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**Unannounced Infection Prevention/Hygiene
Augmented Care Inspection**

Belfast Health and Social Care Trust

Year 2 Inspection

Royal Victoria Hospital Neonatal Unit

16 and 17 September 2015

Assurance, Challenge and Improvement in Health and Social Care

www.rqia.org.uk

The Regulation and Quality Improvement Authority

The Regulation and Quality Improvement Authority (RQIA) is the independent body responsible for regulating and inspecting the quality and availability of health and social care (HSC) services in Northern Ireland.

RQIA's reviews and inspections are designed to identify best practice, to highlight gaps or shortfalls in services requiring improvement and to protect the public interest.

Our Hygiene and Infection Prevention and Control inspections are carried out by a dedicated team of inspectors, supported by peer reviewers from all trusts who have the relevant experience and knowledge. Our reports are available on the RQIA website at www.rqia.org.uk.

Inspection Programme

The CMO's letter (HSS MD 5/2013) endorsed the use of the Regional Infection Prevention and Control Audit Tools for Augmented Care Settings by all Trusts in Northern Ireland in the relevant clinical areas www.rqia.org.uk.

- Governance Assessment Tool;
- Infection Prevention and Control Clinical Practices Audit Tool;
- Neonatal Infection Prevention and Control Audit Tool;
- Critical Care Infection Prevention and Control Audit Tool;
- Augmented Care Infection Prevention and Control Audit Tool

The introduction of this suite of audit tools is follow-on from development of the existing regional healthcare hygiene and cleanliness standards and audit tool, developed and disseminated in 2011. Both sets of tools should be used in conjunction with each other. A 'Guidance and Procedural Paper for Inspections in Augmented Care Areas' has been developed which outlines the inspection process www.rqia.org.uk.

The inspection programme for augmented care covers a range of specialist facilities and a rolling programme of unannounced inspections has been developed by RQIA to assess compliance with both of these sets of audit tools.

RQIA also carries out announced inspections. These examine the governance arrangements and systems in place to ensure that infection prevention and control and environmental cleanliness policies and procedures are working in practice.

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1.0 Inspection Summary

The three year improvement programme of unannounced inspections to augmented care areas commenced in the Royal Jubilee Neonatal Intensive Care Unit (NICU), on 18 and 24 July 2013.

RQIA use audit tools as an assessment framework to build progressive improvement over the three-year inspection cycle. Compliance scores for the first inspection are 85 per cent, rising to 95 per cent by the end of the third inspection.

The findings of the inspection indicated that the unit achieved year two compliance rate of over 90 per cent in:

- The Regional Healthcare Hygiene and Cleanliness Standards and Audit Tool.

As a result, this tool was not included as part of the year two inspection programme.

The NICU did not achieve year two set compliance levels in the Regional Neonatal Infection Prevention and Control Audit Tool and the Regional Infection Prevention and Control Clinical Practices Audit Tool in year one. Therefore an unannounced inspection was undertaken to NICU on 16 and 17 September 2015 as part of the 3 year improvement programme. The inspection team comprised of four RQIA inspectors. Details of the inspection team and trust representatives who received feedback can be found in section 6.

The Neonatal Unit is a combined neonatal and special care baby unit. It is based in the Royal Jubilee Maternity Hospital located on the Royal Group of Hospitals site in Belfast. This unit is funded for nine level one cots, seven level two cots and 11 level three cots.

The report highlights strengths as well as areas for further improvement, and includes recommendations and a quality improvement action plan.

Overall the inspection team found evidence that the NICU at the Royal Jubilee Neonatal Intensive Care Unit was working to comply with the regional standards and audit tools.

Inspectors observed:

- Full compliance for the section on aseptic non touch technique (ANTT)

Inspectors found that the key areas for further improvement were:

- Completion of documentation in regard to invasive devices
- Audit of practice to ensure compliance with policies and guidelines

Inspectors observed and were informed of the following areas of good practice:

- Neonatal Network Northern Ireland (NNNI) questionnaire for parents to complete post discharge on “ Your experience of Neonatal Care “
- In 2014, the Control of Serious Infection group in NICU won the Chairman’s Award for continuous improvement
- Representatives from the unit are presenting at Vermont Oxford Network (VON) in Chicago. The poster demonstrates the actions taken to reduce the delay in administration of antibiotics to neonates
- Unit staff have developed a comprehensive end of cot documentation entitled “ New Nursing Record and Infant Care Plan”
- Employment of a unit housekeeper
- Staff are committed, through support and guidance, to improving breastfeeding initiation and maintenance of breast feeding. Mothers who require additional support for more complex breast feeding challenges can be referred to the Breast Feeding Coordinator
- Improvement in knowledge and practice in the section concerning the preparation, storage and use of Breast Milk and Specialised Powdered Infant Formula
- The estates department were proactively autoclaving taps and replacing clean outlets every three months.

The inspection resulted in **14** recommendations for improvement listed in Section 5.

The inspection in **2013** resulted in **17** recommendations, related to Regional Neonatal Care Audit Tool; **nine** have been addressed, **six** have been a repeated and there are **two** new recommendations. There were **eight** recommendations, related to the Regional Infection Prevention and Control Clinical Practices Audit Tool; **two** have been addressed, **four** have been repeated and there are **two** new recommendations.

The final report and quality improvement action plan will be available on RQIA’s website. Where required, reports and action plans will be subject to performance management by the Health and Social Care Board and the Public Health Agency (PHA).

RQIA’s inspection team thanks the Belfast HSC Trust (BHSC), and in particular all staff at the Royal Jubilee NICU for their assistance during the inspection.

2.0 Overall Compliance Rates

The Regional Neonatal Care and Clinical Practices Infection Prevention and Control Audit Tools

RQIA uses these tools as an assessment framework to build progressive improvement over a three-year inspection cycle. Compliance scores for the first inspection are 85 per cent, rising to 95 per cent by the end of the third inspection.

Compliance rates are based on the scores achieved in the various sections.

