.1.5 Maternity service infrastructure and facilities and resources

During both inspections, inspectors found that the layout and configuration of the Maternity Unit was disjointed and did not meet recommended design and infrastructural specifications for maternity services.[21] In September 2019, inspectors found that the hospital had improved signage to direct women and their families to the entrance of the Maternity Unit.

Assessment areas

During weekdays, pregnant and postnatal women who presented with pregnancy related complications attended the Obstetric Assessment Unit which was located in the Maternity Unit. The Obstetric Assessment Unit could accommodate up to four women and had one bed and three trolleys in the room. Spaces between beds and trolleys were inadequate and there was limited storage space for medical equipment required for assessment of women.

Bed spaces were separated with curtains and did not enable women's concerns to be communicated with privacy and dignity. Women who were awaiting assessment were seated in chairs outside the Obstetric Assessment Unit. At the time of both inspections, the Obstetric Assessment Unit was fully occupied.

Outside of the opening hours of the Obstetric Assessment Unit, women were assessed in one of two assessment rooms in the labour ward. Both of these rooms had ensuite toilets. These were two small rooms with limited space for medical equipment. Again, there was no piped oxygen or suction in either of these assessment rooms. Inspectors were informed that portable oxygen and suction could be accessed from the Labour Ward if required.

The Early Pregnancy Assessment Unit was located in the Maternity Unit and comprised of an ultrasound room and a small waiting room. There was limited space within the unit to counsel women and inspectors were informed that when concerns were found on fetal ultrasound, these women were taken to a room known as the Solace Room which was a short distance from the Early Pregnancy Assessment Unit to provide them with a private space to receive sensitive or distressing information.

Antenatal and post-natal ward

The main inpatient accommodation in the Maternity Unit was a combined antenatal and postnatal ward with 24 beds. This ward had one room with nine beds where women who required admission during the antenatal period or who were admitted for induction of labour were accommodated.

The ward had two four-bedded rooms assigned for postnatal care. The remaining accommodation comprised three single rooms and two two-bedded rooms. Inspectors were informed that the single rooms and two bedded rooms were assigned as antenatal, postnatal or early pregnancy care depending on the needs of the women for admission.

The layout of the ward was fragmented, with the Obstetric Assessment Unit, the Special Care Baby Unit and the Labour ward dividing the inpatient areas. There were limited space between beds in the postnatal rooms for babies' cots. There was very little space or designated areas for storage of medical equipment. Overall as stated previously the ward was not in line with recommended design and infrastructural specifications for maternity accommodation.[21]

HIQA was informed that there was a long term plan in the next 20 years to build a new maternity department in the hospital's developmental control plan. The hospital had received approval for a new building with 75 replacement beds for the general hospital which was expected to be built in the next five years. This would enable the hospital to reconfigure the Maternity Unit while awaiting the new maternity department.

The Labour Ward

The infrastructure of the Labour Ward did not meet recommended design and infrastructural specifications.[21] The labour ward had three single delivery rooms and one room with two beds that was used to administer medication to women for induction of labour or for women who required closer monitoring during pregnancy or after birth. Inspectors were informed that this room was used for women in labour when the three delivery rooms were occupied but this rarely occurred. None of the delivery rooms had ensuite toilets or showers. The delivery rooms were however spacious enough to allow for management of obstetric emergencies.

Operating theatres for gynaecology and obstetrics

The hospital did not have a dedicated obstetric operating theatre in or adjacent to the maternity unit. Obstetric surgery was performed in the hospital's Operating Theatre Department which was located on the floor below the Maternity Unit and was accessed by a lift. Ideally, operating theatres for obstetrics should be on the same level as the Labour Ward. The Operating Theatre Department comprised three operating theatres and a four bedded recovery area. One operating theatre was available for emergency surgery such as emergency caesarean sections at all times. The hospital should audit the timeliness of access to the operating theatre for emergency procedures such as category one caesarean sections to provide assurance that these procedures can be performed within recommended timeframes.

The operating theatre infrastructure and design did not meet recommended guidelines.[22] This was recorded as a risk to patient safety on the operating theatres' departmental risk register; however, this was not recorded on the hospital's corporate risk register.

Special Care Baby Unit

Inspectors found that the physical layout and infrastructure of the Special Care Baby Unit within the Maternity Unit was in urgent need of reconfiguration to meet recommended guidelines.[23] The Special Care Baby Unit had five cot spaces to accommodate five newborns. The layout of the unit was very small with limited spaces between cots. There was no isolation room in the unit. Inspectors were informed that the Special Care Baby Unit had to close once during 2018 due to infection transmission risks to newborns.

There was no parent room facility in the unit. There was a lack of storage facilities to store medical equipment. Despite the size of the Special Care Baby Unit, inspectors were informed on occasion; up to nine infants could be admitted. Inspectors were informed that when an infant required emergency treatment, all parents had to leave the Special Care Baby Unit due to the limited space.

