The Regulation and Quality Improvement Authority

RQIA
Unannounced Infection Prevention/Hygiene Augmented Care Inspection

Royal Belfast Hospital For Sick Children

11 and 12 March 2015

informing and improving 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

An unannounced inspection was undertaken to the Royal Belfast Hospital for Sick Children (RBHSC) Paediatric Intensive Care Unit on 11 and 12 March 2015. The inspection team comprised of three RQIA inspectors. Details of the inspection team and trust representatives attending the feedback session can be found in Section 7.

The Paediatric Intensive Care Unit (PICU), based at the Royal Victoria Hospital (RVH) site, is part of the Belfast Health and Social Care Trust and provides paediatric general intensive care and high dependency services. It is commissioned for 12 intensive care beds. The unit cares for patients from 0 to 14 years of age, but on occasions will take patients up to 16 years of age depending on their needs and whether they have been handed over to adult services.

The unit provides regional intensive care services for patients with life threatening illness, following major and complex surgery and serious accidents. Patients in high dependency care are generally less ill than those in critical care but still require organ support which cannot be provided in an ordinary ward.

The critical care unit was assessed against the following regionally agreed standards and audit tools:

- Regional Critical Care Infection Prevention and Control Audit Tool.
- Regional Infection Prevention and Control Clinical Practices Audit Tool.
- Regional Healthcare Hygiene and Cleanliness Standards and Audit Tool.
- Neonatal Infection Prevention and Control Audit Tool.

This inspection is the first of a three year cycle of inspection carried out within this area. 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 critical care unit at the RVH was working to comply with the above standards and audit tools.

Inspectors observed:

- The unit achieved overall compliance in all three standards.

Inspectors found that the key areas for further improvement were:

- Layout, design and storage capacity within the unit.
- The management of blood culture.
- PICU should liaise with the neonatal unit and other augmented care areas within the trust to ensure good practice and adherence to policies and guidelines are shared.

Inspectors observed the following areas of good practice:

- Inspectors noted that medical staff have tried to forge links with PICUs in the United Kingdom to bench mark practice and infection rates.
- Staff have introduced a booklet called “what matters to me today” which provides children and their families the opportunity to tell hospital staff what matters most to them. (Picture 1)
- Staff received a quality award for their daily safety briefings. (Picture 2)
- A consultant dedicates time to be part of new nursing staff’s induction.
- A new communication flowchart on the management of multi resistant organisms within critical care is being developed by the infection prevention and control team (IPCT).

Picture 1: “What matters to me today”

Picture 2: Safety briefing and patient safety quality award

The inspection resulted in 41 recommendations for improvement listed in Section 6.

Detailed lists of the findings are available on request from RQIA Infection Prevention and Hygiene Team.

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 Health and Social Care Trust (BHSCT), and in particular all staff at the Paediatric Intensive 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 / Neonatal Infection Prevention and Control Audit Tool.**

Areas inspected	
Local Governance Systems and Processes	87
General Environment – Layout and Design	67
General Environment – Environmental Cleaning	87
General Environment – Water Safety	100
Clinical and Care Practice	100
Patient Equipment/ *Paediatric Critical Care Patient Equipment	81
*Preparation, Storage and Use of Breast and Specialised Powdered Infant Milk	76
Average Score	**85**

* These sections were taken from the Neonatal Audit tool as they were appropriate to PICU.

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

Areas inspected	
Aseptic non touch technique (ANTT)	94
Invasive devices	94
Taking Blood Cultures	*76
Antimicrobial prescribing	82
Clostridium *difficile* infection (CDI)	95
Surgical site infection	100
Ventilated (or tracheostomy) care	N/A
Enteral Feeding or tube feeding	93
Screening for MRSA colonisation and decolonisation	*95
Average Score	**91**

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

Compliant:	85% or above
Partial Compliance:	76% to 84%
Minimal Compliance:	75% or below

The Regional Healthcare Hygiene and Cleanliness Audit Tool

Compliance rates are based on the scores achieved in each section of the Regional Healthcare Hygiene and Cleanliness Audit Tool. Percentage scores can be allocated a level of compliance using standard compliance categories below.

