Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the unannounced inspection of maternity services at Cork University Maternity Hospital

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

Dates of inspection: 3 July 2019 and 4 July 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 units and hospitals 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, as we monitor against the National Standards, 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 delivery, 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 units and hospitals 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 units and hospitals could effectively identify women at higher risk of complications in the first instance. It also examined how each maternity unit or hospital 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.

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.

* 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.

1.1 Information about this inspection

Cork University Maternity Hospital is a statutory hospital which is owned and managed by the Health Service Executive (HSE). The hospital is part of the South/South West Hospital Group.[†] The hospital is adjacent to Cork University Hospital and both hospitals are linked structurally by an interior corridor. There were 7,577 births at the hospital in 2018.

To prepare for this inspection, inspectors reviewed a completed self-assessment tool and preliminary documentation submitted by Cork University Maternity Hospital to HIQA in June 2018. Inspectors also reviewed information about this hospital including previous HIQA inspection findings; other information received by HIQA and published national reports. Information about the unannounced inspection at the hospital is included in the Table 1.

Table 1- Inspection details

Dates	Times of inspection	Inspectors
03 July 2019	11:00hrs to 19:15hrs	Denise Lawler Aileen O' Brien Dolores Dempsey Ryan Kay Sugrue
04 July 2019	08:00hrs to 14:50hrs	

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

- Clinical Director for Cork University Maternity who was also the Clinical Director for the Maternity Directorate of the South/South West Hospital Group
- representatives of the hospital's Executive Management Committee; Director of Midwifery and Business Manager
- the hospital's lead consultants in each of the clinical specialties of obstetrics, anaesthesiology and neonatology.

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

[†] The South/South West Hospital Group is comprised of Cork University Maternity Hospital, Cork University Hospital, University Hospital Waterford, Mercy University Hospital, South Tipperary General Hospital, University Hospital Kerry, South Infirmary Victoria University Hospital, Bantry General Hospital, Mallow General Hospital and Lourdes Orthopaedic Hospital.

- Emergency Room where pregnant and postnatal women who presented to the hospital with pregnancy related and postnatal concerns were assessed
- Birthing Suite where women were cared for during labour and birth
- High Dependency Unit where women who required additional monitoring and support during pregnancy and post birth were cared for
- Operating Theatre Department where women underwent surgery, for example in the case of a caesarean section
- Postnatal ward where women and babies were cared for after birth
- Neonatal Unit where babies 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 doctors assigned to the maternity service. In addition, inspectors looked at the clinical working environment and reviewed hospital documentation and data pertaining to the maternity service during the inspection.

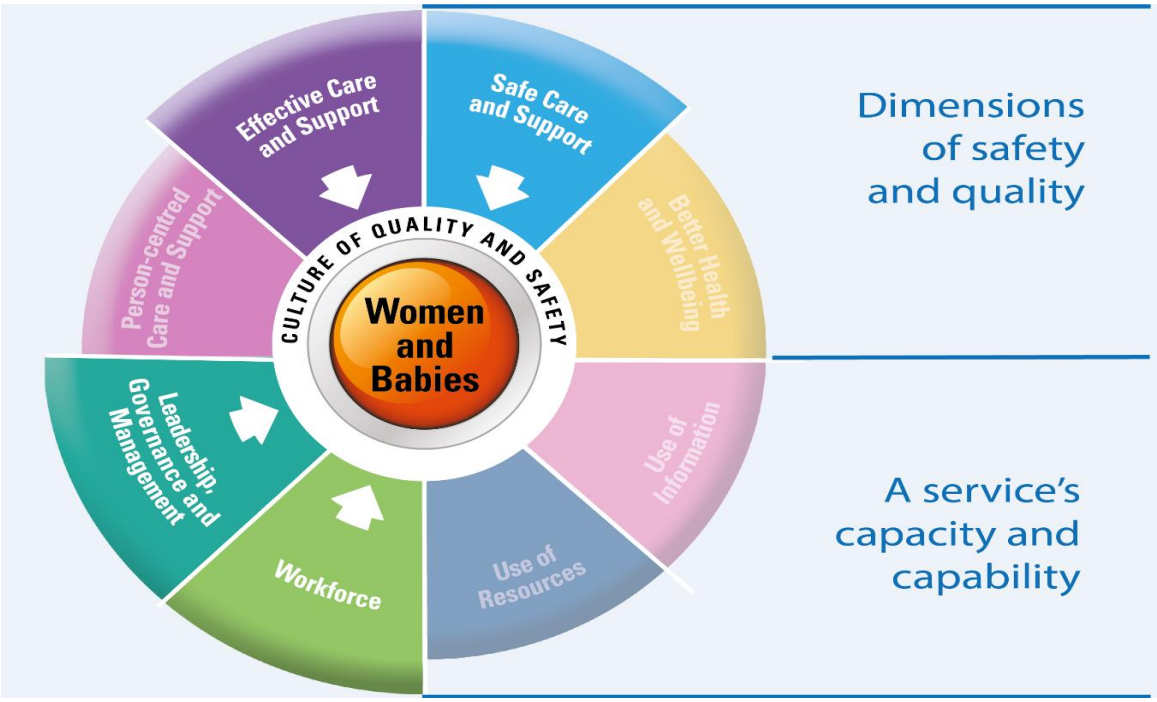
HIQA would like to acknowledge the cooperation of the hospital management team and all staff who facilitated and contributed to this unannounced inspection.

1.2 How inspection findings are presented

This inspection was 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 1 - 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 structure and corresponding National Standards and Lines of Enquiry

Report sections	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 Cork University Maternity 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 24 hours a day.

During this inspection, inspectors looked at 10 National Standards in relation to leadership, governance and management and workforce. Of these, Cork University Maternity Hospital was compliant with seven National Standards, partially compliant with two National Standards and non-compliant with one National Standard.

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 3 and Table 4, within this section.

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 obligations.

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

HIQA found that Cork University Maternity Hospital was not part of a formalised maternity network under a single governance structure. However, at the time of inspection, there was evidence that there were collaborative working arrangements in place between Cork University Maternity Hospital and the other three maternity units in the South/South West Hospital Group, namely South Tipperary General Hospital, University Hospital Kerry and University Hospital Waterford. There was evidence that the hospital group were progressing with the establishment and implementation of a Maternity Directorate, whereby the maternity, neonatal and gynaecological services within the maternity services in the South/South West Hospital Group[‡] would be integrated into a single governance structure.

The first stage in the establishment of this Maternity Directorate was the appointment of a Clinical Director with executive and financial authority for Cork University Maternity Hospital in February 2017. The Clinical Director reported to the Chief Executive Officer of the South/South West Hospital Group and was responsible for leading and managing the Maternity Directorate. At the time of inspection the Clinical Director was not responsible for the governance, management or delivery of maternity, neonatal and gynaecological services at University Hospital Kerry, University Hospital Waterford or South Tipperary General Hospital. However, through a daily teleconference call with the Directors of Midwifery from Cork University Maternity Hospital and the other three maternity units in the hospital group, the Clinical Director was informed of clinical activity and issues relating to the maternity, neonatal and gynaecological services across the hospital group. Information relating to the maternity services across the hospital group was also shared with at the Maternity Directorate Executive Management Committee meeting held every two weeks.