In November 2018, the layout and infrastructure of the Special Care Baby Unit was identified by inspectors as a potential risk to the safety of infants due to the increased risk of cross infection between newborns. Hospital management had identified this risk and it was recorded on the hospital risk register and was escalated as a risk to the Ireland East Hospital Group. The hospital had also submitted a business plan to the Ireland East Hospital Group to address this issue.

Following the November 2018 inspection, the potential risks of cross infection in neonates from the infrastructural size and layout of the Special Care Baby Unit was communicated to the CEO of Ireland East Hospital Group for mitigation. By September 2019, capital funding for this development had yet to be approved. Renovations of the Special Care Baby Unit should be urgently progressed.

Laboratory services

Blood and blood replacement products were accessible when required in an emergency for women and infants. Urgent haematology, biochemistry and microbiology laboratory results were available to medical staff when required.

3.1.6 Maternity service equipment and supplies

In November 2018, Inspectors observed that the Maternity Unit had one emergency trolley for adult resuscitation that was located in close proximity to the labour ward. Considering the fragmented layout of the maternity unit, inspectors raised this as a

risk to patient safety with hospital management during the onsite inspection. During the follow-up inspection in September 2019, inspectors were informed that clinical staff could access a second adult resuscitation trolley from an adjacent adult general ward for the part of the Maternity Unit that was furthest from the Labour Ward. This is not ideal. Resuscitation equipment should be readily and easily accessible to staff for use in an emergency in individual clinical areas and this finding should be addressed so that there is ready access to this equipment in both the Maternity Unit and the Labour Ward.

In November 2018, inspectors observed deficiencies in relation to the availability of piped oxygen and suction at a number of the bed spaces in the antenatal, postnatal inpatient beds and in the Obstetric Assessment Unit. This may lead to a potential delay in the effective resuscitation of women in the Maternity Unit during an obstetric emergency. This was not in line with best practice and Health Building Note Guidelines for Maternity Care Facilities which outline that an oxygen supply should be available at each bed space in multi-occupancy in-patient accommodation rooms.[21] Following the November 2018 inspection, risks identified by HIQA in relation to lack of piped oxygen and suction was escalated to the Chief Executive of Ireland East Hospital Group.

In September 2019, inspectors were informed that planned works to install piped oxygen and suction did not proceed in 2019 due to increased occupancy and activity in the hospital. Hospital management provided evidence of discussions with technical services and a proposed timeframe to complete the works in 2020.

In the interim oxygen cylinders and a portable suction machine was available for emergency use in the Maternity Unit. However, staff were unable to locate one of the suction machines on the day of inspection. This was brought to the attention of hospital management on the day of inspection for review. Access to suction was available on the adult resuscitation trolley located near the labour ward.

Emergency supplies and medications were readily available in the clinical areas inspected to manage obstetric emergencies such as maternal haemorrhage, pre-eclampsia and neonatal resuscitation. Checklists showed that emergency equipment was checked daily in the clinical areas inspected. Cardiotocography***** machines for fetal monitoring viewed by inspectors were labelled to indicate when they had been serviced.

Table 5 lists the National Standards relating to effective care and support focused on during these inspections and outlines HIQA's findings in relation to the hospital's compliance with the National Standards monitored during the inspections.

***** Cardiotocography is an electronic means of recording the fetal heart beat and the uterine contractions during pregnancy. The machine produces a trace known as a cardiotocograph which illustrates the fetal heart rate and uterine activity.

Table 5: HIQA's judgments against the National Standards for Safer Better Maternity Services for Effective Care and Support that were monitored during this inspection

Standard 2.1 Maternity care reflects best available evidence of what is known to achieve safe, high-quality outcomes for women and their babies.	
Judgment November 2018	**Judgment September 2019**
Substantially compliant	Compliant
Key findings November 2018 Some policies, procedure and guidelines required updating. Limited audit of policy implementation.	**Key findings September 2019** The Maternity Unit had developed a strategic approach to reviewing and updating policies, procedures and guidelines.

Table 5 continued: HIQA's judgments against the National Standards for Safer Better Maternity Services for Effective Care and Support that were monitored during this inspection