Table 3: The Regional Healthcare Hygiene and Cleanliness Audit Tool Compliance Levels

Areas inspected	
General environment	85
Patient linen	86
Waste	95
Sharps	89
Equipment	78
Hygiene factors	96
Hygiene practices	92
Average Score	**89**

Compliant:	85% or above
Partial Compliance:	76% to 84%
Minimal Compliance:	75% 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 contain 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 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	
Local Governance Systems and Processes	87
General Environment – Layout and Design	67
General Environment – Environmental Cleaning	87
General Environment – Water Safety	100
Clinical and Care Practice	100
Patient Equipment/ *Paediatric Critical Care Patient Equipment	81
*Preparation, Storage and Use of Breast and Specialised Powdered Infant Milk	76
Average Score	**85**

The findings indicate that 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 compliance in this section of the audit tool.

Leadership and Management

The unit lead sister displayed good leadership, management and knowledge on infection prevention and control and the necessary measures to take in managing infection within the unit.

Inspectors were informed that the unit was appropriately staffed. In the past year thirty new staff have been appointed to the unit.

Infection prevention and control nurses (IPCNs) are available from 8am to 5pm Monday to Friday within the trust. In the evenings and at weekends the

on call Medical Microbiologist provides IPC advice. Inspectors were informed that although IPC trust staff did not visit the unit on a daily basis they are readily available for advice by phone. Inspectors were informed that visits by IPC staff were increased for outbreak management. Staff commented that they had a strong relationship with the IPC team who are very supportive in providing advice and assisting with IPC initiatives.

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

Within the unit a Sister and nominated staff have been designated as IPC link staff and rotate attendance at hospital link meetings. IPC information from link meetings is cascaded to other unit staff for learning via daily safety briefings. Staff have protected time for their IPC link role.

Review of Documentation

A review of documentation evidenced participation at management level in meetings such as: the Augmented Care Areas Sub Group, RBHSC Ward Managers, and Critical Care Network Northern Ireland, Paediatric Sub group. There was a forum for Band 7 meetings but IPC, HCAIs or Root Cause Analysis (RCA) learning were not a standing item on the agenda. There was little formal evidence to show how information was disseminated to frontline staff, other than the daily staff safety briefings.

2. **It is recommended that a formal process is put in place for the dissemination of information and learning for ward based staff and that IPC should be a standing item on the agenda of all unit and staff meetings.**

A review of documentation evidenced that incidents relating to IPC were appropriately reported and acted on. MRSA and C-difficile infections (CDI) are investigated by a Root Cause Analysis (RCA) process as per trust policy. Documentation from RCAs evidenced that a multidisciplinary approach was taken to this process and learning points were fedback to staff though the daily safety briefing.

All staff questioned during the inspection had a good knowledge of IPC policies and procedures, and were able to access the relevant documents on the trust intranet site.

The occupational health department (OHD) has developed a new policy entitled ‘Screening and vaccination of staff against infectious diseases in the workplace – Guidelines (2014)’. This has attached links to policy and guidelines on hepatitis B, Measles Mumps and Rubella, Tuberculosis and Varicella Zoster. The new updated MRSA policy has advice for staff on screening which should only be initiated by the IPC team, in liaison with the OHD. Advice for staff having symptoms of infective vomiting and diarrhoea is available within the IPC regional manual, included within the IPC area of the electronic HUB on the staff intranet. Staff members questioned, were

knowledgeable of the appropriate guidance and action to take in the event that they develop an infectious condition.

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 and the implementation of high impact interventions were undertaken to improve IPC practices and environmental cleanliness. Evidence was available to show that audit results were reported to unit staff through the daily safety briefing, however there were no action plans available to support actions taken.

Inspectors evidenced that the IPC team had independently validated practices within the unit. Validation audits included hand hygiene, aseptic non touch technique (ANTT), MRSA management and environmental audits.

3. **It is recommended that robust action plans are developed and actioned to prevent and control any increase in the incidence of infection within the unit.**

Hand hygiene and environmental cleanliness performance data from audits was displayed publicly at the entrance to the unit for visitors and staff to view. The trust representatives advised that the trust is currently working to standardise the information displayed in an easy to read format.

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 of infection.

Local surveillance data is analysed by the microbiology and the IPC teams and presented at the trust HCAI improvement team meeting.

When questioned staff were aware of the screening policies but there was no written screening policy in place.

4. **It is recommended that written guidance is developed to guide staff on screening within the unit.**

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.

Accessing relevant trust policies and the ability to demonstrate essential knowledge of key IPC legislation is included as an aspect of the critical care networks national competencies. All unit staff must progress through step one of the competency framework. IPC is a competency included within this framework and assists staff in developing knowledge, understanding and enhance skills that contribute to IPC in critical care. The competencies are set out to provide a pathway of progress, starting with a novice in critical care to becoming a competent and safe practitioner.

