The Regulation and Quality Improvement Authority

The Regulation and Quality Improvement Authority

Unannounced Infection Prevention/Hygiene Augmented Care Inspection

Year 2 Inspection

Mater Hospital Critical Care Unit

25 and 26 November 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.

Contents

1.0 Inspection Summary

The three year improvement programme of unannounced inspections to augmented care areas commenced in the Mater Hospital Critical Care Unit (CCU) on 29 and 30 April 2014.

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 critical care unit did not achieve the set compliance level in the Regional Critical Care Infection Prevention and Control Audit Tool and the Regional Infection Prevention and Control Clinical Practices Audit Tool for year one. An unannounced inspection was undertaken to the critical care unit on 25 and 26 November 2015 as part of the three-year improvement programme. The inspection team comprised of three RQIA inspectors. Details of the inspection team and trust representatives who received feedback can be found in section 6.

The report highlights strengths as well as areas for further improvement, and includes recommendations and a quality improvement action plan. This can be read in conjunction with year one inspection report www.rqia.org.uk.

Overall the inspection team found evidence that the critical care unit at the Mater Hospital was working to comply with both regional audit tool inspected.

Inspectors observed:

- The unit was fully compliant in two sections of the Regional Critical Care Infection Prevention and Control Audit Tool and four sections of the Regional Infection Prevention and Control Clinical Practices Audit Tool.

Inspectors found that the key areas for further improvement were:

- The management of blood cultures and antimicrobial prescribing.

Inspectors observed the following areas of good practice:

- Secured funding for a permanent dedicated CCU IPC nurse

The inspection resulted in **11** recommendations for improvement listed in Section 5.

The inspection in **2014** resulted in **15** recommendations, related to the Regional Critical Care Infection Prevention and Control Audit Tool**. Eight** recommendations have been addressed, **six** have been repeated and there is **one** new recommendation. There were **10** recommendations, related to the Regional Infection Prevention and Control Clinical Practices Audit Tool. **Six** recommendations have been addressed, **two** 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 would like to thank the Belfast HSC Trust (BHSCT), and in particular all staff at the Mater Hospital Critical Care Unit for their assistance during the inspection.

2.0 Overall Compliance Rates

The Regional Critical 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 Critical Care Infection Prevention and Control Audit Tool Compliance Levels

Areas inspected	29 & 30 April 2014	25 & 26 Nov 2015
Local Governance Systems and Processes	77	89
General Environment – Layout and Design	75	76
General Environment – Environmental Cleaning	88	100
General Environment – Water Safety	95	100
Clinical and Care Practice	86	91
Patient Equipment	86	98
Average Score	**85**	**92**

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

Areas inspected	29 & 30 April 2014	24 & 25 Nov 2015
Aseptic non touch technique (ANTT)	80	94
Invasive devices	88	91
Taking Blood Cultures	71*	67*
Antimicrobial prescribing	93	88
Clostridium *difficile* infection (CDI)	90*	100*
Surgical site infection	100	100
Ventilated (or tracheostomy) care	100	100
Enteral Feeding or tube feeding	89 *	93
Screening for MRSA colonisation and decolonisation	79*	100*
Average Score	**88**	**93**

* 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 Critical Care Infection Prevention and Control Audit Tool

The Regional Critical Care Infection Prevention and Control Audit Tool contains six 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 critical care. This will assist in the prevention and control of healthcare associated infections.

Regional Critical Care Infection Prevention and Control Audit Tool Compliance Levels

Areas inspected	29 & 30 April 2014	25 & 26 Nov 2015
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Average Score	**85**	**92**

Overall compliance was achieved in relation to the Regional Critical Care Infection Prevention and Control Audit Tool.

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

The unit manager continues to display good leadership, management and knowledge on infection prevention and control. The manager takes the lead in attending internal and external operational meetings specific to infection prevention and control (IPC). Unit staff displayed good awareness in this area. A newly appointed dedicated IPC link nurse will attend IPC link meetings.

The unit continues to have a dedicated trust IPC nurse for advice on the management of infection prevention and control issues. Due to staffing levels within the IPC team, daily IPC visits do not occur: phone advice is available.

1. **It is recommended that infection prevention and control staffing levels are reviewed to facilitate daily visits to the unit. Repeated**

Feedback to staff on unit performance indicators, audit and incidents are discussed at safety briefings and staff meetings under 'Safety'; however the agenda should further be defined to ensure they are always discussed. Staff meetings occur every three months, the IPC link nurse now provides feedback to staff at meetings.

2. **It is recommended that audits and incidents should become a standard item on local staff meeting agenda. Repeated.**

The unit had six new staff nurses appointed in August/September 2015 who are nearing completion of their competency/supervised practice period.