The documented strategic aim of the Maternity Directorate was to provide the highest standard of care, through the delivery of clinical excellence, to women and infants accessing maternity, neonatal and gynaecological services.

At the time of inspection, the Clinical Director and hospital group's Programme Management Office were progressing with the implementation of the Maternity Directorate's governance structures and processes. It was anticipated that when the Maternity Directorate was fully implemented the functions of local governance

[‡] The four maternity services in the South/South West Hospital Group are Cork University maternity Hospital, South Tipperary General Hospital, University Hospital Kerry and University Hospital Waterford.

committees for example, Quality and Patient Safety Committees, in the four maternity services in the hospital group will be incorporated into the governance processes and structures of the Maternity Directorate.

Hospital management told inspectors that the development and implementation of the Maternity Directorate's structures and processes was dependent on the recruitment of suitable people to key senior management positions. Four key senior positions, the Operations Manager, Quality and Safety Manager, Quality and Safety Co-ordinator and Finance Manager were not filled at the time of inspection. The main reason cited for lack of progress on filling these positions was employment controls implemented by the HSE.

The reporting structures for the Maternity Directorate were clearly outlined in draft documentation reviewed by inspectors. One committee, the Executive Management Committee and some support arrangements were established to support the strategic aim of the Maternity Directorate. Other committees were being established but were not operational or functioning at the time of inspection. The Executive Management Committee enabled the collaborative working arrangements between Cork University Maternity Hospital and the other three maternity units in the hospital group, and was the beginning of a group based system of corporate and clinical goverance.

Maternity Directorate Executive Management Committee

The management of the Maternity Directorate was overseen by the Directorate's Executive Management Committee. This multidisciplinary committee included the Directors of Midwifery, Clinical Leads in obstetrics and the Business Managers from the four maternity services in the hospital group, the clinical lead in neonatology and Quality and Safety lead from Cork University Maternity Hospital. The committee was chaired by the Clinical Director. The committee met every two weeks to monitor and review clinical, operational, quality and safety issues across the Directorate. Each maternity hospital's or unit's performance data submitted for the Irish Maternity Indicator System[§] and Maternity Patient Safety Statements[**] were reviewed and signed off by the Clinical Director at this meeting.

[§] This Irish Maternity Indicator System encompasses a range of multidisciplinary metrics, including hospital management activities, deliveries, serious obstetric events, neonatal, and laboratory metrics.
It provides within-hospital tracking of both monthly and annual data. It also provides national comparisons across all maternity units, allowing hospitals to benchmark themselves against national average rates and over time.
[**] 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.

Pathways for women at higher risk of complications and babies requiring complex neonatal care within the South/South West Hospital Group

The South/South West Hospital Group had a formally ratified inter-hospital transfer policy setting out the mandatory acceptance and retrieval of women and babies to and from Cork University Maternity Hospital and the other three maternity units within the hospital group. These transfers included women and babies who required complex or specialist maternity care before, during and after birth.

In addition to the Executive Management Committee and the mandatory acceptance and retrieval policy, other structures were in place to facilitate the collaborative working arrangements and practices across the maternity services in the hospital group. These included:

- Maternity Services Working Group for Midwifery: this forum focussed on the continuous improvement of midwifery care across the hospital group. The group met very month and membership included the Directors of Midwifery from each of the four maternity services. Meetings of the group were chaired by the hospital group's Chief Director of Nursing and Midwifery.
- Neonatology network: neonatology services within the Directorate operated within a hub and spoke model where neonatologists from Cork University Maternity Hospital provided advice and support for paediatricians in University Hospital Kerry.
- Maternity Directorate Consultant Forum: this forum provided consultants in the specialities of obstetrics and neonatology with an opportunity to communicate and share learning and expertise. The forum met every month and meetings were chaired by the Clinical Director.

While there were structures and process implemented to facilitate the sharing of services, expertise and information across the Maternity Directorate, other structures and processes that are characteristic of a managed clinical maternity network were not in place. For example, there were no joint appointments in any of the specialities of obstetrics, anaesthesiology or neonatology or paediatrics across the maternity services in the hospital group. However, the Clinical Director for the Maternity Directorate did conduct a preconception obstetric clinic in South Tipperary General Hospital every two months for women with high-risk pregnancies. There were no shared clinical meetings such as perinatal mortality and morbidity meetings between the Cork University maternity Hospital and other maternity units within the South/South West Hospital Group. The Maternity Directorate did not have a Serious Incident Management Team to oversee the management of clinical incidents across the hospital group.

Cork University Maternity Hospital leadership, governance and management

Overall, inspectors found that the hospital had clear accountability arrangements to achieve the delivery of safe care at the hospital.

The Clinical Director had overall operational management, responsibility and accountability for the maternity, neonatal and gynaecological services at Cork University Maternity Hospital. The Clinical Director reported to the Chief Executive Officer of the South/South West Hospital Group and attended performance meetings, held every month with the hospital group management team.

Clinical leads were appointed at the hospital in each of the specialities of obstetrics, anaesthesiology and neonatology. These clinicians provided clinical leadership and were responsible for the operational management of the services within their speciality and for the training and supervision of non-consultant hospital doctors. The hospital also had a Clinical Lead for Quality and Safety. The Director of Midwifery was responsible for the organisation and management of the midwifery service at the hospital. The clinical leads for obstetrics and neonatology, Director of Midwifery and Clinical Lead for Quality and Safety were members of the Maternity Directorate's Executive Management Committee.

Quality and Patient Safety Committee

The hospital's Quality and Patient Safety Committee was a multidisciplinary committee comprising of people whose roles are related to establishing, developing and implementing clinical governance within the four maternity services in the hospital group. Membership included the Operations Manager and Quality and Safety Manager, Director of Midwifery and Risk Manager and Business Manager. The stated aim of the committee was to develop, deliver, implement and evaluate a comprehensive quality and safety programme with associated structures, policies and processes that improved quality and safety at the hospital. The committee also had oversight of the management of risk in the hospital. They reviewed and identified trends in safety and quality and monitored progress on the implementation of quality improvement plans. The committee was chaired by the Clinical Lead for Quality and Safety who was operationally accountable to the Clinical Director. This committee, through the chair, reported to the Maternity Directorate's Executive Management Committee every month and submitted a formal report to them every three months.

Serious Incident Management Team

The hospital had a Serious Incident Management Team comprising of senior managers and clinicians who oversaw the management of clinical incidents at the

hospital. The team met when a clinical incident was to be reviewed usually every two or three weeks, or more frequently if required. Meetings were chaired by the Clinical Director. This committee reported to the Directorate's Executive Management Committee every month and submitted a formal report to the committee every three months.

Local Information Governance Committee

A Local Information Governance Committee was established in the hospital and was responsible for the governance, management and quality of data within the hospital. The committee was chaired by a consultant obstetrician from the hospital. It met every month and, through the chair, reported to the Directorate's Executive Management Committee every month and submitted a formal report to committee every three months.

Research, Education, Training and Innovation Committee

The Research, Education, Training and Innovation Committee were responsible for providing the strategic vision, direction and opportunities for research, education, training and innovation in the hospital. This multidisciplinary committee comprised of the Director of Midwifery, a representative from the Local Information Governance Committee, the Operations Manager, a consultant representative, Director of the Centre of Midwifery and nominees from the College of Medicine and School of Nursing and Midwifery. The committee met every three months and meetings were chaired by the Clinical Director. The committee submitted a report to the Executive Management Committee every three months.