Standard 2.2 Maternity care is planned and delivered to meet the initial and ongoing assessed needs of women and their babies, while working to meet the needs of all women and babies using the service.	
Judgment November 2018	**Judgment September 2019**
Non-compliant	Non-compliant
Key findings November 2018 There was a limited pre assessment anaesthetic service for pregnant women at the hospital. Communication between anaesthesiology and obstetric teams required improvement. Access to detailed fetal ultrasounds at 20-22 weeks limited to women with previous poor obstetric history.	**Key findings September 2019** There was no improvement to the pre-assessment anaesthetic service for pregnant woment at the hospital. There was no evidence of improved communication between anaesthesiology and obstetric teams. There was no increase in access to detailed fetal ultrasounds at 20-22 weeks. However an additional midwife with specialist training in fetal ultrasonography was expected to begin employment in September 2019 and another midwife was undertaking a specialist training and education programme with an expected completion date of January 2020. Hospital managers anticipated that the appointment of these two positions, would ensure that all pregnant women attending the hospital would be offered fetal ultrasound scans in line with National Standards by January 2020.
Going forward the hospital needs to ensure that the anaesthesiology medical team is resourced so that a pre-assessment anaesthetic service is provided in line with National Standards. Multidisciplinary handover in the Maternity Unit needs to include members of the anaesthesiology team to improve communication about women with risks for anaesthesia or who require critical care.	

Table 5 continued: HIQA's judgments against the National Standards for Safer Better Maternity Services for Effective Care and Support that were monitored during this inspection

Standard 2.3 Women and their babies receive integrated care which is coordinated effectively within and between maternity and other services.	
Judgment November 2018	**Judgment September 2019**
Substantially compliant	Substantially compliant
Key findings November 2018 Pathways to access critical care in tertiary hospital for critically ill women not formalised. Pathway to access neonatal intensive care cots not formalised.	**Key findings September 2019** One of the priorities of the IEHG Women and Childrens Clinical Academic Directorate's draft strategic plan for maternity services was to establish care pathways for women attending maternity services across the hospital group.
Going forward the Ireland East Hospital Group need to ensure that there are formalised carepathways in place across the hospital group for pregnant and postnatal women who require critical care.	
Standard 2.4 An identified lead healthcare professional has overall clinical responsibility for the care of each woman and that of her baby.	
Judgment November 2018	**Judgment September 2019**
Compliant	Not reviewed

Table 5 continued: HIQA's judgments against the National Standards for Safer Better Maternity Services for Effective Care and Support that were monitored during this inspection

Standard 2.5 All information necessary to support the provision of effective care, including information provided by the woman, is available at the point of clinical decision-making.	
Judgment November 2018	**Judgment September 2019**
Compliant	Not reviewed
Standard 2.7 Maternity care is provided in a physical environment which supports the delivery of safe, high-quality care and protects the health and wellbeing of women and their babies.	
Judgment November 2018	**Judgment September 2019**
Non-compliant	Non-compliant
Key findings November 2018 Risk of transmission of infections between neonates due to the poor infrastructure of the Special Care Baby Unit. Risk of delay in effective resuscitation of critically ill pregnant women due to lack of piped oxygen and suction in the inpatient accommodation of the Maternity Unit.	**Key findings September 2019** There was no improvement to the infrastructure issues identified in the November 2018 inspection. Portable oxygen and suction was available in the Maternity Unit.
Standard 2.8 The safety and quality of maternity care is systematically monitored, evaluated and continuously improved.	
Judgment November 2018	**Judgment September 2019**
Substantially-compliant	Compliant
Key Findings November 2018 No audit plan for the Maternity Unit	**Key Findings September 2019** The hospital had developed an annual audit plan for the Maternity Unit. There was evidence of ongoing clinical audit and improved audit processes in the Maternity Unit.

3.2 Safe Care and Support

A maternity service focused on safe care and support is continually looking for ways to be more reliable and to improve the safety and quality of its service. In relation to obstetric emergencies, the inspection sought to determine how risks to the maternity service were identified and managed, how patient safety incidents were reported and if learning was shared across the service. Inspectors also looked at how the hospital monitored, evaluated and responded to information and data relating to outcomes for women and infants and feedback from service users and staff.

Inspection findings in relation to safe care and support are described next.

Inspection findings

3.2.1 Maternity service risk management

Risks in relation to the maternity service were recorded in clinical area risk registers and in the corporate risk register for St. Luke's General Hospital, Kilkenny. There was evidence that risks identified and reported in the corporate risk register were reviewed every six weeks at the hospital's Executive Quality and Safety meeting. Risks that could not be managed at hospital level were escalated to the Ireland East Hospital Group. In November 2018, review of the corporate risk register indicated that five of the 24 risks rated as red or high risk on the corporate risk register were in relation to the provision of maternity services including:

- Risks to ongoing provision of services and development of new services due to requirement for specialist positions to be funded and filled such as consultant anaesthesiologists, consultant obstetricians and a social worker.
- Risk that the maternity service may not offer choice of an appropriate pathway of care based on safety risk profile and needs due to deficits in communication, fetal anomaly scans and appropriate staff.
- Risks for women associated with the hospital's high caesarean section rate.
- Risk to patient safety due to non-compliance with National Clinical Effectiveness Guidelines on clinical handover in the maternity services.
- Risks of non-compliance with *National Standards for the prevention and Control of Healthcare associated infections in acute healthcare services*[24] associated with the infrastructure of the Special Care Baby Unit.