Table 1: Regional Neonatal Infection Prevention and Control Audit Tool Compliance Levels

Areas inspected	July 2013	Sept 2015
Local Governance Systems and Processes	79	96
General Environment – Layout and Design	74	92
General Environment – Environmental Cleaning	88	88
General Environment – Water Safety	100	100
Neonatal Clinical and Care Practice	94	97
Neonatal Patient Equipment	92	97
Preparation, storage and use of Breast Milk and Specialised Powdered Infant Formula	76	93
Average Score	86	95

Table 2: Regional Infection Prevention and Control Clinical Practices Audit Tool Compliance Levels

Areas inspected	July 2013	Sept 2015
Aseptic non touch technique (ANTT)	80	100
Invasive devices	100	82
Taking Blood Cultures	91*	89*
Antimicrobial prescribing	88	94
Clostridium <i>difficile</i> infection (CDI)	N/A	N/A
Surgical site infection	N/A	N/A
Ventilated (or tracheostomy) care	N/A	N/A
Enteral Feeding or tube feeding	86	88
Screening for MRSA colonisation and decolonisation	86	94*
Average Score	89	91

* Staff practice was not observed during the inspection.

Information was gained through staff questioning and review of unit audits.

	Year 1	Year 2
Compliant	85% or above	90% or above
Partial Compliance	76% to 84%	81 to 89%
Minimal Compliance	75% or below	80% or below

Where an inspection identifies issues that are considered to be of high risk, trusts will be asked to take immediate action.

3.0 Inspection Findings: Regional Neonatal Infection Prevention and Control Audit Tool

The Regional Neonatal Infection Prevention and Control Audit Tool contains seven sections. Each section aims to consolidate existing guidance in order to improve and maintain a high standard in the quality and delivery of care and practice in neonatal care. This will assist in the prevention and control of healthcare associated infections.

Regional Neonatal Infection Prevention and Control Audit Tool Compliance Levels

Areas inspected	July 2013	Sept 2015
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General Environment – Layout and Design	74	92
General Environment – Environmental Cleaning	88	88
General Environment – Water Safety	100	100
Neonatal Clinical and Care Practice	94	97
Neonatal Patient Equipment	92	97
Preparation, storage and use of Breast Milk and Specialised Powdered Infant Formula	76	93
Average Score	86	95

The findings indicate that whilst overall compliance was achieved in relation to the Regional Neonatal Infection Prevention and Control Audit Tool, inspectors identified areas for improvement in environmental cleaning. .

3.1 Local Governance Systems and Processes

For organisations to comply with this section, good governance should be displayed through management that displays effective decision-making and leadership. Systems and processes should be robust, and staff should be aware of their roles and responsibilities. Appropriate policies and procedures should be available. The unit achieved partial compliance in this section of the audit tool.

Leadership and Management

There had been a period of transition for the unit. The current unit manager, although not new to the unit, had only been in post from 1 September 2015. It is essential that the unit manager is supported in her role to drive forward change and developments in practice and processes. Despite being in the induction phase of their new appointment, good leadership qualities in managing staff and caring for neonates were evident. The unit manager also displayed good leadership, management and knowledge on infection prevention and control. Unit staff, displayed good awareness and an appreciation of the importance of infection prevention and control.

The multi professional Control of Serious Infections (CSI) group, led by a consultant neonatologist, continues to meet regularly. Topics covered can include admission rates, audit results and the number of reported onset bacteraemias. A specific topic is audited monthly; for the month of September the audit was on blood cultures.

The unit had dedicated infection prevention and control link nurses who were given time in their working day to undertake responsibilities involved in the role. There was a dedicated infection prevention and control nurse to advise on the management of infection control issues. Infection prevention and control staff did not visit the unit on a daily basis but were available for advice by telephone, and would increase visits when appropriate, for example, outbreak management.

Infection prevention and control information was cascaded down to staff for learning by various methods. For example staff meetings, e-mail, newsletter, audit results displayed on notice boards.

Inspectors were informed that the ratio of nursing and domestic staff was reviewed and increased when required, for example, during an outbreak; trust bank staff can be used to supplement staffing levels. On rare occasions, beds can be closed due to staff shortage; this would be following a discussion with a consultant neonatologist and obstetrician. The risk of insufficient regional neonatal cot availability which could result in mother and babies having to be transferred out of the region was included in the trust maternity/neonatology/gynae risk register.

Review of Documentation

A review of documentation evidenced a range of meetings, from management level to frontline staff. These feed into each other when required; there was a process for root cause analysis and follow up for the management of serious adverse incidents. The unit risk management group, led by a consultant neonatologist, meets on a monthly basis. Any incidents that have occurred in relation to the management of the unit are discussed and actions to be taken forwarded to staff for action.

Infection prevention and control policies were included in all neonatal staff induction. Staff could access infection prevention and control policies via the trust intranet. Although there was no trust overarching occupational health policy to negate the potential risk of infection, the trust has provided guidelines on the screening and vaccination of staff against diseases in the workplace.

A system was in place for unit staff to identify and report maintenance and repair issues. The computerised recording system in the estates department captures this information.

Audit

Local and regional audits were undertaken to improve infection prevention and control practices and environmental cleanliness. Evidence was available to show that audit results were reported to unit staff and displayed on notice boards. Monthly multi-disciplinary unit audits were carried out.

The infection prevention and control (IPC) team conducted validation audits of hand hygiene. The team found practice to be compliant in that alcohol hand decontamination was carried out following hand hygiene with soap and water. In December 2014, the IPCT carried out an audit of the environment; compliance was 63 per cent. To evidence an improvement in practice, repeat audits were carried out in December 2014 and February 2015. At the repeat audits, improved compliance of 78 per cent and 92 per cent were achieved. Results of the audit were cascaded to staff.

Surveillance

Surveillance, the continuous monitoring of healthcare associated infection (HCAI) is key to the control of infection. A surveillance programme can be used to implement improvement initiatives, assess effectiveness of clinical interventions and can quickly identify outbreaks if infection.

Inspectors noted that infection prevention and control audit and microorganism local surveillance programmes were in place. These monitor and promote improvement in infection prevention and control practices and infection rates. A weekly bacteriologist ward round and local healthcare associated infection (HCAI) improvement group review this data.

The unit submits sepsis data to the the Vermont Oxford Network (VON). The Network maintains a database including information about the care and outcomes of high-risk newborn infants. The database provides unique, reliable data to participating units to use in quality management, process improvement, internal audit and peer review.

Inspectors were informed that when infections were identified, staffing levels could be increased, to assist in the delivery of care and ensure adherence to good infection prevention and control practices.