Nursing and domestic staffing levels continue to be reviewed and increased when required, for example, during an outbreak. Unit nursing staffing levels are maintained therefore beds are not closed due to staff shortage. As previously advised beds can be closed if the dependency of patients is above commissioned spaces i.e. five patients requiring intensive care, one bed closes as the maximum staffing levels of five nurses on duty has been reached. Trust bank nurse staff can be used to supplement unit staffing levels. At present, bank staff have to be used due to the acuity of patients in order to have correct staffing ratio.

In the event of an outbreak or infection, beds can be closed to facilitate vapourised hydrogen peroxide (VHP) cleaning.

Inspectors were advised that funding has been secured for a permanent dedicated CCU IPC nurse, to work across the three main adult CCUs; Royal, Belfast City and Mater hospitals. This nurse will assist with the implementation and development of IPC initiatives.

Within the unit, data is collected for the NI transfer recording system (NICATS) and the Intensive Care National Audit Research Centre (ICNARC) on the acuity of patients and activity of CCU. This can be used as a benchmarking tool, for research, costing and developing a business cases.

Review of Documentation

There is a range of meetings and documentation available to evidence the dissemination of information to staff, from senior to ward level for example staff meetings, senior sister meetings, medical governance meetings, standardised safety briefings.

A process for root cause analysis, follow up and learning was in place for the management of serious adverse incidents and infection. This was evidenced through incident meetings and safety briefings for a recent Carbapenemase-producing organisms within the unit.

Staff were aware that IPC CCU policies and procedures can be accessed via the intranet on the Unscheduled Care/Emergency care HUB or in hard copy in

the unit. There is also access to the Royal Marsden Clinical Skills Manual, Regional Infection Prevention and Control Manual, Guidelines and Audit Implementation Network (GAIN) Guidelines, DHSSPS and National Institute of Health and Care Excellence (NICE) Guidelines. However there were only 6 policies on the Critical Care section of the HUB. Staff were again unable to locate a policy on Ventilator Associated Pneumonia or were aware of the shared drive where CCU policies are accessible.

A number of clinical practice policies, continue to require review. These are detailed in the section 4.0 of the report and should be reviewed as part of the HUB update. The trust advised that a schedule is in place for policy review which staff are presently working to complete.

3. **It is recommended that the intranet Unscheduled Care/Emergency Care HUB should be updated to contain all policies relevant to critical care. All IPC policies that have past their review date should be updated. All staff should be aware of how to access these policies. Repeated.**

The trust occupational health policy links to infection prevention and control guidelines to advise staff if they present with an illness for example management of MRSA and Tuberculosis. Staff were aware of action to take when they have developed an infection, thus preventing the transmission of infection.

A system was in place for unit staff to identify and report maintenance and repair issues.

Audit

Evidence was available to show local and regional audits and high impact interventions (HIIs) were undertaken with results reported to unit staff. Actions were identified when necessary to improve practice.

The IPC nurse conducts independent audits on IPC in the unit. Audit information on IPC and environmental cleanliness is displayed on a notice board at the entrance to the unit.

Inspectors observed the ‘focus of the month’ for November 2015 was central line associated blood stream infections.

Inspectors were advised that the trust nursing governance group is to review data collection and auditing of HIIs to identify any improvement in the process and ensure data robustness, the value of collection and specific unit needs.

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.

IPC audit and microorganism local surveillance programmes for example Meticillin-resistant Staphylococcus aureus and Carbapenemase-producing organisms, were in place to monitor and promote improvement in IPC practices and infection rates. Ward rounds, with microbiology input, and local critical care management group review this data. This information is also reviewed trust wide as part of the healthcare associated infection improvement group.

The unit has a nurse, ½ day a week, dedicated to sending healthcare-associated infection data to the Public Health Agency.

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.

IPC training is mandatory within the trust and is now available online. Figures available show 86 per cent of unit staff have completed this training; aim to achieve 100 percent by end of financial year. The unit manager follows up non-completion of training. This is reported by the lead nurse to the senior governance meeting.

Information and Communication

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

As before, a range of information resources was in place to advise relatives or visitors of IPC precautions; general visitor information, laundry, HCAI. Relatives and visitors do receive information on hand hygiene however this does not explicitly detail information on the concept of bare below the elbow and where if appropriate, for them to adhere to it.

The unit relative/visitor information leaflet is in draft format. It should include visiting times/ arrangements and not to bring outside coats into the unit. The Patient & Visitor Information Leaflet should be updated to include 7 step hand hygiene technique.

4. **It is recommended that information leaflets for relatives and visitors should be updated and developed. Leaflets should detail the concept of care below the elbow and adherence to the dress code policy were appropriate. Repeated.**

3.2 General Environment

3.2.1 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 critical care, decontaminate equipment and to ensure effective isolation.

The unit was minimally compliant in the layout and design of the environment.

As no bed reconfiguration changes have been made to the unit since the first inspection, the core clinical space and linear distance at the patient bed area, for the delivery of care, was not within 80 per cent of the minimum dimensions recommended by the DHSSPS and outlined in the audit tool. A proposal for the refurbishment of the single room is awaiting approval.