Obstetric and Neonatal Emergencies Committee

The Obstetric and Neonatal Emergencies Committee was established in March 2019. The committee was responsible for the development and implementation of a training and education strategy relating to obstetric emergencies, for nursing, midwifery and medical staff. Their role also included the development of policies, procedures, protocols and guidelines for obstetric emergencies so that the management of obstetric emergencies was standardised across the maternity services within the hospital group.

Cork University Maternity Hospital did not have a publicly available statement of purpose that accurately described the services provided to women and their babies; including how and where services were provided in the hospital.

The hospital did not have a strategic plan. Hospital managers informed inspectors that a strategic plan would be developed when the Maternity Directorate was fully established and operational. It was proposed that this strategic plan will set out the

objectives and direction for the delivery of safe, high-quality care in the short, medium and long term for services across the Maternity Directorate.

Table 3 on this and the next page lists the National Standards relating to leadership, governance and management focused on during this inspection and key findings in relation to the hospital's level of compliance with the National Standards monitored during this inspection.

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:** Compliant
Standard 5.2 Maternity service providers have formalized governance arrangements for assuring the delivery of safe, high-quality maternity care. **Judgment:** Compliant
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. **Key findings:** At the time of inspection Cork University Maternity Hospital did not have a statement of purpose that described the services at the hospital. **Judgment:** Non-compliant
Standard 5.4 Maternity service providers set clear objectives and have a clear plan for delivering safe, high-quality maternity services. **Key findings:** The hospital did not have a strategic plan for maternity services in the hospital. There were plans to develop a strategic plan for the Maternity Directorate when the maternity network was fully established and operational. **Judgment:** Partially compliant
Standard 5.5 Maternity service providers have effective management arrangements to support and promote the delivery of safe, high-quality maternity services. **Judgment:** Compliant

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:** Compliant
Standard 5.11 Maternity service providers act on standards and alerts, and take into account recommendations and guidance issued by relevant regulatory bodies. **Judgment:** Compliant

2.2 Workforce

Effective maternity services need to ensure that there is 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

At the time of inspection, Cork University Maternity Hospital was funded for 408.92 whole-time equivalent (WTE) permanent midwife and nursing positions. Inspectors were informed that the hospital had 398.09 WTE midwifery and nursing positions filled on a permanent basis, resulting in a deficit of 10.84 WTE midwife and nursing positions at the hospital.

A supernumerary experienced midwife who acted as a shift leader was in place for each shift in the Birthing Suite during and outside core working hours.[††] Inspectors were informed that women in labour in the Birthing Suite had one to one support from a midwife. Inspectors were told that international recommended nurse to baby ratios of one nurse to one baby in intensive care, one nurse to two babies in higher dependency care and one nurse to four babies in special care were not always achieved in the Neonatal Unit.[4] However, staffing deficiencies were addressed by employing agency midwifery and nursing staff.

The hospital was staffed and managed so that emergency obstetric surgery such as caesarean sections could be performed when required. The hospital had an agreed process for staffing an operating theatre for emergency obstetric surgery during and outside core working hours. Outside core working hours, the Operating Theatre Department on-call nursing team comprised of three nurses. Contingency plans were in place to manage two coinciding emergencies 24-hours a day, seven days a week. Staff from the Birthing Suite or from other areas in the hospital where deployed by nursing and midwifery administration if a second nursing team was needed for the operating theatre out-of-hours.

[††] For the purpose of this monitoring programme core working hours are considered to be 9am-5pm.

Staff who spoke with inspectors were clear about their role and responsibilities, and the reporting structure to be used if they had any concerns or issues that impacted on the provision of safe, high-quality care for women and babies.

Specialist support staff

Cork University Maternity Hospital, in line with National Standards, had sufficient numbers of trained fetal ultrasonographers and offered fetal ultrasound scans during the first and second trimester of pregnancy to all pregnant women attending the hospital. This is discussed further in section 3.1.1 of this report.

The hospital employed a neonatal resuscitation trainer to provide training and support in neonatal resuscitation to midwifery, nursing and medical staff. At the time of inspection, the hospital was also in the process of recruiting a perinatal mental health midwife.

2.2.2 Medical staff

Medical staff availability

Consultants in the specialties of obstetrics, anaesthesiology and neonatology were employed on a permanent or locum basis. Notably, a quarter of the consultant staff at the hospital (five consultant obstetricians and one consultant anaesthesiologist) were employed on locum contracts.

All consultants in obstetrics, anaesthesiology and neonatology were registered as specialists in their speciality with the Medical Council in Ireland. In addition to the consultant staff, the hospital was also staffed with non-consultant hospital doctors at specialist registrar, registrar and senior house officer grade in the specialties of obstetrics, anaesthesiology and neonatology who were available in the hospital to provide care to women and babies during and outside of core working hours. On-call consultant obstetricians, anaesthesiologists and neonatologists were accessible to medical, midwifery and nursing staff. Rapid response teams were available 24-hours a day, seven days a week to attend to obstetric emergencies, neonatal emergencies and cardiac arrests.

Obstetrics

The hospital had approval for 16.9 WTE permanent consultant obstetrician positions. At the time of inspection, 11.9 WTE positions were permanently filled and five were filled by locum consultants.

A consultant obstetrician was rostered to be on call for the Birthing Suite during core working hours. Staff told inspectors that this person was not always free from other duties because they also covered the elective operating theatre list. However, inspectors were told that, if the consultant was covering a case in the operating

theatre they would arrange for a colleague to be on call for the Birthing Suite. In addition to consultant cover, two non-consultant hospital doctors in obstetrics, one at senior registrar grade and one at senior house officer grade, were rostered to the Birthing Suite during core working hours.

Outside core working hours the hospital had an on-call rota where two consultant obstetricians were on call from home, one in every seven nights. Three non-consultant hospital doctors, two at registrar grade and one at senior house officer grade were on call onsite in the hospital.

Obstetric anaesthesiology

Anaesthetic cover in the hospital was provided from the general pool of 25 WTE consultant anaesthesiologists based at Cork University Hospital. Nine of these WTE positions provided a dedicated obstetric anaesthesiology service at Cork University Maternity Hospital. The hospital had recently appointed a lead consultant for obstetric anaesthesiology and had received additional funding for two further consultant anaesthesiologists with an interest in obstetric anaesthesiology. The lead consultant for obstetric anaesthesiology was responsible and accountable for the organisation and management of the obstetric anaesthesiology service at the hospital.

In line with relevant guidelines,[5] a duty anaesthesiologist was immediately available to attend women in the Birthing Suite 24 hours a day, seven days a week. Outside core working hours the hospital had an on-call rota whereby a consultant anaesthesiologist was on call from home one in every five nights. A non-consultant hospital doctor at registrar grade was on call onsite in the hospital. The hospital had access to a second on-call registrar in anaesthesiology from the adjacent general hospital if required.

Neonatology

Senior clinical decision makers in neonatology were available in the hospital 24-hours a day, seven days a week. Care for newborns at the hospital was led by consultant neonatologists. The hospital had approval for six WTE consultant neonatologist positions. Five of these positions were permanently filled and one was filled by a consultant on a locum contract. An additional two consultant neonatologist positions had recently been approved for the hospital.