Training and Development

Staff infection prevention and control knowledge and up-to-date practical skills are a prerequisite for clinical staff to carry out their role in an effective manner.

Since the last inspection, the role of a practice educator had been introduced within the unit. Inspectors were informed that the practice educator's role was to provide targeted teaching and learning activities for staff to facilitate improvement in the quality of care. The practice educator will be responsible

for ensuring that all staff competencies and training records are kept up to date.

All unit staff have participated in the trust induction programme on infection prevention and control. Link nurses carried out training on hand hygiene and aseptic non-touch technique (ANTT). Staff also have access to an ANTT DVD for information.

Staff were aware of action to take when they have developed an infection, thus preventing the transmission of infection.

Information and Communication

Information on infection prevention and control, and the effective communication of this information, is vital to ensure adherence to good practice.

A range of information resources was in place to advise parents and visitors of infection prevention and control precautions; hand hygiene, general visitor information.

Parents were provided with a comprehensive information booklet on the admission of their baby to the neonatal unit. This booklet provides essential infection prevention and control information for parents. It instructs parents in how to minimize the risk of the transfer of infectious organisms, examples include: not wearing stoned rings, watches and bracelets. Advice for parents on bringing food into the unit and the concept of 'bare below the elbow' was included.

Staff advised that parents and grandparents receive guidance and a demonstration of the 7 Step hand hygiene technique and use of hand gel. This was documented in neonate notes. Inspectors were impressed with the large wall mounted television screen located at the entrance to the unit. This continuously presented the correct hand wash technique to staff and visitors (Photo 1).



Photo 1 Large TV screen at entrance to unit demonstrating " 7 step hand wash technique"

3.2 General Environment

Layout and Design

For organisations to comply with this section of the audit tool they must ensure adequate facilities are available for the delivery of care. This includes the space available to carry out care on the neonate, decontaminate equipment and to ensure effective isolation.

The unit was compliant in the layout and design of the environment. The unit was commissioned for 27 cot/incubator spaces; nine in intensive care (ICU), seven in high dependency (HDU) and 11 in special care (SCBU). During the inspection 26 cot spaces were in use.

Refurbishment work which was under way during the first inspection had been completed. The unit had a new High Dependency area, two single rooms (Photo 2), and designated equipment cleaning room. Improvements have also been made to the relatives' room (Photo 3), dirty and clean utility room and technician's room. Although two of the former SCBU rooms were not in use during the inspection, they could be reconfigured for the isolation or cohorting of neonates.



Photo 2 New single room



Photo 3 Dedicated patient rest room

Inspectors noted that despite the recent refurbishment, the core clinical space did not meet 80 per cent of the minimum dimensions recommended by DHSSPS and outlined in the audit tool. Staff however, were working within these limitations to deliver safe and effective care.

Plans for the new neonatal unit were displayed in the general corridor on the ground floor. The trust is to incorporate this unit into the planned Women and Children's Hospital, it is anticipated that work on this new build will be completed by 2017. The new build will increase core clinical space, provide more storage space for specialised equipment and allow for dedicated rooms for decontamination of equipment.

Environmental Cleaning

For organisations to comply with this section they must ensure cleaning staff display knowledge of cleaning policies and procedures, and are competent in cleaning hand washing sinks. Environmental cleaning audits should be carried out, and the infection prevention and control team should be consulted when infection has been identified.

The unit was partially compliant in the section on environmental cleaning. Environmental cleaning; guidelines, audit and staff competency based training were reviewed. Inspectors noted good practice in adhering to current guidelines for cleaning. On questioning, staff displayed good knowledge on cleaning procedures and adherence to guidelines.

Inspectors were disappointed that the previous recommendation for this section had not been actioned. When carried out, terminal cleans should be signed off by domestic staff and then cleaning randomly validated by supervisors.

Water Safety

For organisations to comply with this section they must ensure that an overarching water safety plan and individual area risk assessment plan is in place. Water sampling, testing, flushing and maintenance are carried out correctly, and there is a mechanism in place to report water analysis results.

The unit was fully compliant in relation to water safety. An overarching trust water safety plan and individual unit risk assessment plan were in place. Hand washing sinks were used correctly - only for hand washing. Cleaning solutions and bodily fluids were not disposed of down hand washing sinks. Patient equipment was not stored or washed in hand washing sinks. A system was in place to address any issues raised with the maintenance of hand washing sinks and taps. Collection of tap water samples to facilitate microbiological organism testing and analysis was carried out. All ultraviolet taps flushed automatically every 12 hours to ensure water was not stagnating in the system.

The estates department were proactively autoclaving taps and replacing clean outlets every three months.

The chair of the trust's augmented care group provides a report to the trust water safety and usage group regarding water safety at local level. The water safety and usage group, which includes staff from infection prevention and control, microbiology, estates and governance, receives the results of water analysis. The group also provides an overview on the trust water quality to the governance steering group.

Neonatal Clinical and Care Practice

For organisations to comply with this section they must ensure that the delivery of care is provided in a way that negates the risk of transmission of infection. This is provided through adequate staffing, monitoring of neonate movement, infection control screening policies and adherence to DHSSPS and local guidance on cleansing the neonate.

The unit achieved good compliance in this section of the audit tool. As previously stated, neonatal staffing levels were based on the BAPM nurse to neonate ratio e.g. 1:1/1:2/1:4. The bays were designed for four or twelve spaces, which supported maximum use of staff. Overall, a six-cot room arrangement is the preferred option to aid observation and create an intimate, personal atmosphere; the new unit will facilitate this.

The trust endeavoured to ensure staffing levels were in line with the number of incubator/cot spaces to ensure optimal infection prevention and control practices however staff shortage could at times compromise these levels. The employment of more staff had been agreed in principle and following discussions, it was decided that the HDU would increase to nine cots; in total 29 funded cots. Management was also looking at the ratio of band 5 and band 6 nurses; this will be tied in with the neonatal network to look at staffing levels in NICUs throughout Northern Ireland. The trust was waiting on the paediatric and neonatal review on skill mix for guidance on staffing levels.

A local MRSA and pseudomonas screening policy was in place and known to staff. The MRSA decolonisation/treatment policy had a caveat in place for use with neonates. An infection prevention and control isolation policy was in place.