Funding has been secured to improve relative's facilities in an area adjacent to the unit, it is hoped that work will be completed within the year. The relative's area will include overnight accommodation, a waiting room, kitchen and sanitary facilities.

Inspectors noted that although the space does not meet current recommended requirements, staff are working within these limitations to deliver safe and effective care. Bed spaces were free from clutter and easily accessible (Picture 1).

Picture 1 – Typical Bedspace

Staff advised that the technical support team will on request; promptly remove equipment in need of repair. An area within the equipment store has been designated for equipment awaiting repair.

Ventilation systems continue to be monitored annually, serviced and cleaned by estates. An annual ventilation risk assessment from intake to supply and testing is carried out to identify if ventilation system cleaning is required.

5. **It is recommended that the upgrading of single room facilities should continue. As part of any refurbishment/new build planning,**

adherence to core clinical space recommendations and an improvement in the facilities available should be reviewed. There should be on-going review of the layout and design of the unit for maximum space utilisation. Repeated.

3.2.2 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.

Good practice was observed; the unit achieved full compliance in the section on environmental cleaning. Documentation evidenced robust cleaning processes and staff training and competency assessment.

3.2.3 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 this section of the audit tool.

An overarching trust water safety plan and individual unit risk assessment plan were in place. All results of water analysis are reported to the trust water safety and usage group. This includes staff from infection prevention and control, microbiology, estates and governance.

Patient and client support service staff carry out and document a twice daily programme of water flushing. Estates staff carry out a three month water sampling programme. Action taken following a recent infection in the unit requires that the sinks are subject to daily chemical cleaning and disinfection; purge and dwell process. This is carried out by PCSS staff. Water samples from the waste pipe are taken monthly for analysis.

It is planned that for outbreaks and increased incidence of infection, chemical cleaning and disinfection; purge and dwell process is carried out.

A new stainless steel sink, dedicated for the supply of water for washing patients been commissioned on the unit.

Picture 2 – Typical Hand washing sink

Hand washing sinks were used correctly - only for hand washing (Picture 2). Bodily fluids and cleaning solutions were not disposed of down hand washing sinks. Patient equipment was not stored or washed in hand washing sinks.

3.3 Critical Care 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 patient movement, infection control screening policies and adherence to DHSSPS and local guidance on cleansing the patient.

The unit continue to achieve compliance in this section of the audit tool. During the inspection, staff allocation ensured optimal IPC practices.

At present the ward watcher IT system can be manipulated to ascertain patient placement for specific timeframes. However in the event of an outbreak retrieving this information could be time consuming, staff would also manually check the unit diary and the unit admission book to identify patient placements. A capital bid in in place to implement the CareVue IT system, used within the Royal and Belfast City units. This system will link each site and maintain a record of patient placement and movement within the unit and allow for retrospective patient placement recording.

There is no recording of asset number to identify which specific bed the patient has been in when in the unit.

Staff complete various documents when transferring a patient out of the unit detailing; medical history and action plan for the patient, including the patient's antibiotic therapy, infection status and latest blood and microbiology results. The nursing handover should be expanded to include IPC information.

Screening policies and procedures are in place and known to staff. Staff can access IPC guidance via the intranet HUB.

If a patients admission screens are positive or results following discharge or transfer to another ward are positive there is a trust communication flow chart on the management of multi resistant organisms in place to identify when the receiving or transferring wards are informed. On questioning, staff were unaware of the communication flow chart. Minutes evidenced that this had been discussed with nursing staff at the staff meeting in October 2015. The flow chart was also laminated and displayed on the wall in the pharmacy room.

6. **It is recommended Carevue is implemented within the unit. All staff should be updated on the trust communication flow chart on the management of multi resistant organisms.**

In two sets of notes inspected for patients with an infection, there was no IPC care plan in place. This was immediately rectified by staff. At present, nursing care plans are paper based, however the trust are also developing a range of nursing care plans to go on to the CareVue system.

7. **It is recommended that an IPC nursing care plan is in place for patients with a known infection. Repeated.**

Staff washed patients in water from a source of known quality and used alcohol rub after hand washing when caring for patients. Medical staff should ensure gloves and theatre hats, are removed following use, before entering the unit

3.4 Critical Care Patient Equipment

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

Picture 3 – Equipment Store

The unit has improved on the first years compliance scores. Overall, specialist equipment inspected was clean and in a good state of repair. Guidance was in place for the cleaning, storage and replacement of patient equipment (Picture 3). Trust cleaning schedules were completed and each bed space had an individual cleaning equipment check list which was completed and signed off three times daily. Audits were carried out routinely by senior staff.

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 critical 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	**29 & 30 April 2014**	**24 & 25 Nov 2015**
Aseptic non touch technique (ANTT)	80	94
Invasive devices	88	91
Taking Blood Cultures	71*	67*
Antimicrobial prescribing	93	88
Clostridium *difficile* infection (CDI)	90*	100*
Surgical site infection	100	100
Ventilated (or tracheostomy) care	100	100
Enteral Feeding or tube feeding	89 *	93
Screening for MRSA colonisation and decolonisation	79*	100*
Average Score	**88**	**93**

* Staff practice was not observed during the inspection.
Information was gained through staff questioning and review of unit audits.