Outside core working hours the hospital had a rota whereby a consultant neonatologist was on call from home one in every five nights. Three non-consultant hospital doctors, two at registrar grade and one at senior house officer grade, were on call onsite in the hospital from 16:00-22:00hrs. Thereafter, two non-consultant

hospital doctors, one at registrar grade and one at senior house officer grade, were on call onsite in the hospital from 22:00-08:00hrs.

Medical, midwifery and nursing staff who spoke with inspectors confirmed that all consultants in the speciality of obstetrics, anaesthesiology and neonatology were accessible during and outside core working hours. Staff informed inspectors that, when called to attend, consultants were onsite in the hospital within 30 minutes.

2.2.3 Training and education of multidisciplinary staff

Mandatory training requirements

The hospital had defined mandatory training requirements for midwifery, nursing and medical staff. Clinical staff were expected to undertake training aligned to their clinical responsibilities for example in relation to basic life support, neonatal resuscitation, management of obstetric emergencies and electronic fetal monitoring.

Medical staff in obstetrics and midwifery staff were required to undertake multidisciplinary training in the management of obstetric emergencies and fetal monitoring every two years. Medical, midwifery and nursing staff were required to undertake training in neonatal resuscitation and basic adult resuscitation every two years. Medical staff in neonatology were required to undertake training in neonatal resuscitation prior to staffing the on-call neonatology rota and every two years thereafter.

In addition, medical staff in obstetrics, midwifery and nursing staff received training in the Irish Maternity Early Warning System and sepsis screening when starting employment in the hospital. These staff were expected to attend update sessions and workshops in relation to the Irish Maternity Early Warning System and sepsis when scheduled.

Practical training sessions in the form of skills and drills in obstetric emergencies were conducted every week by the clinical skills facilitator in the Birthing Suite. Impromptu skills and drills in obstetric emergencies were conducted infrequently in the postnatal ward. Hospital management had identified this as a focus for improvement.

Uptake of mandatory training

Training records were stored electronically and were accessible by all clinical nurse and midwife managers in the clinical areas inspected. Training records provided to inspectors in relation to fetal monitoring indicated that 90% of midwives and 42% of medical staff in obstetrics were up to date with training in electronic fetal monitoring.

All medical staff in neonatology, 78% of nurses and 77% of midwives were up to date with training in neonatal resuscitation. Eighty-six percent of medical staff in

obstetrics were up to date with multidisciplinary training in the management of obstetric emergencies. However, only 28% of midwives and 11% of nurses were up to date with this training. Fifty-nine percent of nurses and 65% of midwives were up to date with training in basic life support. Data was not available in respect of the uptake of this training by medical staff in obstetrics.

Overall, inspectors found that the hospital was partially compliant with standard 6.3 of the National Standards for Safer Better Maternity Services. Hospital management should ensure that staff are facilitated to meet mandatory training requirements, appropriate to their scope of practice; in line with National Standards and that the uptake of training by midwifery, nursing and medical staff is documented.

Orientation and training of new staff

New midwifery, nursing and medical staff employed at the hospital were provided with a corporate and specialty specific orientation and induction when commencing employment in the hospital. The orientation and induction programme was of three weeks duration and the stated aim was to familiarise new staff with the physical infrastructure, layout and activity of the hospital. Speciality specific induction and information booklets were also provided to new midwifery, nursing and medical staff. The hospital had a system for documenting competency development by nursing and midwifery staff and this was observed in each of the clinical areas inspected.

Newly employed midwifery and nursing staff in the Birthing Suite and Operating Theatre Department were mentored by a clinical skills facilitator. Hospital management informed inspectors that additional funding had been approved to appoint a full time clinical skills facilitator to the Operating Theatre Department. A cardiotocograph review meeting was held every three weeks[6,7] where cardiotocography[‡‡] tracings were reviewed and discussed by a multidisciplinary team.

Other training and education opportunities for staff

The hospital was recognised as a site for undergraduate and postgraduate midwifery training and higher specialist training for doctors in the specialties of obstetrics and gynaecology, anaesthesiology and neonatology. Doctors undertaking higher specialist training in obstetrics and gynaecology and anaesthesiology had competency-based assessments for procedural and technical skills. Meetings to provide teaching and learning opportunities for non-consultant hospital doctors in

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

obstetrics, anaesthesiology and neonatology were held regularly. Inspectors were told that informal education sessions were conducted in the Operating Theatre Department between 08:00 and 08:30hrs when activity permitted.

Medical staff in the different specialities of obstetrics, anaesthesiology and neonatology told inspectors they received very good support from consultants and that they had no hesitation about contacting a consultant during or outside core hours to discuss a clinical case or to ask for advice and support.

Grand rounds[§§] were held every week in the hospital and medical, midwifery and nursing staff were encouraged to attend. Arrangements were in place for medical, midwifery and nursing staff from South Tipperary General Hospital, University Hospital Kerry and University Hospital Waterford to attend via video link.

At the time of inspection, the majority of nursing staff in the Neonatal Unit had undertaken postgraduate training in neonatal intensive care nursing.

Midwives were facilitated to maintain the necessary clinical skills and competency through the regular internal rotation to the Birthing Suite, antenatal and postnatal wards. However, medical, midwifery or nursing staff did not rotate between the four maternity services in the South/South West Hospital Group.

Table 4 lists the National Standards relating to workforce focused on during this inspection and key findings in relation to the hospital's level of compliance with the National Standards monitored during this inspection.

[§§] Grand rounds are methods of medical education and inpatient care, consisting of presenting the medical problems and treatment of a particular patient to an audience consisting of doctors, residents, and medical students.

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:** Compliant
Standard 6.3 Maternity service providers ensure their workforce has the competencies and training required to deliver safe, high-quality maternity care. **Key findings:** Not all midwifery and medical staff were up to date with mandatory training requirements. **Judgment:** Partially compliant
Standard 6.4 Maternity service providers support their workforce in delivering safe, high-quality maternity care. **Judgment:** Compliant

3.0 Safety and Quality

Inspection findings in relation to safety and quality will be presented under the themes of the National Standards 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 this inspection, inspectors looked at 11 National Standards in relation to safe and effective care. Of these, the Cork University Maternity Hospital was compliant with nine National Standards and substantially 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, this inspection 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

Cork University Maternity Hospital provided a range of general and specialist maternity services for women with normal and high-risk pregnancies. In line with the National Standards, each woman and infant had a named consultant with clinical responsibility for their care.

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

The hospital had established pathways for the assessment, management and admission of pregnant and postnatal women presenting with obstetric complications 24-hours a day, seven days a week. This ensured that women who were at risk of developing complications during pregnancy, at birth and in the postnatal period were cared for in the most appropriate setting. The hospital had also developed a supported care pathway[***] as recommended in the National Maternity Strategy for women at lower risk of developing pregnancy-related complications. Assessment services for pregnant and postnatal women included:

- antenatal clinics – midwife-led and medical-led
- Emergency Room
- Early Pregnancy Assessment Unit.

All pregnant women who attended the hospital for their first antenatal appointment were risk assessed by a consultant obstetrician. Women at high risk of developing complications or who had complex obstetric or medical needs were identified, and their care was planned by the multidisciplinary team and provided in the most appropriate setting. Women who booked for care in the hospital were assigned to one of two care pathways, midwifery-led or medical-led care.