In September 2019, the hospital had progressed with addressing a number of these risks:

- A fifth permanent consultant obstetrician was appointed in August 2019.
- Two full time fetal ultrasonographer positions were approved with one position commencing in September 2020.

- Ireland East Hospital Group appointed one social worker to provide advice and support for all the maternity units in the group
- A seventh consultant anaesthesiologist was appointed in November 2018 on a temporary contract. A permanent consultant anaesthesiologist position with an interest in intensive care medicine was anticipated to be advertised in quarter four 2019.
- Approval for an eighth consultant anaesthesiologist with expertise in intensive care medicine was in progress with the Ireland East Hospital Group at the time of inspection.
- Improved processes in relation to clinical handover in the Labour Ward.

Overall, it was evident to inspectors that progress was made to address the risks identified in relation the maternity service, risks in relation to clinical governance of the critical care service and the infrastructure of the Special Care Baby Unit remained. Ireland East Hospital Group and the hospital management team provided assurances to HIQA that they were closely monitoring these risks.

Clinical incident reporting

In November 2018, staff who spoke with inspectors were aware of the process and what type of clinical incidents that should be reported. However, they reported to inspectors that they were not provided with regular feedback in relation to the clinical incidents reported and the actions required to prevent reoccurrence.

In September 2019, inspectors found improvements in relation to the sharing of learning from reported clinical incidents since the November 2018 inspection. Inspectors found that reported clinical incidents were discussed at maternity governance meetings each month. Inspectors found evidence of sharing of learning and review of practice from review of clinical incidents. Weekly multidisciplinary team meeting were used as a forum for sharing learning from patient safety incidents with staff.

In September 2019, Inspectors found improved processes in place in relation to the timely completion of patient safety investigations and learning from patient safety incidents in the maternity service. Following a recommendation from a patient safety investigation, members of the obstetric, midwifery and paediatric teams were completing a training programme on communication skills run by the HSE.

The hospital held serious incident management team meetings when serious reportable events[†††††] occurred. Serious incidents and Serious Reportable Events were reviewed and decisions made regarding level of investigation required at these meetings. Implementation of recommendations from patient safety investigations

was monitored at the hospital. Ireland East Hospital Group appointed review teams external to the hospital when required to conduct patient safety incident reviews when required.

Feedback from women

During both inspections inspectors found that there was a formalised process to monitor compliments and respond to complaints from women using the maternity service. During the September 2019 inspection, inspectors found that as part of a quality improvement initiative at the hospital, a survey to seek women's experience of using the maternity service was underway.

3.2.2 Maternity service monitoring and evaluation

A range of different clinical measurements in relation to the quality and safety of maternity care were gathered at the hospital each month in line with national HSE Irish Maternity Indicator System reporting requirements. This data is gathered nationally by the Office of the National Women and Infants Health Programme and the National Clinical Programme for Obstetrics and Gynaecology.[25] This information facilitates national oversight by the HSE in relation to specified clinical outcome and activity measures across the 19 maternity units and maternity hospitals. This information also allows individual maternity units and maternity hospitals to benchmark their performance against national rates over time.

In addition to the Irish Maternity Indicator System data, midwifery metrics and numbers and reason for admissions and transfers to the Special Care Baby Unit were collated monthly at the hospital.

This data was reviewed at the maternity governance meetings where the hospital's Clinical Director, Clinical Lead for obstetrics, Director of Midwifery and the hospital's General Manager were in attendance. The hospital published monthly maternity patient safety statements in line with national HSE reporting requirements. Information provided to HIQA showed that clinical outcomes and activity data including the Irish Maternity Indicator System and midwifery metrics data was presented monthly to the Ireland East Hospital Group at monthly performance meetings.

Hospital management had identified that the hospital's caesarean section rate was an outlier whe compared with the national rate. The hospital's caesarean section rate was 42.2% in 2018 compared with the national rate of 33.8% in the same year. Internationally, the rate of caesarean section has risen steadily over the last few decades with wide variation in caesarean section rates among countries. Ireland's caesarean section rate is above the average rate for Organisation for Economic Cooperation and Development (OECD) countries [26] Due to considerable variation in

caesarean section rates across Ireland, maternity services are advised to analyse their deliveries and outcomes using the Robson 10-Group Classification Scheme.[25]

Staff in the Maternity Unit used the Robson 10-Group Classification Scheme for assessing, monitoring and comparing caesarean sections rates for women at the hospital as recommended nationally.[27] In September 2019, inspectors observed that findings from monitoring caesarean section rates using the Robson 10-Group Classification Scheme was displayed in the labour ward. Hospital management informed inspectors that the introduction of the integrated community midwifery service and practice changes in the management of induction of labour were contributing factors to the decreasing caesarean section rate in 2019.