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

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.

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 compliance in this section of the audit tool. An ANTT policy was in place however it had past its September 2015 review date. The policy identifies competency training and assessment as key principles in ensuring adherence to best practice.

Staff receive mandatory training by on line presentation or face to face. Two staff have been trained as ANTT assessors. With the exception of maternity and sick leave all permanent nursing staff have had ANTT training. Evidence of staff competency assessment was in place. Staff displayed good knowledge and practical skills on the principles of ANTT.

Since the last inspection, there has been a renewed focus on ensuring that medical staff are trained and competency assessed in ANTT. With the exception of two new trainees, all medical staff have had ANTT training and competency assessment. Certificates of competence and completion of training are kept in each medical staff members training portfolio.

The IPC independently validate ANTT practice. A validation audit carried out in June/July 2015 identified incorrect use of PPE as part of the ANTT process. PPE training was facilitated by the IPC team, with PPE posters developed that highlighted best practice.

Weekly ANTT audits are ongoing, recent results highlight good compliance.

4.2 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.

The unit achieved compliance in this section of the audit tool.

A number of policies and procedures for the insertion and on-going management of invasive devices continue to require review; the management of urinary catheter (2012) peripheral vascular cannulation (May 2014), chest drains (2013) and central venous catheters (2011). Documentation provided evidence 100 per cent achievement in care bundles for; management of central vascular catheters (CVC), peripheral vascular catheters (PVC), urinary catheters and ventilator associated pneumonia.

Competency in the management of invasive access devices is assessed as part of the national competency framework for critical care nurses. All new nursing staff complete this during their preceptorship period. However, inspectors noted that there was no evidence of update/ refresher training with invasive devices for longer term staff.

8. **It is recommended that longer term staff receive update training and competency assessment on the insertion and care of invasive devices.**

Nursing staff only insert urinary catheters and nasogastric tubes, medical staff are responsible for insertion of all other devices. Competency in the insertion of invasive devices is gained through Direct Observation of Procedural Skills (DOPS) assessments.

Overall, staff had good knowledge and displayed good practice in the management of invasive devices. Device recording charts should be updated to include recording of the batch number.

The Public Health Agency (PHA) 'Device associated Infection Surveillance in Critical Care Units HCAI Monthly Report', November 2014 - October 2015 details the Mater critical care unit infection rates. This report identifies that the critical care unit has had:

- **zero** catheter associated urinary tract infections (CAUTI),
- **zero** ventilated associated pneumonia (VAP), last recorded 2012
- **three** central line blood stream infections (CLABSI),

For two of the three CLABSI identified, documentation was available to evidence a review of cases, timeline, action plan and feedback to staff during safety briefings and meetings.

4.3 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 minimal 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 a review of documentation and speaking with staff.

A trust blood culture policy was available however this was due for review in 2012. Staff demonstrated good knowledge on how and why to take a blood culture. Inspectors reviewed the notes of a number of patients that had a blood culture taken. For one blood culture taken, documention viewed did not detail the date, time and site for taking the culture. It was noted that the blood culture recording sticker used to record blood culture details was not in use.

Medical staff have been competency assessed in taking blood cultures as part of DOPs assessments and have received ANTT training in line with this procedure. The IPC team include theory of taking of blood cultures as part of medical staff induction.

Inspectors noted that blood culture analysis to include the percentage contamination of blood samples taken is carried out. Evidence was available to show that blood culture contamination comparisons can be made between different departments within the trust. Results are reviewed at augmented care meetings and disseminated to staff on a quarterly basis. However inspectors could not evidence within meeting minutes a review of positive and contamination results at a local level within the unit.

Documentation viewed evidenced that within CCU the incidence of blood culture contamination for Quarter 2 of 2015 was 6.67, above than the three per cent range. However in Quarter 3 of 2015 the rate was reduced to 2.27 per cent. Discussion with medical staff identified that they were unaware of the increase in contamination rates for Quarter 2 of 2015, an action plan had not been developed to address the increase in rate for example update training.

There are currently no systems in place to monitor compliance with best practice when taking blood cultures. Although auditing of blood culture techniques was identified as an action from the quality improvement plan on the first inspection, this was unable to be evidenced. We were informed that this is due to commence.

9. **It is recommended that an audit of staff competence and adherence to guidance on blood culture technique is carried out. Staff should be regularly updated on the results of blood culture analysis. Repeated**

4.4 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.

Partial compliance was achieved in this section of the audit tool. Inspectors observed that antimicrobial guidelines, available on the intranet were due for review in November 2015. The CCU specific antimicrobial protocol has been reviewed and is awaiting sign off from the Drugs and Therapeutic committee in January 2016.