- Midwifery-led care: Women with normal risk were cared for by midwives. Women were offered the choice of midwifery led care at their initial booking visit. If complications developed during pregnancy, birth or the postnatal period the woman was referred to the consultant obstetrician. Antenatal care was provided in the hospital or in outreach clinics in the community. Women gave birth in the hospital and postnatal care was provided by midwives in the postnatal ward. Midwifery-led antenatal clinics were held in Bantry, Carrigaline, Mitchelstown and Mallow. A medical-led clinic was held every

[***] This care pathway is intended for normal-risk women and babies, with midwives leading and providing care within a multidisciplinary framework. Responsibility for the co-ordination of a woman's care is assigned to a named Clinical Midwife Manager, and care is provided by the community midwifery team, with most antenatal and postnatal care being provided in the community and home settings. The woman can exercise a choice with her healthcare professional with regard to the birth setting, which may be in an Alongside Birth Centre in the hospital, or at home.

month where women planning to have a home birth were reviewed and assessed to determine their suitability for that model of care.

- Medical-led care: Care in this pathway was led by a consultant obstetrician. Women at greater risk of experiencing pregnancy-related complications were cared for within a multidisciplinary team framework by midwives and obstetricians. Women were assigned a named consultant obstetrician at their first antenatal appointment and antenatal care was provided in the hospital. Women gave birth in the hospital and postnatal care was provided by obstetricians and midwives in the postnatal ward.

This availability of different care pathways, based on women's risk profile is in line with the National Standards.

The hospital had an Early Pregnancy Assessment Unit with clearly documented pathways where women in early pregnancy with suspected complications were reviewed and assessed by the obstetric team. The unit was open Monday to Friday from 08:00hrs to 13:00hrs. Women were referred to the unit by their general practitioner or obstetric team. The unit was staffed by midwives trained in ultrasonography supported by the multidisciplinary team.

The hospital provided access to fetal ultrasound scanning services in accordance with the timelines outlined in the National Standards. Ultrasound scans were conducted by midwives trained in ultrasonography, senior registrars with qualifications in early and late pregnancy scanning and consultant obstetricians.

Admission pathways

Pregnant women of any gestation who presented outside of scheduled appointments or as an emergency during and outside core working hours attended for review and assessment to the Emergency Room, which was located on the ground floor of the hospital. Women self-referred, were referred by their general practitioner or presented via ambulance. On presentation to the Emergency Room, pregnant women were triaged by a midwife using the Manchester Triage System[†††] and were reviewed by a member of the obstetric team. A non-consultant hospital doctor at senior house officer grade was rostered to the Emergency Room from 08:00-20:00hrs Monday to Friday. Outside of these hours the women were reviewed and assessed by the on-call obstetric senior house officer.

Women presenting to the Emergency Room in labour were transferred to the Birthing Suite.

[†††] The Manchester Triage System is one of the most commonly used triage systems in Europe. It enables nurses to assign a clinical priority to patients, based on presenting signs and symptoms, without making any assumption about the underlying diagnosis.

The hospital was co-located with a general hospital, Cork University Hospital, so pregnant or postnatal women who presented with a surgical or medical conditions unrelated to pregnancy were referred to medical or surgical specialists for review and assessment in the general hospital.

3.1.2 Access to specialist care and services for women and newborns

Access to clinical specialists

Women booked for maternity care in the hospital were referred by the obstetric team or midwife at their first antenatal appointment to a number of specialised clinics in or outside the hospital.

Specialised consultants were available in Cork University Maternity Hospital in the specialities of respiratory medicine, cardiology, endocrinology, psychiatry, nephrology and general surgery. Depending on their risk factors or underlying medical condition women were referred at their first antenatal appointment to a number of specialised clinics in the hospital including perinatal medicine, diabetic, haematology, fetal medicine, a multiple birth, early pregnancy and preconceptual clinics. All these clinics were multidisciplinary and were led by consultants in the specialties of obstetrics, endocrinology, haematology, nephrologist and cardiology employed in the hospital or off site in Cork University Hospital or the South Infirmary Victoria University Hospital.

Clinical staff had access to and advice from consultant microbiologists and haematologists located in Cork University Hospital 24-hours a day, seven days a week. The hospital also accessed specialist scanning[‡‡‡] and radiology services[§§§] in Cork University Hospital.

During the inspection, inspectors were informed that the South/South West Hospital Group had recently appointed two consultants, a perinatal pathologist and a perinatal psychiatrist to provide specialist services in pathology and psychiatry to the maternity services across the hospital group.

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 providing pain

[‡‡‡] Computed axial tomography is an imaging procedure that uses special x-ray equipment to create detailed pictures, or scans, of areas inside the body. It is sometimes called computerized tomography or computerized axial tomography.
[§§§] Interventional radiology is the use of medical imaging techniques to guide doctors as they diagnose and treat problems with blood vessels and lymph vessels.
[****] 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.

relief such as epidural anaesthesia for women in labour and anaesthesia for women who require caesarean section and other surgery during and post birth.

Guidelines and National Standards[1,8] 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. The hospital did not have a dedicated anaesthetic pre-assessment clinic. However, inspectors were told that there was a process in place whereby women who presented at their first antenatal appointment or subsequent antenatal visits with risk factors for anaesthesia were referred for review to the anaesthetic team. It was also the established practice that when a woman with known anaesthetic risks was admitted to the Birthing Suite and Maternity Ward the obstetric and midwifery staff would inform the anaesthesiologist on duty.

Staff nurses and midwives, some of whom had undertaken specialist training, provided assistance to the anaesthesiologist and provided post anaesthetic care. During the inspection, inspectors were informed that there was potential for delay in administering anaesthesia and in the management of dedicated anaesthetic emergencies because there of the lack of a dedicated anaesthetic nurse or midwife. The hospital has identified this as a risk and it was recorded on the hospital's risk register. Following this inspection, any identified deficiencies in relation to specialist training for midwives and nurses in relation to anaesthetic care should be addressed by the hospital.

Critical care

The National Standards recommend that specialised birth centres have a high-dependency or observation unit to manage a clinically deteriorating woman. The hospital had a High Dependency Unit located in the Birthing Suite which comprised of three beds. Pregnant or postnatal women who required invasive monitoring or close observation, for example women with pre-eclampsia or obstetric haemorrhage, were monitored in this unit. These women were reviewed jointly by the consultant obstetrician and anaesthesiologist every day or more frequently if required.

The hospital did not have a level 3 Intensive Care Unit[††††8] onsite but it was co-located with Cork University Hospital and formal arrangements were in place to transfer critically ill pregnant or postnatal women to the level 3 Intensive Care Unit in Cork University Hospital when required. Structurally, both hospitals were linked by an internal corridor and this facilitated the timely transfer of women.

[††††] Level 3 critical care 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 hospital had implemented the Irish Maternity Warning System to assess, monitor and detect clinical deterioration in pregnant and postnatal women up to 42 days post birth and compliance with its use was audited. Staff who spoke with inspectors had a clear understanding of the escalation process and knew that this should be in line with the hospital's Irish Maternity Warning System escalation policy. The designated person to call when escalating concerns depended on the triggers activated on the Irish Maternity Warning System. The designated person was the obstetric senior house officer, obstetric registrar and or consultant obstetrician, and or an anaesthesiologist.