All unit staff had participated in the trust corporate welcome and introduction to the basic principles of IPC. IPC training is mandatory within the trust, 75 per cent of unit staff have completed this face to face training. The unit has a dedicated clinical educator who is responsible for staff training. Staff stated the past year has been a challenge to facilitate the preceptor and induction training for the large number of newly appointed staff.

5. **It is recommended that all staff attend mandatory IPC training.**

An educational IPC DVD for critical care has been produced and filmed in the critical care clinical environment. The video includes; the chain of infection, hand hygiene, transmission based precautions and personal protective equipment, ANTT, environmental cleanliness including safe management and disposal of linen and sharps.

Information on specialist conferences such as CCaNNI on 16 April 2015 are publicised and staff encouraged to attend.

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 advice relatives or visitors of infection prevention and control precautions; hand hygiene leaflets, general visitor information and display posters. Posters on the door to the unit detail visiting times, and advice when not to visit, for example when not feeling well.

All relatives/visitors to the critical care unit receive a “Welcome to PICU” information booklet. The booklet details staff roles and how parents and relatives can be involved in their child’s care. The booklet does not include information or advice relating to IPC, enhanced hygiene procedures or the concept of ‘bare below the elbow’, i.e. not to wear false nails, jewellery; stoned rings, watches and bracelets and also not to bring outside coats into the unit. However inspectors were informed that relatives receive one to one guidance on how, when and where to wash their hands, and advice on not wearing out door clothes on to the unit. This was recorded in the patient’s file and inspectors noted relatives complying by hanging outdoor clothes in a designated relative’s area in the lobby at the entrance to the unit.

6. **It is recommended that the patient and relative information booklet is updated to include; IPC information and the concept of bare below the elbow.**

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, decontaminate equipment and to ensure effective isolation.

The unit achieved minimal compliance in the layout and design of the environment.

Bed spaces within PICU are not a standardised size, on average a bed space is 19.2sqm (Picture 3). This does not achieve 80 per cent of the minimum dimensions currently recommended for existing units by the DHSSPSNI of 26sqm. The linear distance between bed heads of 4.6m was not achieved in all occasions within the unit.

Picture 3: View of bed space

Inspectors noted that, although the core clinical space did not meet current recommended requirements, staff were working within these limitations to deliver safe and effective care. Inspectors observed that bed spaces were free from clutter during the inspection.

There were two single rooms and a double side room available within the unit. These rooms were used for the isolation of patients to control the spread of infection or for the protection of immunosuppressed patients. This is not in line with number of side rooms recommended by the DHSSPS and outlined in the audit tool; a minimum of four single rooms per eight beds is required.

There was no dedicated equipment store, store for equipment in need of repair or a room for cleaning equipment.

Inspectors evidenced that ventilation systems were routinely monitored, serviced and cleaned by the estates department.

The design of the unit does not promote minimal footfall or movement through the unit. Staff were observed walking through the unit from the theatre area to offices just outside the entrance to the unit.

7. **It is recommended that, there should be a review of the layout, design and storage areas of the unit for maximum space utilisation. As part of any refurbishment/new build planning, core clinical space recommendations should be complied with.**

8. **It is recommended that a review of staff access to the unit is carried to ensure there is minimum foot fall.**

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 and the unit was compliant in the section on environmental cleaning. Environmental cleaning; guidelines, audit and staff competency based training were in place and reviewed. On questioning, staff displayed good knowledge on appropriate cleaning procedures. There was a regular programme of de-cluttering and environmental auditing in place. Inspectors noted however that cleaning guidelines were not available for staff on enhanced and terminal cleans. Terminal cleans are not signed off by domestic staff or the unit sister; and are also not randomly validated by the domestic supervisors.

9. **It is recommended that guidance on enhanced and terminal cleans are available to staff and that terminal cleans are signed off by domestic staff or the nurse in charge, and randomly validated by domestic supervisors.**

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 compliant in relation to water safety. An overarching trust water safety management plan and individual unit risk assessment plan were in place. The management plan has recently been reviewed in January 2015 and includes updated guidance as per Water Systems Health Technical Memorandums 04-01: Addendum, Pseudomonas aeruginosa – advice for

augmented care units. Inspectors were informed that the water safety individual risk assessment is currently being reviewed.