Antimicrobial guidance is cascaded to medical staff as part of induction and is available as a smart phone app for staff to access. As previously discussed, the CareVue IT system is not in place to aid antibiotic prescribing (Refer to Recommendation 6).

On the last inspection, a unit based pharmacist was in place. We were informed that the funding for this role had come to an end. Medical staff reported that the pharmacy role is essential in providing prescribing advice

and support within the unit. We were informed at feedback that funding was now available to reintroduce this role; the recruitment process has commenced.

The microbiology team visits the unit twice weekly (Tues/ Thurs); daily microbiology consultant input is available by phone/ teleconferencing. This process has been implemented since the first inspection and has improved antimicrobial stewardship. This improvement was evidenced by audit.

Antimicrobial usage auditing has now commenced within the unit in line with antimicrobial prescribing guidance. Staff endeavour to complete this on a three monthly basis. A trust wide antimicrobial steering committee is in place and centrally reviews audit results.

10. **It is recommended that a unit based pharmacist is in place.**

4.5 Clostridium *difficile* infection (CDI)

The detection and treatment of CDI should be carried out in line with best practice guidance. For organisations to comply with this section they must ensure that guidance on care is in place, staff display knowledge and implement the guidance and adherence to best practice is monitored.

The unit achieved full 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 a review of documentation and speaking with staff.

An up to date guide and care pathway on the management of CDI is available and known to staff.

Inspectors were informed that the unit last cared for a patient with CDI in January 2015. Audit tools were used to monitor adherence with the management of CDI, to include completion of the care pathway and isolation of the patient.

As part of the root cause analysis process, the IPC team review the management of patients were a CDI is identified on Part 1 of the patients death certificate.

4.6 Surgical site infection (SSI)

Surgical site infection (SSI) is a type of healthcare associated infection, in which a wound infection occurs after an invasive (surgical) procedure. The majority of surgical site infections are preventable. For organisations to comply with this section they must ensure that systems and processes are in place throughout perioperative (pre, intra and post-operative) care to reduce the risk of infection. A programme of surgical site infection surveillance should be in line with DHSSPS guidance.

A review of the trust and unit in the management of SSI identified full compliance in this section of the audit tool. Information was obtained from discussion with infection prevention and control staff, unit staff and a review of individual patients' records.

Staff within the unit displayed knowledge of the SSI care bundle for patients within critical care.

The trust undertakes mandatory reporting SSI surveillance to the PHA on orthopaedic surgery, cardiac surgery, neurosurgery and caesarean section delivery. Results of audit and surveillance are reviewed within the relevant governance structures for example Perioperative Critical Care Improvement Team (POCCIT) and Safety Implementation Team (SIT).

4.7 Ventilated (or tracheostomy) care

Ventilator-associated pneumonia (VAP) is pneumonia that develops 48 hours or longer after mechanical ventilation is given by means of an endotracheal tube or tracheostomy. For organisations to comply with this section they must ensure that guidance on the prevention and care of a patient with VAP is in place and monitored.

Full compliance was achieved in this section of the audit tool. A care bundle with critical care points was available. Staff displayed good knowledgeable on best practice in the prevention and care of a VAP.

Documentation evidenced monitoring of compliance with the care bundle. Regional VAP surveillance is carried out and forwarded to the PHA. Results of audit and surveillance are reviewed by the critical care management team and the trust wide HCAI group.

There have been no VAPs in the unit since 2012, this is commendable.

4.8 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.

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

A policy/guidance was available however was past its review date of March 15. Enteral feed is stored and disposed of in line with best practice. Overall staff displayed good knowledge on the management of an enteral feeding system; insertion, administration, set up and care.

Inspectors were advised that staff do not routinely aspirate patient enteral lines as patients are on continual feeds. This is due to consultant request, as gaps in feeding can affect patient blood sugar levels. However the unit manager discussed this with dietetic staff, it was advised that the practice of line aspiration is under review. Some staff were aspirating and recording the pH of the aspirate during the feeding process this is not unit practice and is to be reviewed by the unit manager. Inspectors observed that enteral feeding systems are not labelled. This is not part of current trust policy (Refer to Recommendation 3)

When necessary, staff adhere to guidance on the care of a stoma site from the trust stoma nurse or tissue viability nurse. Update/ refresher training for longer term staff include nasogastric lines as outlined in section 4.2 of this report.

In year one quality improvement plan it was advised that the senior nurse was to audit compliance with the enteral feeding protocol in conjunction with the dietetic team. We were unable to evidence compliance monitoring.

11. **It is recommended that compliance with the enteral feeding protocol and guidance is audited and actions plans developed were issues are identified. Repeated.**

4.9 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 full compliance in this section of the audit tool. Evidence of practice was obtained through review of documentation and speaking with staff.

An up to date MRSA screening and treatment policy and care pathway is in place and known to staff.