There was an incubator/cot tracking system to record the placement and movement of neonates within and outside the unit; movement was recorded in the neonates' notes. The system was informative particularly in the event of an outbreak of infection.

When transferring a neonate out of the unit, unit staff completed the Neonatal Network Northern Ireland (NNNI) notification of alert organism status transfer form and the trust neonate transfer form. The latter had been amended to record the infection status and infection prevention and control information on the neonate. Medical staff completed the BadgerNet information system and would write a letter to the receiving hospital, these detailed the infection status and microbiology results of the neonate.

The trust had developed a communication flow chart which outlines roles/responsibilities of staff when there is a clinical isolate of *Pseudomonas aeruginosa*. It is the responsibility of the neonatal intensive care consultant, manager/sister-in-charge and infection control team to inform their counterparts in the receiving or transferring units of any clinical isolates.

A procedure for personal care of the neonate was in place and known by staff. Staff used alcohol rub after hand washing when caring for the neonate. Risk factors that cause skin injury were recorded in the neonatal care plan. Staff were aware of the safe handling and removal of maternal secretions from the neonate.

Neonatal Patient Equipment

For organisations to comply with this section they must ensure specialised neonatal equipment is effectively cleaned and maintained. Audits of equipment cleaning and education on the use of equipment should be available.

The unit improved their compliance level in this section of the audit tool. Guidelines were in place for the cleaning of specialist equipment within the unit. Specialist equipment inspected was clean and in a good state of repair. Inspectors noted that the specialist equipment cleaning guidelines were still not routinely audited by senior nursing staff.

Staff displayed good knowledge of single use equipment. A procedure was in place for the cleaning of incubators, however competency based training for staff was last completed in August 2013 and was overdue, annual competency assessments were not carried out. While incubator cleaning was documented in the bedside notes, it would be good practice to have a more robust process for recording the actual cleaning process e.g. asset number, person and audit of cleaning practice. Incubator/cot mattress audits were not carried out, but a process was implemented during inspection.



Photo 4 Breast pumps ready for use with cleaning wipes and laminated instructions on use and cleaning

Staff have worked hard to improve the management, maintenance and cleaning of breast pumps; a well-documented daily cleaning schedule was in place (Photo 4). Mothers were given instructions on the use of the electric breast pump, the washing/sterilising of parts and asked to sign they had received this information in the Nursing Record and Infant Care Plan.

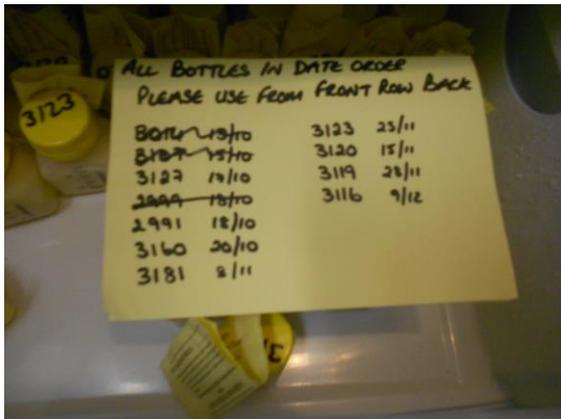
Preparation, Storage and Use of Breast Milk and Specialised Powdered Infant Formula

For organisations to comply with this section they must ensure that preparation, storage and use of breast milk and specialised powdered infant

formula is carried out correctly. Policies and procedures should be in place, known and implemented by staff.

The unit achieved compliance in this section of the audit tool. Staff discussion and observation of practice indicated a good working knowledge of trust policies and procedures. A comprehensive referral pathway for mothers requiring specialist breast feeding service was available.

There was a buildup of ice in the expressed breast milk freezer but records evidenced regular defrosting. Bottles of accurately labeled expressed breast milk were stored neatly in small individualised containers in the correct order of date and time of expression (Picture 5). This enabled the use of the earliest date first.



Full compliance would have been achieved if temperature checks had been carried out on receipt of donor milk and if there had been a risk assessment on the collection and storage of breast milk and specialised infant formula.

Photo 5 Donor expressed breast milk stored in order of use by date

4.0 Inspection Findings: Regional Infection Prevention and Control Clinical Practices Audit Tool

The Regional Infection Prevention and Control Clinical Practices Audit Tool contains nine sections. The observations of key clinical procedures has shown to reduce the risk of infection if performed correctly. Each section aims to consolidate and build on existing guidance in order to improve and maintain a high standard in the quality and delivery of care and practice in neonatal care. This will assist in the prevention and control of healthcare associated infections.

Regional Infection Prevention and Control Clinical Practices Audit Tool Compliance Levels

Areas inspected	18 & 24 July 2013	16 & 17 Sept 2015
Aseptic non touch technique (ANTT)	80	100
Invasive devices	100	82
Taking blood cultures	91*	89*
Antimicrobial prescribing	88	94
Clostridium <i>difficile</i> infection (CDI)	N/A	N/A
Surgical site infection	N/A	N/A
Ventilated (or tracheostomy) care	N/A	N/A
Enteral feeding or tube feeding	86	88
Screening for MRSA colonisation and decolonisation	86*	94*
Average Score	89	91

* Staff practice was not observed during the inspection.

The findings indicate that overall compliance was achieved. Inspectors identified that an improvement was required in antimicrobial prescribing, taking blood cultures and enteral feeding or tube feeding.

During the inspection clinical practice was observed in the majority of areas. Staff were questioned on all aspects of the clinical practices audit tool and displayed good knowledge on the practical application of clinical procedures.

The unit undertakes observational audits. Results viewed showed that staff adhere to good practice.

4.1 Aseptic Non Touch Technique (ANTT)

ANTT is a standardised, best practice and safe aseptic technique used for care the overall management of invasive clinical practices and preparation of medication. For organisations to comply with this section they must have a policy in place; staff should display knowledge and practical skills on the key principles, and audit of staff competency is carried out.

The unit achieved full compliance in this section of the audit tool. An ANTT policy was in place and available for staff to reference. The policy identified competency training and assessment as key principles in ensuring adherence to policy. ANTT training was carried out for nursing and medical staff; some nurses were trained ANTT assessors.