Neonatal care

The hospital had a level 3 tertiary Neonatal Unit[‡‡‡‡] where the full spectrum of neonatal care was provided to term and preterm infants who were critically unwell. The hospital accepted newborns that required complex neonatal care from other maternity units in the South/South West Hospital Group and other maternity units across the country. Therapeutic cooling[§§§§] for neonatal encephalopathy[*****] was also provided in the Neonatal Unit for infants born in the hospital and those transferred from other maternity units.

3.1.3 Communication

The hospital had a clear process in place to communicate and share information with midwifery, nursing and medical staff. Cork University Maternity Hospital had implemented the Maternal and Newborn Clinical Management System which is an electronic health record, for all women and babies using the maternity services in the hospital.

Communication books were used to share information and provide feedback from clinical incidents, meetings and safety alerts relating to medications and medical equipment. Information about safety alerts were also shared at clinical handover and displayed on noticeboards in clinical areas. Inspectors observed examples of these alerts in the different clinical areas inspected. In accordance with best practice recommendations,[†††††9] a safe surgery checklist was used for all elective and

[‡‡‡‡] Level 3 neonatal units (tertiary units) provides the full spectrum of neonatal care to term and pre-term infants who are critically unwell. There should be sufficient clinical throughput to maintain clinical skills and expertise, with a minimum of 100 infants BW <1500g and/or 100 infants requiring assisted ventilation / CPAP critical care.
[§§§§] 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. WBNC is provided in the large tertiary maternity hospitals in Dublin and Cork.
[*****] Neonatal encephalopathy (NE) is a broad term for neurological dysfunction in an infant and can stem from a wide variety of causes, including hypoxic-ischemic injury, infection, neonatal stroke, traumatic birth, and more.
[†††††] 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

emergency surgical procedures in the hospital's operating theatres and the hospital audited compliance with its use.

Emergency response teams

The hospital had emergency medical response teams in place 24 hours a day, seven days a week to provide an immediate response to obstetric and neonatal emergencies. In line with national guidelines, information was shared using the Identify-Situation-Background-Assessment-Recommendation communication tool.[‡‡‡‡‡10]

At the time of inspection, there was an established procedure in place for requesting the attendance of designated response teams for obstetric and neonatal emergencies.

Inspectors were informed that formal and informal debriefing sessions occurred after an emergency and all serious clinical incidents. Formal debriefing sessions occurred as of part of the after action review process used in the hospital.

Multidisciplinary handover

There were formal arrangements in place for clinical handover in the Birthing Suite. Consultant-led clinical handover took place every morning where the on-call obstetric team handed over to the obstetric team coming on duty. The Identify-Situation-Background-Assessment-Recommendation communication tool was used during handover to communicate information about women and babies.[10]

Inspectors were informed that the on-call consultant obstetrician conducted daily ward rounds with members of the obstetric team in the Birthing Suite, antenatal and postnatal wards during and outside core working hours including Saturdays, Sundays and public holidays. Consultant obstetricians who were not on call also conducted ward rounds every day to review women they had clinical responsibility for.

A multidisciplinary safety huddle[§§§§§11] was also held every day at 10:30hrs in the Birthing Suite where activity levels, risks and other clinical issues were discussed among senior clinical midwife managers, hospital management and members of the obstetric team. Staff who spoke with inspectors stated that members of the

everyone is familiar with the case and that important steps are not forgotten. Surgical checklists work to improve patient safety during surgery.

[‡‡‡‡‡] The ISBAR (Identify -Situation-Background-Assessment-Recommendation) technique is a way to plan and structure communication. It allows healthcare staff an easy and focused way to set expectations for what will be communicated and to ensure they get a timely and appropriate response.

[§§§§§] Safety huddles involving the multidisciplinary team when used improve communication, situational awareness, and care for women and babies.

neonatology or anesthetic teams did not routinely attend the multidisciplinary clinical handover or the daily huddle.

Multidisciplinary safety huddles should include input from obstetric, anesthetics, paediatric, midwifery, operating theatre and support staff. Following this inspection, the hospital should review the arrangements in place for multidisciplinary clinical handover and huddle to ensure that all specialties involved in the care of pregnant and postnatal women share information to identity potential clinical concerns and to improve the safety of care provided in the maternity unit.

3.1.4 Written policies, procedures and guidelines

The hospital had implemented a number of national policies, procedures and guidelines, endorsed by the Maternity Directorate in relation to obstetric emergencies, for example major obstetric haemorrhage, shoulder dystocia, umbilical cord prolapse and pre-eclampsia. The hospital had also implemented National Clinical Effectiveness Committee****** guidelines in relation to sepsis, clinical handover in maternity services and the Irish Maternity Early Warning System.

Policies, procedures and guidelines were accessible electronically to all staff in the clinical areas via a controlled document management system. However, during the inspection, inspectors found that some staff could not access some policies, procedures and guidelines relating to obstetric emergencies easily on the document management system. Following this inspection, hospital management need to ensure that all staff has the necessary training and skills to access relevant policies and procedures and guidelines when required.

The maternity unit had a standardised procedure for the estimation and measurement of maternal blood loss in the Birthing Suite and the Operating Theatre Department.

3.1.5 Maternity service infrastructure, facilities and resources

The hospital had 150 beds which includes the High Dependency Unit and Induction Room in the Birthing Suite. There are 118 inpatient beds dedicated for antenatal and postnatal care. The hospital was purpose built twelve years ago following the amalgamation of maternity services from Erinville Hospital, St. Finbarr's Maternity Hospital, Bon Secours Maternity Unit and gynaecology services from Cork University Hospital. It is co-located with a tertiary referral adult acute hospital, Cork University Hospital. The overall design and infrastructure was spacious, bright and welcoming.[12]

****** Guidelines produced by the national clinical effectiveness committee have been formally mandated by the Minister of Health.

Assessment Areas

All women attending the maternity unit outside of scheduled appointments presented to the Emergency Room. The Emergency Room was located on the ground floor of the hospital. It comprised of a triage room and four assessment cubicles that were fully equipped to assess maternal and fetal wellbeing. The unit had a single room used for isolation purposes if needed.

Postnatal ward

On the day of inspection, inspectors visited a postnatal ward with 28 beds and cots. This ward comprised four four-bedded rooms, two two-bedded rooms, seven single rooms and one isolation room. All of the rooms had shower and toilet facilities en-suite.

Birthing suite

The Birthing Suite had 12 spacious single birthing rooms with bathroom facilities en-suite, a birthing pool room and a five bedded room used for the induction of labour. The unit also had a High Dependency Unit with three beds equipped to care for pregnant and postnatal women who required invasive cardiac monitoring and close observation. Staff in the Birthing Suite communicated regularly throughout the day with the Operating Theatre Department to keep them informed of any women with higher risk of complications.

Operating theatres for obstetrics and gynaecology

The hospital's Operating Theatre Department was adjacent to the Birthing Suite. The hospital had a designated operating theatre for obstetric emergencies 24-hours a day seven days a week. The Operating Theatre Department had three operating theatres and a recovery area for women undergoing obstetric or gynaecological surgery. During and outside core working hours, emergency surgery such as emergency caesarean sections were performed in one of these operating theatres. A fourth operating theatre was not in use at the time of inspection. However, the fourth operating theatre was used for coinciding emergencies when the other three operating theatres were in use. Staff told inspectors this occurred very rarely.