An MRSA bacteremia isolated in March 2015 was isolated from a sample of blood taken on the patient admission to the unit and not attributed to the CCU. The inspection team was informed by the IPC nurse that six patients colonisied with MRSA have been isolated and nursed within the unit (four out of six samples identified infection on admission). Adherence to the MRSA screening and treatment policy and completion of the MRSA care pathway, including isolation is audited. The IPC team reviews the management of patients that have had an MRSA bacteraemia as part of the RCA. The RCA is initiated within five days of the event.

5.0 Summary of Recommendations

The Regional Critical Care Audit Tool

1. It is recommended that infection prevention and control staffing levels are reviewed to facilitate daily visits to the unit. **Repeated.**

2. It is recommended that audits and incidents should become a standard item on local staff meeting agenda. **Repeated.**

3. It is recommended that the intranet Unscheduled Care/Emergency Care HUB should be updated to contain all policies relevant to critical care. All IPC policies that have past their review date should be updated. All staff should be aware of how to access these policies. **Repeated.**

4. It is recommended that information leaflets for relatives and visitors should be updated and developed. Leaflets should detail the concept of care below the elbow and adherence to the dress code policy were appropriate. **Repeated.**

5. It is recommended that the upgrading of single room facilities should continue. As part of any refurbishment/new build planning, adherence to core clinical space recommendations and an improvement in the facilities available should be reviewed. There should be on-going review of the layout and design of the unit for maximum space utilisation. **Repeated.**

6. It is recommended Carevue is implemented within the unit. All staff should be updated on the trust communication flow chart on the management of multi resistant organisms.

7. It is recommended that an IPC nursing care plan is in place for patients with a known infection. **Repeated.**

The Regional Clinical Practices Audit Tools

8. It is recommended that longer term staff receive update training and competency assessment on the insertion and care of invasive devices.

9. It is recommended that an audit of staff competence and adherence to guidance on blood culture technique is carried out. Staff should be regularly updated on the results of blood culture analysis. **Repeated.**

10. It is recommended that a unit based pharmacist is in place.

11. It is recommended that compliance with the enteral feeding protocol and guidance is audited and actions plans developed were issues are identified. **Repeated.**

6.0 Key Personnel and Information

Members of RQIA's Inspection 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:

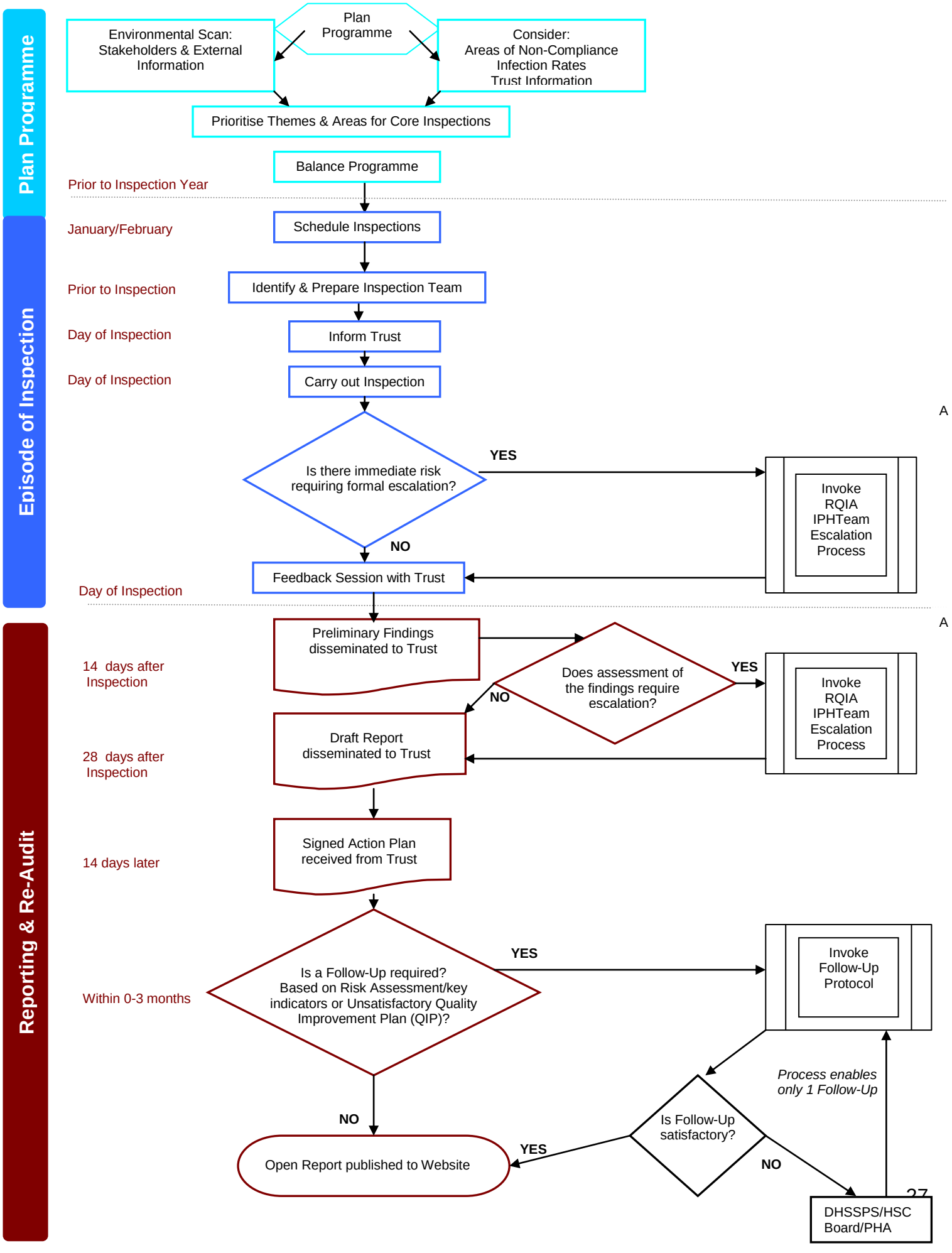
Brenda Creaney	Executive Director of Nursing
David Robinson	Co-Director Nursing
Brian McCloskey	Clinical Director, Critical Care Services
Stephen Austin	Clinical Director, Anaesthesia
Martin Duffy	Consultant, Lead Clinician Critical Care, Mater Hospital
Tara Clinton	Service Manager, Critical Care
Jane Sheridan	Clinical Co-ordinator, Critical Care
Tracey Price	Critical Care Manager
Janeen McKeown	Senior Infection Prevention and Control
Shaun McCook	Divisional Operations Manager, Estates
Mari Rush	Patient and Client Support Services, Assistant Manager