Staff displayed good knowledge and practical skills on the principles of ANTT. Clinical skills stations were used to assess nursing and medical staff. Evidence of nursing staff assessment was in place using the assessment tool through a variety of procedures. This assessment tool should also be implemented to record medical staff assessment. Audit of nursing and medical staff adherence to ANTT practice was independently verified by the IPC team. Audit results viewed evidenced good compliance.

Invasive Devices

Invasive devices are medical devices which in whole or in part, penetrate the body, either through a body orifice or through the surface of the body. For organisations to comply with this section they must ensure that there are systems and process in place to ensure a standardised and consistent approach by staff in the insertion and ongoing maintenance of invasive devices.

It was disappointing to note the level of compliance for this section had moved from full to partial. Out of date policies and poor documentation contributed to the compliance level. Evidence of practice was obtained through observation, review of documentation and speaking with staff.

A number of policies for the insertion and management of invasive devices were made available for the inspection team however as previously stated; a number of these policies had passed their review date.

The unit had developed guidelines specific to neonatal care. In doing this, to meet the needs of the neonate, they had separated device management. For example in regard to peripheral intravenous cannulation (PVC) there was draft guidance on insertion, however there was no guidance on ongoing maintenance to include, ANTT, duration, replacement of the device. The overarching trust policy for peripheral vascular cannulation was out of date.

The clinical educator advised that the unit was working on implementing a neonatal validated tool to observe PVC and there was a clinical skills day each month to update on skills for new/longer term staff on device management and sampling. All new staff completed the Queens University Belfast (QUB) neonatal nurse short course, the Enhanced Practice Course which is academic and clinical is offered to staff after five years working in the unit.

Generally nursing staff displayed a very good application of the key elements of ANTT and procedure in a number of practice interventions however inspectors observed a number of isolated issues that need to be addressed. These include: ensuring staff allow the hub to dry for the correct length of time, chose correct size of gloves, don't re-sheath needles, use 7 step hand hygiene technique when using alcohol rub.

Inspectors identified some practice issues. In the observation of records, inspectors noted that the central venous catheter (CVC) observation chart was not always commenced or if commenced not fully completed and the line pack label was not attached. There was no formal recording document to provide evidence for insertion of the PVC which would include the gauge, person, frequency of observation, reason for insertion and batch number. Observation of insertion sites were recorded on general observation charts.

Taking Blood Cultures

A blood culture is a microbiological culture of blood. It is employed to detect infections that are spreading through the bloodstream. For organisations to comply with this section they must ensure that a policy is in place, staff display knowledge and practical skills on the key principles and monitoring of the rate of blood cultures is carried out.

The unit achieved partial compliance in this section of the audit tool. Inspectors were unable to observe practice at the time of the inspection. Evidence of practice was obtained through review of documentation and speaking with staff.

A trust blood culture policy was available however it was due for review in 2012; staff confirmed it was being reviewed. The unit had devised its own guidance for taking a blood culture sample; this should be read in conjunction with the trust policy.

Inspectors reviewed the notes of a number of neonates who had had blood cultures obtained. Although a blood culture sticker was available, there was poor use of the sticker. This had been identified at the September CSI meeting for action. Inspectors observed that when a blood culture was obtained there was variation in details recorded: date, time, site.

Training on taking blood cultures was in place, medical staff were assessed as part of ANTT. Compliance with best practice when taking blood cultures was audited by medical staff.

Documentation provided for the inspection team evidenced that from quarter one, 2014 to quarter two, 2015, the incidence of contamination in NICU and SCBU was less than 3 per cent. The lab reported positive blood cultures to the clinical team, these were discussed during daily ward rounds. The rate of positive blood cultures or the incidence of false positive results was also discussed at the CSI meetings.

Systems were in place to compare blood culture results between directorates within the trust and this data was reviewed at the trust HCAI committee. RCAs were carried out for positive blood cultures. This is good practice. Staff demonstrated good knowledge on how and why to take a blood culture.

Antimicrobial prescribing

Antibiotic prescribing should be carried out in line with evidence-based antimicrobial guidelines. This should improve and reduce the progression of antibiotic resistance and optimise patient outcomes. For organisations to comply with this section they must ensure that there are systems and process in place to ensure a standardised and consistent approach by staff to prescribing. Prescribing should be monitored and reviewed.

Compliance was achieved in this section of the audit tool. Overarching trust antimicrobial guidelines were available on the intranet, pocket guide and via an antimicrobial guideline app which was launched November 2014. The policy was neonatal specific and would be superseded by the relevant NNNI policy which was under development. Pharmacy staff taught medical staff on safety and prescribing of all drugs, this would include vancomycin and gentamycin. The unit piloted the new NNNI Gent IV Prescription Chart for Neonates, unit staff were planning to use the chart and then audit practice.

Antimicrobial usage was reviewed at daily clinical ward rounds and weekly microbiology ward rounds; a ward based pharmacist was in place. The annual antimicrobial stewardship audit was in April 2015. Antibiotic consumption was monitored by the paediatric antibiotic steering group.

There was no electronic/computer aided prescribing tool available for antibiotics however a tool was in use for the prescribing of total parenteral nutrition (TPN) – SCRIBE.

Notes and medicine Kardexes (record management systems) reviewed evidenced that information to guide prescribing of antimicrobials was recorded. This included the neonate antimicrobial history, indication to prescribe an antimicrobial, and the planned duration of the antimicrobial.

As part of good practice, antimicrobial prevalence audits have been carried out in the unit over the last number of years. These include the European Surveillance of Antimicrobial Consumption (ESAC) 2011, the Antibiotic Resistance and Prescribing in European Children (ARPEC) 2012 and Point Prevalence Survey (PPS) 2012.

Enteral Feeding or Tube Feeding

Enteral feeding or tube feeding is defined as a mode of feeding that delivers nutrients directly into the stomach, duodenum or jejunum (gastrostomy, jejunostomy, naso/orogastric tubes). For organisations to comply with this section staff should display awareness of guidelines for the management

management of an enteral feeding system; insertion, set up and care. Adherence to best practice should be monitored.

Partial compliance was achieved in this section of the audit tool. Evidence of practice was obtained through review of documentation, observation and speaking with staff.

A policy/guidance was available and staff had received training on enteral feeding as part of the staff neonatal induction programme. There was no update training on orogastric/nasogastric management for longer term staff. The clinical educator advised that update training would be given in a skills day.