Neonatal unit

Cork University Maternity Hospital had a level 3 (tertiary) neonatal unit that provided the full range of care to critically ill term and pre-term infants. The Neonatal Unit had 40 cots comprising of 18 neonatal intensive care cots including two isolation cots, four High Dependency Care cots and 18 Special Care Baby cots. The unit accepted infants from the other three maternity units in the hospital group, University

Maternity Hospital Limerick and from other maternity units around the country as required. The design and layout of the Neonatal Unit was spacious.

Laboratory services

Blood and blood replacement products were accessible, when required, in an emergency for women and infants. Urgent microbiological and haematological advice and services were available during and outside core working hours, at weekends and public holidays.

At the time of inspection the hospital did not have a dedicated infection prevention and control nurse. Hospital managers informed inspectors that they were in the process of recruiting a suitably, qualified person for the position to oversee all aspects of infection prevention and control at the hospital.

3.1.6 Maternity service equipment and supplies

Emergency resuscitation equipment for women and babies was available in the clinical areas inspected. Checklists for the resuscitation equipment were reviewed by inspectors and these confirmed that emergency equipment was checked weekly and daily as per hospital policy. Emergency supplies and relevant medications were readily available in the clinical areas inspected to manage obstetric emergencies such as maternal haemorrhage, eclampsia and neonatal resuscitation. Fetal monitoring equipment including cardiotocography machines viewed by inspectors was labelled to indicate that they had been serviced.

Table 5 on the next page lists the National Standards relating to effective care and support focused on during this inspection and key findings in relation to the hospital's level of compliance with the National Standards monitored during this inspection.

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:** Compliant
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:** Compliant
Standard 2.3 Women and their babies receive integrated care which is coordinated effectively within and between maternity and other services. **Judgment:** Compliant
Standard 2.4 An identified lead healthcare professional has overall clinical responsibility for the care of each woman and that of her baby. **Judgment:** Compliant
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:** Compliant
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:** Compliant
Standard 2.8 The safety and quality of maternity care is systematically monitored, evaluated and continuously improved. **Judgment:** Compliant

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, this 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.

3.2.1 Maternity service risk management

Cork University Maternity Hospital had systems in place to identify and manage risks in relation to the maternity services. These risks were recorded on the hospital's corporate risk register. The corporate risk register was reviewed and updated by hospital management every four months. The risk register detailed the impact of the risks identified, existing control measures and other actions required to militate against the risk. Identified risks were rated numerically. Risks that could not be managed at hospital level were escalated to the hospital group.

Risks recorded in the hospital's corporate risk register relevant to this monitoring programme included risks associated with:

- nursing and midwifery staffing levels
- lack of a dedicated infection prevention and control nurse
- no formal clinical pathway for referral of high-risk pregnant women to obstetric anaesthesiologist
- staff familiarity with and training for the maternal and newborn clinical management system.

The hospital was engaged in a continuous recruitment campaign at a national and international level to address the risks in relation to midwifery and nursing shortages. Overtime and redeployment of staff, where appropriate, was also undertaken by hospital management.

While the hospital did not have a formal clinical pathway for the referral of high-risk pregnant women to an obstetric anaesthesiologist, the hospital had appointed a lead consultant for obstetric anaesthesiology and had received additional funding for two further consultant anaesthesiologists with an interest in obstetric anaesthesiology. They also had a process in place whereby women who presented at their first antenatal appointment or subsequent antenatal visits with risk factors for

anaesthesia were referred for review to the anaesthetic team during the antenatal period.

Additional training was introduced in the hospital to familiarise and train staff in how to use the maternal and newborn clinical management system. Training and education on the system was also provided to staff commencing employment during the induction and orientation programme.

Any identified deficiencies in relation to specialist training for midwives and nurses in relation to anaesthetic care should be addressed by the hospital.

Clinical incident reporting

Inspectors found that there was an established system for reporting clinical incidents. Staff who spoke with inspectors could describe the process for reporting clinical incidents and all were aware of their responsibility to report such incidents.

Clinical incidents were tracked and trended and where improvements were required, quality improvement plans were put in place to address these. In line with national guidelines, patient safety incidents were reported on the National Incident Management System.[††††††] However, hospital management told inspectors that because of a resource issue not all clinical incidents were reported to the National Incident Management System within the required 30 day time frame.[13] Hospital management informed inspectors that high risk incidents were prioritised and reported within the required time frame and that the hospital were reviewing resources to enable the timely reporting of all incidents to the National Incident Management System.

The Directorate's Executive Management Committee and Quality and Patient Safety Committee had oversight of all clinical incidents and serious reportable events reported in the hospital. Documentation reviewed by inspectors showed that meetings of these committees were well attended.

Staff told inspectors that feedback from clinical incidents was not always shared and discussed with staff in the clinical areas. Effective feedback from clinical incidents are essential for the promotion of a positive patient safety culture, for learning to occur and to drive improvements in the delivery of safe, quality care.[14,15] Following this inspection, the hospital should implement a process to ensure that feedback from clinical incidents are shared will all relevant staff at hospital, departmental and ward or unit level.

[††††††] The National Incident Management System is a system where incidents are report annually. The system is used to improve patient and service user experience.

Feedback from women

The hospital had a formalised process to monitor compliments and respond to complaints received from women who used the maternity service. Women's complaints and feedback were reviewed and discussed at the Quality and Patient Safety Committee meetings.

In 2017, the hospital group commissioned a survey that explored women's experiences of maternity care in the South/South West Hospital Group. The findings of this survey indicated that the majority of women were satisfied with the care provided in the hospital during pregnancy, labour and birth, and after birth. The hospital should proceed with the implementation of the recommendations from this survey. Recommendations included providing women with choice of models of care, improving the waiting times in antenatal clinics, involving women in the decisions about their care, using water for pain management in labour, providing supports for women following caesarean section or a difficult birth and establishing pathways of care in relation to perinatal mental health.

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.[16] This data is gathered nationally by the HSE's Office of the National Women and Infants Health Programme and the National Clinical Programme for Obstetrics and Gynaecology. This information also allows individual maternity units and maternity hospitals to benchmark performance against national rates over time.

Hospital management monitored, analysed and responded to information from multiple sources including serious reportable incidents, incident reviews, legal cases, risk assessments, complaints, audits and patient experience surveys to be assured about the effectiveness of the maternity service. The Irish Maternity Indicator System data was reviewed every two weeks at the Maternity Directorate's Executive Management Committee meeting and every two months at the Directorate's Quality and Safety Executive Committee meetings.

Cork University Maternity Hospital compared and benchmarked their performance against national rates for a variety of metrics. The hospital collected and published data every month on the 17 metrics included in the Maternity Patient Safety Statements. This data measured clinical activity, major obstetric events, mode of birth and clinical incidents. The hospital used the Robson 10-Group

Classification[‡‡‡‡‡‡] to classify and compare caesarean sections rates in the hospital and with other maternity hospitals and units.