7.0 Augmented Care Areas

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

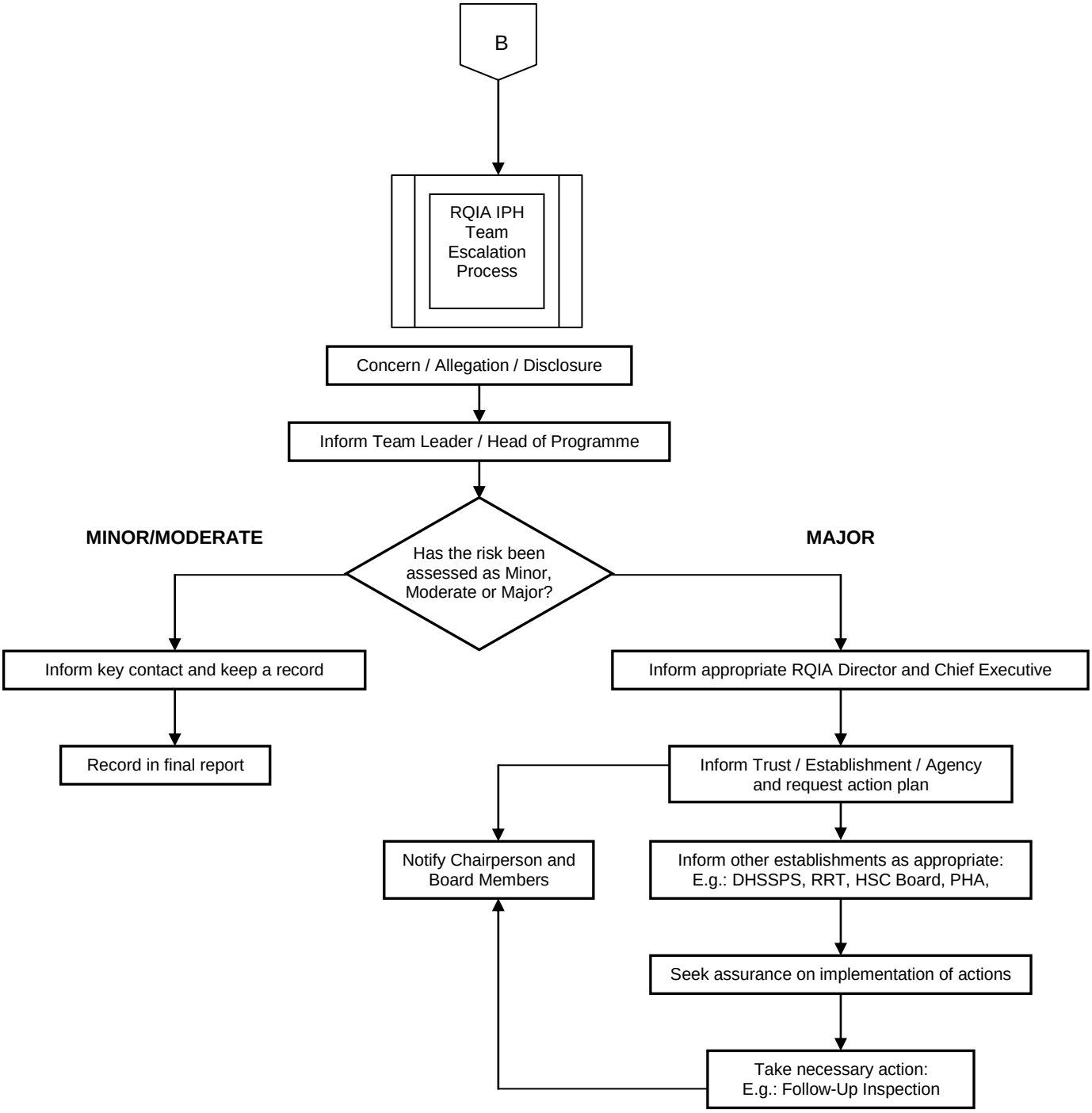
- neonatal and special care baby units
- paediatric intensive care
- all adult intensive care which includes cardiac intensive care
- burns units
- renal (dialysis) units
- renal transplant unit
- high dependency units (HDU)
- haematology
- oncology