HSE Nursing and Midwifery Quality Care-Metrics were monitored every month in the Maternity Unit to review practice around midwifery care planning, monitoring in labour, fetal heart monitoring, use of oxytocin and use of IMEWS. Areas for improvement were displayed on the staff noticeboard on the postnatal ward visited by inspectors.

Multidisciplinary perinatal mortality and morbidity meetings were held monthly in the Maternity Unit and were attended by obstetric, paediatric and midwifery staff. At these meetings clinical cases, activity and clinical outcomes including Robson 10-Group Classification was presented to all staff in attendance.

In September 2019, HIQA found improvements in the measures in place to monitor, evaluate and continuously improve the safety and quality of maternity care at the Maternity Unit.

Clinical audit

In November 2018, inspectors identified areas for improvement in relation to clinical audit practices in the maternity unit, namely, the requirement to develop an annual clinical audit plan and to ensure any recommendations from audit findings are implemented in a timely manner.

In September 2019, The hospital had developed an annual audit plan for the Maternity Unit. There was evidence of ongoing clinical audit in the maternity service. A national maternal sepsis audit was carried out by the HSE at the hospital in May and June 2018. This audit identified opportunities for improvement in relation to the implementation of national sepsis guidelines. This audit was repeated at the hospital in April 2019. This audit identified improvements in relation to the implementation of national sepsis guidelines from the clinical audit conducted in May 2018. The hospital needs to ensure that action plans are completed to ensure recommendations from clinical audits findings are implemented.

Annual clinical report

St. Luke's General Hospital produced and published an annual clinical report which included a section on the maternity unit. Inspectors were informed that the Maternity Unit did not participate at the Annual Clinical Reports Meeting, organised by the Institute of Obstetricians and Gynaecologists. This is a missed opportunity for the Maternity Unit to benchmark its performance against other similar sized units and should be reviewed following these inspections.

3.2.3 Quality improvement initiatives

During both inspections, the hospital had initiated and developed a number of quality improvement projects aimed at improving the quality and safety of maternity care. In September 2019, Ireland East Hospital Group provided expertise in quality improvement to support the Maternity Unit with the implementation of quality improvement initiatives. Examples of these include the following:

- In May 2019, the Ireland East Hospital Group facilitated a workshop at the hospital to develop an action plan to identify aspects of practice and organisational aspects of the maternity service that required improvement. This workshop was led by the Executive Director of the Women's Health Directorate and was attended by members of the multidisciplinary team including midwifery managers, midwives, consultant obstetricians, consultant paediatricians, non-consultant hospital doctors and hospital managers.
- An advanced midwife practitioner was appointed in 2018 to lead and provide community based antenatal and postnatal care for women with normal risk pregnancies. Six community based midwives as well as the Advanced Midwife Practitioner provided this service and inspectors were informed that one member of the community based team was rostered to the Labour Ward 24 hours a day. This is a welcome initiative to improve maternity care for women in line with the National Maternity Strategy[11] and National Standards.
- A project commenced at the Maternity Unit in 2018 to change the management of induction of labour for women who required it. As part of this project the hospital was monitoring birth outcomes before and after the practice change to observe for any reduction in caesarean section rates.
- The Maternity Unit had introduced a sepsis box in the Labour Ward which enabled faster access to necessary supplies to diagnose and treat sepsis as outlined in the National Maternity Sepsis form.
- A whiteboard had been introduced in the Labour Ward to improve clinical handover in the Maternity Unit in line with the National Clinical Effectiveness Committee Guideline.[20]

Inspectors found that there was some evidence of quality improvement initiatives to drive improvement in the provision of maternity services at the hospital. The hospital needs to progress with the implementation, review and report publically on a structured quality improvement programme in line with National Standards.

Table 6 on the next page lists the National Standards relating to safe care and support focused on during the two inspections and outlines HIQA's findings in relation to the hospital's compliance with the National Standards monitored during these inspections.

Table 6: HIQA's judgments against the National Standards for Safer Better Maternity Services for Safe Care and Support that were monitored during this inspection

Standard 3.2 Maternity service providers protect women and their babies from the risk of avoidable harm through the appropriate design and delivery of maternity services.	
Judgment November 2018	**Judgment September 2019**
Partially-compliant	Partially-compliant
Key Findings November 2018 Significant risks to the leadership and management of the obstetric services and the critical care services were not managed in a timely manner at the hospital.	**Key Findings September 2019** Ireland East Hospital Group and the hospital management team had implemented a number of measures to address the risks to the leadership and management of the obstetric services. Nonetheless, risks in relation to clinical governance of the critical care services remained at the hospital.
Going forward Ireland East Hospital Group and the hospital's management team need to strengthen the clinical governance arrangements of the critical care services at the hospital to mitigate the risks to patient safety.	