On observation, not all feeding lines were labelled and there was variation in documentation of lines; size, who inserted, time and volume of feed were not always recorded. On one occasion there was no record of an orogastric tube being inserted. There were inconsistencies in staff recording mouthcare for neonates, it is anticipated that the new draft observation chart will address this issue.

Enteral feed was stored, administered and disposed of as per trust policy and in line with best practice. Staff displayed good knowledge on the management of an enteral feeding system; insertion, set up and care. When necessary, staff adhere to guidance on the care of a stoma site from the trust stoma nurse or tissue viability nurse.

Preparation, decanting, reconstituting or diluting of feeds was not done within the unit.

Compliance with the enteral feeding protocol and guidance was not audited and actions plans developed where issues are identified. Compliance should be independently verified if self-scoring or validation scores are low, with action plans devised.

Screening for Meticillin Resistant Staphylococcus Aureus (MRSA) colonisation and decolonisation

The detection and treatment of MRSA should be carried out in line with DHSSPS Best Practice on Screening for MRSA Colonisation (HSS MD 12/2008). For organisations to comply with this section they must ensure that a screening and treatment policy is in place, staff display knowledge of the policy and adherence to best practice is monitored.

The unit achieved compliance in this section of the audit tool. Inspectors were unable to observe practice at the time of the inspection. Evidence of practice was obtained through review of documentation and speaking with staff.

An MRSA policy and care pathway was available and had been updated to include reference to neonate decolonization. A new MRSA screening policy was in the process of being developed. All babies admitted to the unit were

screened on the day of admission for organisms and sensitivities. In conjunction with this all babies were swabbed weekly for pseudomonas.

The trust surveillance systems identified an increase incidence in MRSA colonisation within the unit in 2014. Staff compliance with the MRSA policy including isolation of affected neonates and completion of the MRSA care pathway was not assessed locally or by the IPC team during this timeframe.

The last MRSA bacteraemia in the unit was in 2012. The IPC team will review the management of patients with an MRSA bacteraemia as part of the root cause analysis (RCA). The RCA would be initiated within five days of the event.

5.0 Summary of Recommendations

The Regional Neonatal Care Audit Tool

1. Infection prevention and control staffing levels should be reviewed to facilitate daily visits to the unit. **(Repeated)**
2. The trust should continue to maintain staffing levels in line with BAPM recommendations. **(Repeated)**
3. Adherence to core clinical space recommendations and an improvement in the facilities available within the unit should be reviewed as part of any refurbishment/new build planning. **(Repeated)**
4. Terminal cleans should be signed off by domestic staff when carried out and the cleaning randomly validated by supervisors. **(Repeated)**
5. All specialist equipment should be cleaned and adherence to cleaning guidelines routinely audited. **(Repeated)**
6. It is recommended that in regard to cleaning neonatal equipment, competency based training and annual competency assessment for staff is carried out. This process should be supported by robust cleaning documentation.
7. It is recommended that a risk assessment is carried out for the collection and storage of breast milk and specialised infant formula. **(Repeated)**
8. It is recommended that the temperature of donor expressed breast milk is recorded on arrival to the unit.

The Regional Clinical Practices Audit Tools

9. It is recommended that Invasive devices and blood culture policies and guidelines are reviewed and updated.
10. It is recommended that staff adhere to trust policies and guidelines, this should include completing all relevant documentation (blood culture, invasive devices, orogastric/nasogastric).
11. It is recommended that electronic/computer aided prescribing tools should be available to assist with antimicrobial prescribing. **(Repeated)**
12. Compliance with the enteral feeding protocol and guidance should be audited and actions plans developed where issues are identified. Independent verification should be carried out if applicable. **(Repeated)**

13. Adherence to the MRSA policy and care pathway should be audited.
Independent verification should be carried out if applicable. **(Repeated)**
14. Infection control audits should be carried out on achievement of
isolation. **(Repeated)**

6.0 Key Personnel and Information

Members of RQIA's Inspection Team

Lyn Gawley	Inspector Infection Prevention/Hygiene Team
Sheelagh O'Connor	Inspector Infection Prevention/Hygiene Team
Margaret Keating	Inspector Infection Prevention/Hygiene Team
Thomas Hughes	Inspector Infection Prevention/Hygiene Team

Trust Representatives attending the Feedback Session

The key findings of the inspection were outlined to the following trust representatives:

Brian Barry	Director Specialist Hospital & Women's Health Directorate
Colin Cairns	Co-Director PCSS
Elizabeth Bannon	Co-Director Specialist Hospital & Women's Health Directorate
Aaron Johnston	Intern Specialist Hospital & Women's Health
Sally Hamilton	Service Manager, Senior Midwife NICU
Nancy Scott	Senior Manager, Patient and Client Support Services (PCSS)
Ruth Finn	Senior Infection Prevention and Control Nurse
Maureen O'Dowd	Practice Educator
Bernie Porter	Operation Manager, PCSS

Apologies:

Brenda Creaney	Executive Director of Nursing & PCSS
Dr A Verner	NICU Consultant
Dr Hayes	NICU consultant

7.0 Augmented Care Areas

Based on DHSSPS guidance, the augmented care areas currently identified for inclusion in inspections are:

- neonatal and special care baby units

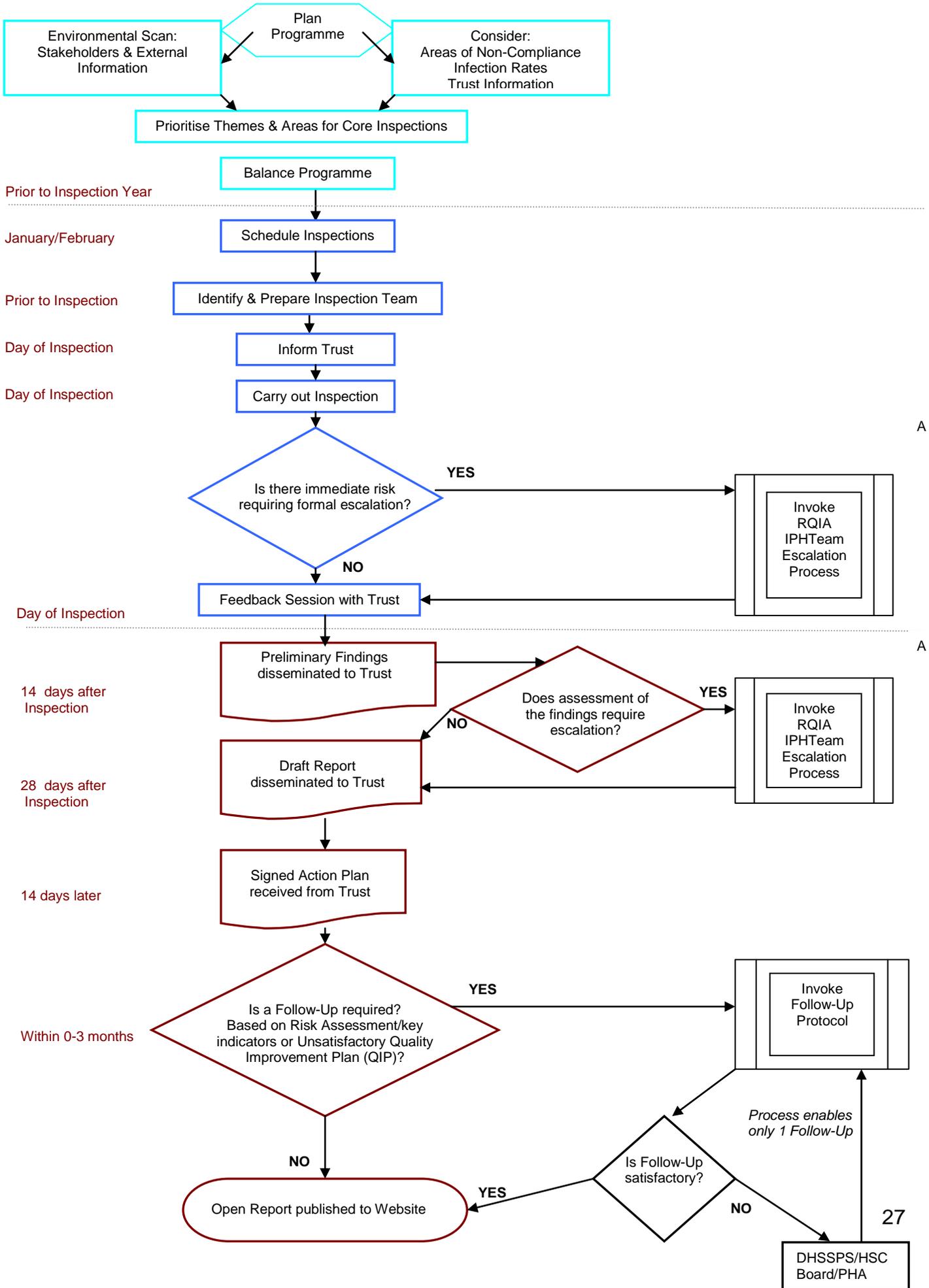
- paediatric intensive care
- all adult intensive care which includes cardiac intensive care
- burns units
- renal (dialysis) units
- renal transplant unit
- high dependency units (HDU)
- haematology
- oncology