Hospital management informed inspectors that the hospital's performance data including data submitted for the Irish Maternity Indicator System, National Perinatal Epidemiology Centre[§§§§§§] and, where relevant, Vermont Oxford Network[*******] were reviewed, considered, discussed and compared with similar data from the other similar sized maternity units at the multidisciplinary perinatal mortality and morbidity meeting.

Clinical audit

The hospital had an annual clinical audit plan. Clinical audit activity was overseen by the Quality and Patient Safety Committee. Audits were completed by medical, nursing and midwifery staff. Audits completed in 2018, relevant to the monitoring programme included:

- negative pressure wound therapy system for women with an elevated body mass index
- Irish Maternity Early Warning System escalation and response
- oxytocin by protocol for the third stage of labour
- fetal heart monitoring cardiotography assessment and co-sign
- fetal heart monitoring pre and post pethidine
- maternal sepsis.

Audits planned for 2019 included:

- Irish Maternity Early Warning System escalation and response
- blood transfusion service during a major haemorrhage event
- compliance with the hospital's antimicrobial guideline for pyrexia in labour
- massive obstetric haemorrhage
- operating theatre prescription audit.

Quality improvement plans were developed following audits to address any identified opportunities for improvement. Examples included quality improvement plans relating to vaginal birth after caesarean section, Irish Maternity Early Warning Score and the ordering and administering of oxytocin by protocol for the third stage of labour.

[‡‡‡‡‡‡] The Robson classification is a system of classifying birth into 10 groups based on five obstetric characteristics that are routinely collected in all maternity hospital and units (parity, previous caesarean section, gestational age, onset of labour, fetal presentation and the number of fetuses).
[§§§§§§] The National Perinatal Epidemiology Centre conducts on-going national audits of perinatal mortality, maternal morbidity and home births in Ireland.
[*******] The Vermont Oxford Network is a voluntary collaborative group of health professionals committed to improving the effectiveness and efficiency of medical care for newborn infants and their families through a coordinated program of research, education, and quality-improvement projects.

Annual clinical report

The Maternity Directorate published a comprehensive annual clinical report that detailed maternal and neonatal outcomes, service activity and initiatives at Cork University Maternity Hospital and the other three maternity units within the Maternity Directorate. Cork University Maternity Hospital attended the Irish Annual Clinical Reports Meeting, organised by the Institute of Obstetricians and Gynaecologists. At this yearly meeting the hospital's annual clinical report is assessed by an external assessor and peer-reviewed to enable benchmarking of performance against similar sized units.

Maternal and perinatal morbidity and mortality multidisciplinary meetings

Multidisciplinary maternal and perinatal mortality and morbidity meetings were held every month in the hospital. Learning from perinatal mortality and morbidity meetings was shared with staff at clinical handover.

The hospital used information on clinical outcomes to identify potential risks to the safety of women and babies, inform audit activity and opportunities for improvement. For example, the 2017 Irish Maternity Indicator System report identified the hospital was an outlier for the incidents of obstetric blood transfusions. This data was discussed at the different forums at Maternity Directorate and hospital level. The hospital had introduced a change in practice to address the incidents of obstetric blood transfusions whereby there was an increased focus on monitoring the woman's iron levels, detecting and correcting low levels of iron during the antenatal period.

3.2.3 Quality improvement initiatives

The hospital did not have a structured and resourced quality improvement programme but they had implemented a number of quality improvement initiatives aimed at improving the quality and safety of the maternity services at Cork University Maternity Hospital.

Quality improvement initiatives introduced in the hospital included the implementation of the:

- maternal and newborn clinical management system for all women and babies using the maternity services in the hospital
- 'Fresh Eyes' initiative used in the Birthing Suite where a second midwife, reviewed the cardiotocograph, every hour, of all women having continuous fetal monitoring during labour
- After Action Review: the hospital adopted the after action review process developed by the HSE. This process was undertaken before or soon after an event and sought to understand what went well and why and what didn't go well and why.

- use of negative pressure wound therapy system for women with an elevated body mass index. This initiative won the 'Best Improvement in Patient Safety' award
- use of care bundles relating to the use of silicone catheters
- standardisation of equipment and supplies on maternal resuscitaires in each theatre in the Operating Theatre Department for easier identification and access.

Table 6 lists the National Standards relating to safe care and support focused on during this inspection and key findings in relation to the hospital's level of compliance with the National Standards monitored during this inspection.

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:** Compliant
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:** Compliant
Standard 3.4 Maternity service providers implement, review and publicly report on a structured quality improvement programme. **Key findings**: Undertaking quality improvement work but did not have a structured and resourced quality improvement programme. **Judgment:** Substantially compliant
Standard 3.5 Maternity service providers effectively identify, manage, respond to and report on patient safety incidents. **Key findings:** Not all patient safety incidents on the National Incident Management System were reported within 30 days of occurrence. **Judgment:** Substantially compliant

4.0 Conclusion

Maternity services should have effective leadership, governance and management arrangements in place to ensure best practice and safe service provision. 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.

Women and their babies should have access to safe, high-quality care in a setting that is most appropriate to their needs. Inspectors found that the Cork University Maternity Hospital was compliant or substantially complaint with the majority of the National Standards that were focused on during this inspection.

Cork University Maternity Hospital had a clearly defined and effective leadership, governance and management structure. There was good oversight of the quality and safety of services by senior managers at the hospital and used multiple sources of information were used to identify opportunities for improvement. The hospital's senior management team monitored performance data including clinical outcomes, service user feedback and clinical incidents and benchmarked performance against other similar sized hospitals. Hospital management was actively working to optimise maternal care and to progress implementation of the National Standards.

At the time on the inspection, there was evidence that there were collaborative working arrangements between Cork University Maternity Hospital and the other maternity units in the South/South West Hospital Group which enabled the sharing of expertise and clinical services. This was evident by the policy and procedure relating to the inter-hospital transfer of women and babies setting out the mandatory acceptance and retrieval of women and babies to and from Cork University Maternity Hospital and the other maternity units within the hospital group. However, a formalised network with a single governance structure, as recommended in the National Maternity Strategy, was not fully implemented but the hospital and South/South West Hospital Group were making progress on the implementation of a managed clinical maternity network. The hospital group need to continue the implementation of the maternity network.

The hospital employed medical staff in the specialties of obstetrics, paediatrics, neonatology and anaesthesiology that were available on site to provide care to women and babies on a 24 hour, seven day a week basis. The hospital had clearly defined training requirements for clinical staff in relation to fetal monitoring, adult and neonatal resuscitation and multi-professional training for the management of obstetric emergencies. However, the hospital needs to ensure that mandatory

training is completed by medical, midwifery and nursing staff within recommended time frames in line with National Standards.

The hospital had procedures and processes in place to identify women at high risk of complications and to ensure that their care was provided in the most appropriate setting. Fetal ultrasound scans were offered to all pregnant women in accordance with the National Standards. Effective arrangements were in place to detect and respond to obstetric emergencies and to provide or facilitate on-going care to ill women and their babies. There was evidence that quality improvement initiatives had been implemented in the hospital but the hospital with support from the hospital group should implement a structured and resourced quality improvement programme in line with National Standards to further enhance quality and safety.

Following this inspection the hospital needs to address the opportunities for improvement identified in this report and to continue to progress with the transition to a maternity network for the enhancement of a safe, high-quality maternity services at Cork University Maternity Hospital.

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