Table 5 continued: HIQA's judgments against the National Standards for Safer Better Maternity Services for Safe Care and Support that were monitored during this inspection

Standard 3.3 Maternity service providers monitor and learn from information relevant to providing safe services and actively promote learning, both locally and nationally.	
Judgment November 2018	**Judgment September 2019**
Substantially-compliant	Compliant
Key Findings November 2018 Learning from patient safety incidents was not always shared with staff. Delays in completion of patient safety investigations.	**Key Findings September 2019** Inspectors found improved processes in place in relation to the timely completion of patient safety investigations and learning from patient safety incidents in the maternity service. Reported clinical incidents were discussed at maternity governance meetings each month. Inspectors found evidence of sharing of learning and review of practice from review of clinical incidents. Weekly multidisciplinary team meeting were used as a forum for sharing learning from patient safety incidents with staff.
Standard 3.4 Maternity service providers implement, review and publicly report on a structured quality improvement programme.	
Judgment November 2018	**Judgment September 2019**
Substantially-compliant	Substantially compliant
Key Findings November 2018 No structured quality improvement programme in place but some quality improvement initiatives in place.	**Key Findings September 2019** The hospital had implemented a number of quality improvement initiatives since the last inspection. Ireland East Hospital Group provided expertise in quality improvement to support the Maternity Unit with the implementation of quality improvement initiatives.

Table 5 continued: HIQA's judgments against the National Standards for Safer Better Maternity Services for Safe Care and Support that were monitored during this inspection

Standard 3.5 Maternity service providers effectively identify, manage, respond to and report on patient safety incidents.	
Judgment November 2018	**Judgment September 2019**
Substantially-compliant	Compliant
Key Findings November 2018 HIQA found some delays in implementing findings from patient safety investigations.	**Key Findings September 2019** Hospital management held regular serious incident management team meetings. Serious incidents and Serious Reportable Events were reviewed and decisions made regarding level of investigation required at these meetings. Implementation of recommendations from patient safety investigations was monitored at the hospital.

4.0 Conclusion

Women and their babies should have access to safe, high-quality care in a setting that is most appropriate to their needs. To ensure this, maternity services should have effective leadership, governance and management arrangements in place. These arrangements should be underpinned by risk management and audit, multidisciplinary guidelines, adequate staffing resources, adequate equipment, and sufficient training and education for clinical staff, to facilitate the delivery of safe care and the effective management of obstetric emergencies.

In November 2018, HIQA found that the leadership, governance and management arrangements were not effective to ensure that all potential risks to the quality and safety of the maternity services provided at the hospital were addressed. HIQA identified a number of risks at St. Luke's General Hospital in relation to the quality and safety of maternity services specifically in relation to:

- Leadership, governance and management of the obstetric service
- Leadership governance and management of critical care services
- Staffing of anaesthetic services
- Infrastructural deficiencies

These risks were formally communicated by HIQA to the Chief Executive Officer of Ireland East Hospital Group. Following this inspection, the Ireland East Hospital Group outlined measures that had been taken or were intended to address the risk issues identified by HIQA.

In September 2019, HIQA conducted a second inspection to follow up on the implementation of actions by the hospital management team and the Ireland East Hospital Group Executive Management team to address the identified risks and the areas of non compliance with National Standards.

The follow-up inspection of St. Luke's General Hospital Kilkenny found significantly improved oversight of the maternity service at the hospital by the Ireland East Hospital Group. The appointment of a fifth permanent consultant obstetrician and increased consultant obstetrician presence was a welcome development in the Maternity Unit.

There was a notable improvement in the uptake of essential training in neonatal resuscitation, basic life support and fetal monitoring within the required timeframe for medical and midwifery staff. Nonetheless the uptake of training in the management of obstetric emergencies within the required timeframe for medical staff remained low and required improvement.

The appointment of a temporary consultant anaesthesiologist/intensivist improved the clinical oversight of patients admitted to the Intensive Care Unit three days a week. HIQA found that consultant anaesthesiologist presence on the remaining days was inconsistent resulting in a lack of timely reviews of patients admitted to the critical care unit. Hospital management provided assurances to HIQA that a senior decision maker in anaesthesiology would be assigned to the Intensive Care Unit, Monday to Friday following the inspection.

Inspectors also found that the hospital had improved the processes and oversight of clinical audit and had developed a strategic approach to reviewing and updating policies, procedures and guidelines.

It was anticipated that the provision of fetal ultrasounds at intervals recommended in the National Standards would improve in September 2019 with the appointment of an additional fetal ultrasonographer to the Maternity Unit.