8.0 Unannounced Inspection Flowchart

Plan Programme

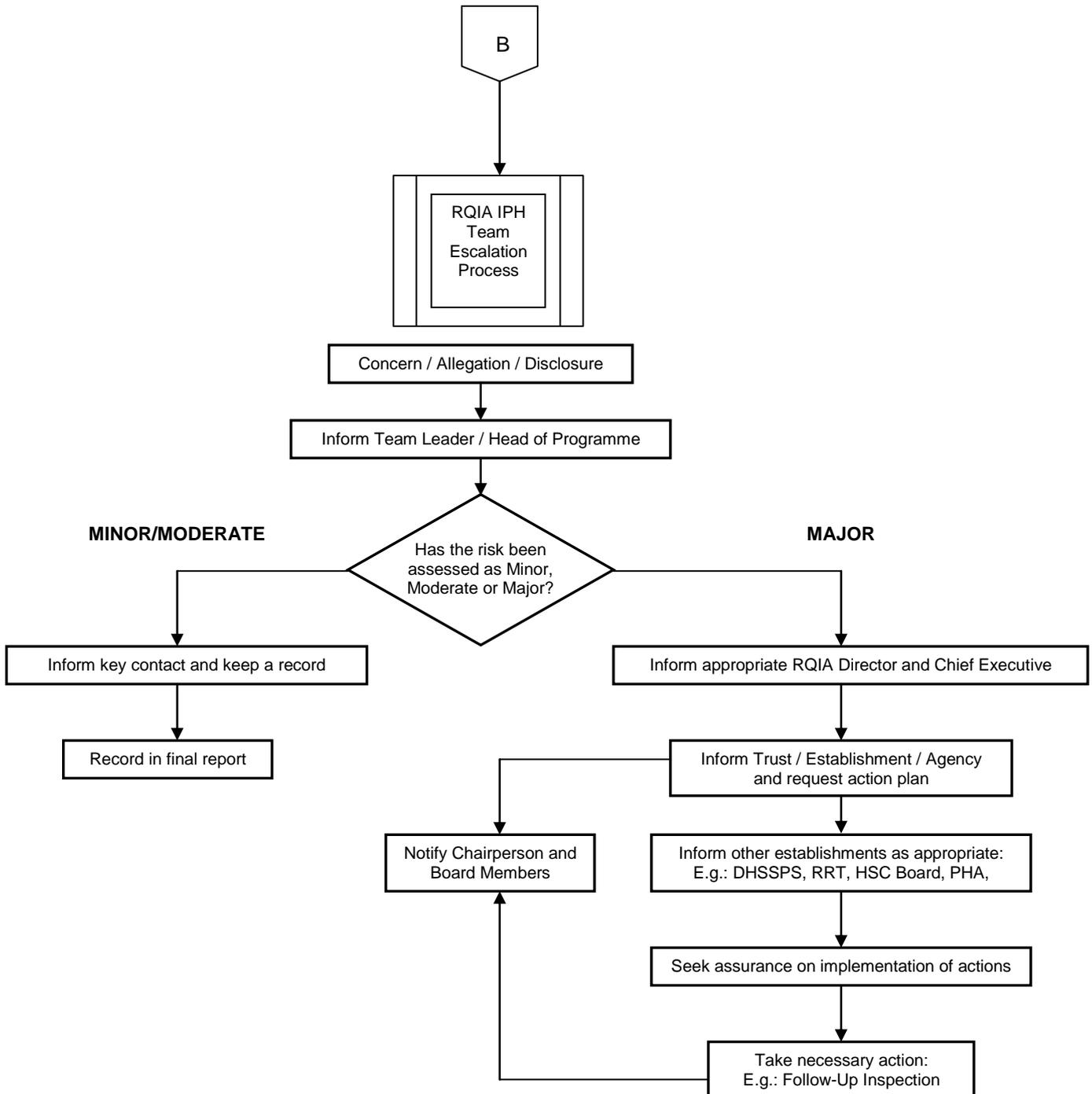
Episode of Inspection

Reporting & Re-Audit



9.0 Escalation Process

RQIA Hygiene Team: Escalation Process



10.0 Quality Improvement Plan

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
The Regional Neonatal Care Audit Tool				
1.	Infection prevention and control staffing levels should be reviewed to facilitate daily visits to the unit. (Repeated)	IPC	A recent IPT was submitted by the Trust to the HSC Board. Unfortunately the funding allocation, which was very welcome, did not fully meet the needs of the Trust as outlined in our IPT. There are 22 augmented care areas in the BHSCT.	Ongoing
2.	The trust should continue to maintain staffing levels in line with BAPM recommendations. (Repeated)	BHSCT	This has been taken forward and the BHSCT are in the process of recruiting 8 band 6 staff. The vacancies have gone through 'scrutiny' and at the earliest, the advert will go to press during the week of 2 nd November. Interviews would then take place during the week of 7 th December.	February 2016
3.	Adherence to core clinical space recommendations and an improvement in the facilities available within the unit should be reviewed as part of any refurbishment/new build planning. (Repeated)	Project Team, New Maternity Hospital	It is recognised that the current facility does not adhere to core clinical space recommendations however this has been addressed in the design of the new maternity hospital.	Late 2019

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
4.	Terminal cleans should be signed off by domestic staff when carried out and the cleaning randomly validated by supervisors. (Repeated)	PCSS/NICU	From 1st October 2015 PCSS have implemented a discharge clean recording sheet. All discharge cleans are recorded and signed off by the Neo Natal Domestic Staff. PCSS supervisors then randomly select and check discharge cleans daily. Record Sheets are held with PCSS supervisors.	October 2015
5.	All specialist equipment should be cleaned and adherence to cleaning guidelines routinely audited. (Repeated)	PCSS/NICU	<p>PCSS Staff are responsible for the decontamination of incubators (all other equipment is the responsibility of Neo Natal staff) From 1st November 2015 PCSS Supervisors have been carrying out monthly checks with Neo Natal domestic staff to ensure that staff are following the correct process when decontaminating incubators. Records are held with PCSS Supervisor. i.e.</p> <ul style="list-style-type: none"> • When an incubator has been cleaned PCSS staff will complete and sign record sheet which will include the incubators serial number • PCSS Supervisors will countersign on the record sheet • PCSS Supervisor will carry out on a monthly bases verification of the incubator decontamination process 	November 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
			<p>with each member of the PCSS staff who work in the Neo Natal Unit to ensure competence.</p> <ul style="list-style-type: none"> All records will be held on file in the PCSS Supervisors office. 	
6.	It is recommended that in regard to cleaning neonatal equipment, competency based training and annual competency assessment for staff is carried out. This process should be supported by robust cleaning documentation.	PCSS/NICU	Competency based training to be performed and annual assessment of staff performing the procedure carried out. PCSS have contacted the company representative to arrange staff training during December. Annual assessment of PCSS staff performance in regard to equipment cleaning will be performed by NICU IPC lead nurse. This has been agreed with PCSS/ IPCT/Neo Natal Staff Groups.	December 2015
7.	It is recommended that a risk assessment is carried out for the collection and storage of breast milk and specialised infant formula. (Repeated)	NICU	We are currently developing an audit tool to ensure that the collection and storage of breast milk and infant formulas meet current guidance.	November 2015
8.	It is recommended that the temperature of donor expressed breast milk is recorded on arrival to the unit.	NICU	To record temperature within the packed box of frozen donor breast milk on arrival from the Donor Milk Bank. The unit has contacted the milk bank and other NICU's in the region. A process has been put in place to record the temperature of frozen	October 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
			donor breast milk on arrival in our unit.	
The Regional Clinical Practices Audit Tools				
9	It is recommended that Invasive devices and blood culture policies and guidelines are reviewed and updated.	NICU	Policies and procedures to be reviewed and updated. We have nursing staff with dedicated time to review and update our policies and procedures on a rolling programme.	Ongoing
10.	It is recommended that staff adhere to trust policies and guidelines, this should include completing all relevant documentation (blood culture, invasive devices, oro gastric/nasogastric).	NICU	All staff to be updated on completing documentation required pertaining to blood culture, invasive devices and nasogastric tubes etc. Several methods of communication are used i.e. daily safety briefs, monthly Sister's meetings, bi-monthly staff meetings, unit newsletter, email, notice boards, short 'teaching sessions' and staff appraisals.	November 2015
11.	It is recommended that electronic/computer aided prescribing tools should be available to assist with antimicrobial prescribing. (Repeated)	Pharmacy	An electronic prescribing tool is not currently available however consideration is being given for an agreed system for the new maternity hospital.	Late 2019
12.	Compliance with the enteral feeding protocol and guidance should be audited and actions plans developed where issues are identified. Independent verification should be carried out if applicable.	NICU	To develop an audit tool for compliance with the enteral feeding protocol and guidance. The unit practice educator is currently developing a tool and	December 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
	(Repeated)		networking with other HSCT. A pilot of the tool will be performed in Nov/Dec and adjustments made as required.	
13.	Adherence to the MRSA policy and care pathway should be audited. Independent verification should be carried out if applicable. (Repeated)	IPC	Audit to be performed on adherence to the MRSA tool and care pathway on the occasion of an identified MRSA in the neonatal unit.	With next positive MRSA isolate.
14	Infection control audits should be carried out on achievement of isolation. (Repeated)	IPC	If babies are identified as requiring isolation an audit will be performed on achievement of isolation.	Current



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