8.0 Unannounced Inspection Flowchart



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 Critical Care Audit Tool				
1.	It is recommended that infection prevention and control staffing levels are reviewed to facilitate daily visits to the unit. **Repeated.**	Senior sisters Critical care BHSCT	IP&C team are available via telephone for advice. BHSCT Critical Care Service are in the process of recruiting 1.0 WTE Infection Control nurse.	March 2016
2.	It is recommended that audits and incidents should become a standard item on local staff meeting agenda. **Repeated.**	Senior nurses Critical Care Belfast Trust CCMT.	Audits and incidents are presented and discussed at the Medical Audit and at Governance meetings. Nursing staff review at monthly senior sister and monthly staff meetings. Audits and incidents are included in both agenda and minutes of staff meetings, and are also discussed at daily safety briefings. Discussed at monthly Critical Care Management Team meetings.	March 2016
3.	It is recommended that the intranet Unscheduled Care/Emergency Care HUB should be updated to contain all policies relevant to critical care. All IPC policies that have past their review date should be updated. All staff should be aware of how to access these policies. **Repeated.**	Senior sisters and CCMT (Critical Care Management Team) CCaNNI	Work in progress. All policies to be included in the Critical Care aspect of the Hub. To be discussed at CCMT meeting (Critical Care Management Team) and with CCaNNI (Critical Care Network at Northern Ireland) to discuss policies most relevant to Critical Care.	July 2016

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
4.	It is recommended that information leaflets for relatives and visitors should be updated and developed. Leaflets should detail the concept of care below the elbow and adherence to the dress code policy were appropriate. **Repeated.**	Senior nursing team.	Leaflets are currently in draft form with expected completion within three months. Leaflets will detail the concept of care below the elbow and adherence to the dress code policy were appropriate.	April 2016
5.	It is recommended that the upgrading of single room facilities should continue. As part of any refurbishment/new build planning, adherence to core clinical space recommendations and an improvement in the facilities available should be reviewed. There should be on-going review of the layout and design of the unit for maximum space utilisation. **Repeated.**	Senior management team.	On Capital Bid's list and Risk Register. Allocation dependent upon available Trust Capital.	January 2017
6.	It is recommended Carevue is implemented within the unit. All staff should be updated on the trust communication flow chart on the management of multi resistant organisms.	Senior management team.	Carevue is on the Capital Bid's list. Communication flow chart to be on Team meeting Agenda's and also included in daily safety briefs.	March 2017
7.	It is recommended that an IPC nursing care plan is in place for patients with a known infection. **Repeated.**	Senior nurses Critical Care Belfast Trust	Create awareness through team meetings and safety briefs.	April 2016

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
The Regional Clinical Practices Audit Tools				
8.	It is recommended that longer term staff receive update training and competency assessment on the insertion and care of invasive devices.	Senior Sisters and education team critical care.	Learning and Development team and Clinical Educator leading. To update staff, audit and ensure competency.	March 2016
9.	It is recommended that an audit of staff competence and adherence to guidance on blood culture technique is carried out. Staff should be regularly updated on the results of blood culture analysis. **Repeated.**	Senior Sisters and education team critical care.	Learning and Development team to take forward to develop a plan for training on a rotational basis for the three sites. IP&C team to provide an updated Blood Culture Policy with advice on audit and evidence compliance. Have an agreed Tool and explore Audit findings. To be discussed at CCMT meeting.	April 2016
10.	It is recommended that a unit based pharmacist is in place.	Senior management team.	A business case is being produced for 0.5 WTE pharmacist for Critical Care.	July 2016
11.	It is recommended that compliance with the enteral feeding protocol and guidance is audited and actions plans developed were issues are identified. **Repeated.**	Senior Sisters and Senior management team.	Enteral feeding to be audited. Trust Policy needs updated. To be reviewed at Senior Sisters meeting. To be discussed at CCMT for standardisation throughout the three Critical Care units.	April 2016

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