Notwithstanding the above improvements, this inspection found that the level of anaesthetic cover outside of core working hours remained unchanged at the hospital. The hospital still did not have two registrars in anaesthesiology on site on call outside of core working hours at the time of the September 2019 follow-up inspection. There was no improvement to the provision of pre-assessment anaesthetic service for pregnant women. The appointment of two additional permanent consultant anaesthesiologists with a special interest in intensive care medicine was still outstanding. Hospital management needs to address deficiencies in relation to the presence of onsite anaesthetic cover outside core working hours, increased consultant anaesthesiologist or intensivist in the intensive care unit and the provision of pre-anaesthetic services as a priority.

During both inspections, HIQA found that the St Luke's General Hospital was not part of a formalised maternity network under a single governance structure. Nonetheless, there was evidence during the September 2019 inspection that the Ireland East Hospital group was working to develop these structures. The development of a maternity network within Ireland East Hospital Group needs to be implemented to enable sharing of expertise and clinical services to support safe quality maternity services at St. Luke's General Hospital.

The Ireland East Hospital Group needs to progress with the establishment of a managed clinical network for maternity services under a single governance framework as recommended in the National Maternity Strategy and National Standards. Ireland East Hospital Group should ensure that formalised care pathways are progressed between St. Luke's General Hospital and specialist maternity services in the hospital group.

The opportunities for improvement identified as part of this monitoring programme and reflected in this report should be reviewed by the maternity hospital/unit and the relevant hospital group with actions for improvement identified alongside a standardised approach for implementation across the maternity hospital/units and hospital group.

References

1. Health Information and Quality Authority. *National Standards for Safer Better Maternity Services.* Dublin: Health Information and Quality Authority. 2016. Available online from: https://www.hiqa.ie/reports-and-publications/standard/national-standards-safer-better-maternity-services

2. Health Act 2007. Dublin: The Stationery Office; 2007. Available online from: http://www.irishstatutebook.ie/eli/2007/act/23/enacted/en/print

3. Health Information and Quality Authority. Guide to HIQA's monitoring programme against the National Standards for Safer Better Maternity Care with a focus on obstetric emergencies. Dublin: Health Information and Quality Authority. 2019. Available online from: https://www.hiqa.ie/sites/default/files/2019-04/Guide-to-the-Monitoring-Programme-against-the-National-Standards-for-Safer-Better-Maternity-Standards-2019_1.pdf

4. Health Information and Quality Authority. *Report of the investigation into the safety, quality and standards of services provided by the Health Service Executive to patients in the Midland Regional Hospital, Portlaoise*. Dublin: Health Information and Quality Authority. 2015. Available online from: https://www.hiqa.ie/sites/default/files/2017-01/Portlaoise-Investigation-Report.pdf

5. Health Information and Quality Authority. *Review of progress made at the Midland Regional Hospital, Portlaoise, in implementing recommendations following HIQA's investigation.* Dublin: Health Information and Quality Authority; 2016. Available online from: https://www.hiqa.ie/sites/default/files/2017-02/MRHP_Review_Report.pdf

6. Health Service Executive(HSE) Ireland East Hospital Group Operational Plan 2018. Available on line from: https://www.hse.ie/eng/services/publications/serviceplans/service-plan-2018/operational-plans-2018/ireland-east-hospital-group-operational-plan-2018.pdf

7. Joint Faculty of Intensive Care Medicine of Ireland (JFICMI) *National Standards for Adult Critical Care Services*. Dublin: Joint Faculty of Intensive Care Medicine of Ireland (JFICMI) in association with The Intensive Care Society of Ireland (ICSI).2011.Available online from: https://www.jficmi.ie/wp-content/uploads/2015/05/Appendix-9-JFICMI-ICSI_Minimum_Standards.pdf

8. National Clinical Effectiveness Committee. *Sepsis Management-National Clinical Guidelines No.6.* Dublin: Department of Health; 2014. Available online from:http://health.gov.ie/wp-content/uploads/2015/06/Sepsis-Mgmt_Full-Report.pdf

9 Health Service Executive (HSE) Obstetrics & Gynaecology, Anaesthetic and Critical Programmes Clinical Strategy & Programmes Division Guidelines for the Critically Ill

Woman in Obstetrics. Health Service Executive, Dublin. Version 1.1 2014. Available online from: https://rcpi-live-cdn.s3.amazonaws.com/wp-content/uploads/2016/05/25.-Guidelines-for-the-Critically-Ill-Woman-in-Obstetrics.pdf

10. Health Service Executive. *Final Report of the HSE Midwifery Workforce Planning Project.* Dublin: Health Service Executive; 2016.

11. Department of Health. *Creating a better Future together National Maternity Strategy 2016-2026*. Dublin: Department of Health. 2016 Available online from:http://health.gov.ie/wp-content/uploads/2016/01/Final-version-27.01.16.pdf

12. Health Information and Quality Authority. *Investigation into the safety, quality and standards of services provided by the Health Service Executive to patients, including pregnant women, at risk of clinical deterioration, including those provided in University Hospital Galway, and as reflected in the care and treatment provided to Savita Halappanavar.* Health Information and Quality Authority. 2013. Available online from: https://www.hiqa.ie/sites/default/files/2017-01/Patient-Safety-Investigation-UHG.pdf

13. Association of Anaesthetists of Great Britain & Ireland Obstetric Anaesthetists' Association. *OAA/AAGBI Guidelines for Obstetric Anaesthetic Services 2013*. Available online from: https://anaesthetists.org/Portals/0/PDFs/Guidelines%20PDFs/Guideline_obstetric_anaesthetic_services_2013_final.pdf?ver=2018-07-11-163755-693&ver=2018-07-11-163755-693

14. Health Service Executive (HSE) Office of National Clinical Advisor and Group Lead Acute Hospital Division. Letter re anaesthetic cover in hospitals with Co-located maternity units. Dublin. 2016 Available online from: https://www.aagbi.org/sites/default/files/Anaesthetic%20Cover%20HSE%20Letter.pdf

15. Institute of Obstetricians and Gynaecologists ,Royal College of Physicians of Ireland and Directorate of Clinical Strategy and Programmes, Health Service Executive. *Clinical Practice Guideline Fetal Growth Restriction-Recognition, Diagnosis and Management*. Dublin: Health Service Executive. 2015. Available online from: https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/fetal-growth-restriction-recognition-diagnosis-and-management.pdf

16. National Institute for Health and Care Excellence . *Antenatal Care for uncomplicated pregnancies Clinical Guideline 6.* London: National Institute for Health and Care Excellence. 2019. Available online from: https://www.nice.org.uk/guidance/cg62

17. Jauniaux E.R.M, Alfirevic Z, Bhide AG, Belfort M.A, Burton G.J., Collins S.L., Dornan S, Jurkovic D, Kayem G,Kingdom J, Silver R, Sentilhes L, on behalf of the

Royal College of Obstetricians and Gynaecologists. *Placenta Praevia and Placenta Accreta: Diagnosis and Management Green-top Guideline No.27a*. London: Royal College of Obstetricians and Gynaecologists. 2018. Available online from: https://obgyn.onlinelibrary.wiley.com/doi/full/10.1111/1471-0528.15306

18. Health Service Executive (HSE) National Clinical Programme for Paediatrics and Neonatology 2015 *Model of Care for Neonatal Services in Ireland*. Available online from: https://www.hse.ie/eng/services/publications/clinical-strategy-and-programmes/model-of-care-for-neonatal-services-in-ireland.pdf

19. Health Information and Quality Authority. *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services.* Dublin: Health Information and Quality Authority. 2017. Available online from: https://www.hiqa.ie/sites/default/files/2017-05/2017-HIQA-National-Standards-Healthcare-Association-Infections.pdf

20. National Clinical Effectiveness Committee. *Communication (Clinical Handover) in Maternity Services - National Clinical Guidelines No.5*. Dublin: Department of Health; 2014. Available online from: http://health.gov.ie/wp-content/uploads/2015/01/National-Clinical-Guideline-No.-5-Clinical-Handover-Nov2014.pdf

21. Department of Health, United Kingdom. Children, young people and maternity services. Health Building Note 09-02: Maternity care facilities. Department of Health, United Kingdom. 2013. Available online from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/147876/HBN_09-02_Final.pdf

22. National Health Service (NHS) Estates, United Kingdom. Health Building Note (HBN) 26, Facilities for surgical procedures, Volume 1. NHS Estates. 2004. Available online from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/148490/HBN_26.pdf

23. Department of Health United Kingdom. Health Building Note 09-03 Neonatal Units Facilities. London: Department of Health. 2013. Available online from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/147879/HBN_09-03_Final.pdf

24. Health Information and Quality Authority. *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services.* Dublin: Health Information and Quality Authority. 2017. Available online from: https://www.hiqa.ie/sites/default/files/2017-05/2017-HIQA-National-Standards-Healthcare-Association-Infections.pdf

25. Health Service Executive: National Women and Infants Health Programme and the National Clinical Programme for Obstetrics and Gynaecology. Irish Maternity Indicator System. National report 2017. Dublin: Health Service Executive; April 2018. Available online from: https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/national-reports-on-womens-health/imis-national-report-201711.pdf

26 Organisation for Economic Cooperation and Development (OECD) Caesareans section indicator. Available online from https://data.oecd.org/healthcare/caesarean-sections.htm

27. Manning E, Leitao S, Corcoran P, McKernan J, de Foubert P, Greene RA, on behalf of the Severe Maternal Morbidity Group. *Severe Maternal Morbidity in Ireland Annual Report 2016.* Cork: National Perinatal Epidemiology Centre. 2018. Available online from: https://www.ucc.ie/en/media/research/nationalperinatalepidemiologycentre/annualreports/SevereMaternalMorbidityinIrelandAnnualReport2016.pdf

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