Collection of tap water samples to facilitate microbiological organism testing and analysis was carried out. The trust carries out scheduled water sampling for pseudomonas *aeruginosa* from all outlets in augmented care areas on a quarterly basis. All results of water analysis are reported to the trust water safety group and the Augmented Care group for review. The water safety group is inclusive of staff from IPC, estates and clinical representatives.

Inspectors were informed that since the new Ultra Violet technology incorporated taps had been installed there had been no instances of pseudomonas *aeruginosa* identified from water testing. A system was in place to address any issues raised with the maintenance of hand washing sinks and taps.

Estates staff have introduced an automatic tap flushing system on the shower in the visitor's room and have carried out work to remove dead legs in the water system.

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 neonate movement, infection control screening policies and adherence to DHSSPS and local guidance on cleansing the critical care.

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

The nurse in charge maintained a daily record of patient placement and bed identification in the allocation book/nursing diary. This allowed for a retrospective patient placement system to identify which bed the patient was in during their stay in critical care. In the event of an outbreak staff can manually check this allocation book to identify patient placements, this can be a time consuming exercise.

To facilitate the continuity of care following the transfer of a patient to another unit, staff members complete the PHA 'Notification of Infection Status Patient Transfer Form'. On this form staff record the infection status of the patient; confirmed or suspected and if the patient had a previous known history of a multi-resistant organism or other infection risk. Microbiological specimen results, including pending results must be included on the transfer form. Staff were also required to record any IPC precautions that needed to be initiated and whether the patient had been involved in an outbreak.

Screening policies and procedures were in place and known to staff. All patients were routinely screened on admission for MRSA and thereafter on a Monday, Wednesday and Friday. Patients transferred to the unit from outside Northern Ireland are maintained in isolation until screening results are

negative. The trust MRSA policy outlines the processes for swabbing and decolonisation.

Inspectors were informed that if a patient's critical care admission screens or if their results following discharge or transfer to another ward were positive, the receiving or transferring wards were routinely informed if the results were clinically significant. A draft communication flowchart has been devised by the BHSCT IPC team on the management of multi-resistant organisms within critical care. It highlights the nominated responsibilities of staff in informing receiving or transferring units of results and patient infection status.

Staff use warmed wipes for washing children up to two years of age and with water from a source of known quality for children of two years plus. Staff used alcohol rub after hand washing when caring for patients. Staff were aware of risk factors that cause skin injury.

3.4 Paediatric Critical Care Patient Equipment

The unit cares for a range of patients from 0 – 14 years of age and the range of equipment used could best be assessed using the paediatric critical care patient equipment section from the neonatal audit tool. For organisations to comply with this section they must ensure specialised equipment is effectively cleaned and maintained. Audits of equipment cleaning and education on the use of equipment should be available.

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

Staff have received one off training from the manufacturer on cleaning incubators, but there was no routine competency based assessment at ward level. Staff were unaware of guidance for the dismantling and cleaning of the incubator on discharge or whilst in use. Staff should contact the IPC team for specific advice on cleaning incubators while in use as staff were using a cleaning disinfectant product. Staff also require updating on the use and actions to take in relation to incubator reservoirs, and filters. Trigger tape used to indicate equipment has been cleaned was present on incubators but not dated/signed.

Other issues identified were in relation to cot and incubator mattresses not checked as part of routine audit, linen was in place on mattresses prior to use. There were no local guidelines on the use of microwave sterilizing bags to ensure standardization of advice; parents only receive verbal advice on the use of the bags.

The transport incubator is not dismantled and cleaned in a designated area and was stored in the tech room. There was rust on the metal cooling blanket machine. The portable x-ray machine required cleaning.

Adherence to nursing cleaning schedules is not audited by senior staff.

Guidance for cleaning the transport incubator, microwave steriliser and breast pumps was not available. The cleaning of specialised equipment was not audited by senior nursing staff.

10. **It is recommended that PICU staff liaise with the neonatal unit and IPC staff to ensure guidelines and best practice in relation to patient equipment is shared and implemented.**

3.5 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 partial compliance in this section of the audit tool.

A local risk assessment had not been carried out in relation to existing procedural arrangements for the collection and storage of breast or formula milk. Information was not available for parents on the collection/use/labelling and transportation of expressed breast milk at home. Breast milk labelling did not include; name/DOB/date and time of collection or use by date. Formula milk labelling did not include date and time of preparation. Staff required updating on the storage and use of breast and specialised infant milk.

There was no signage in place to denote ‘designated the milk fridge only’, the milk fridge was used to store food products; sandwiches, yoghurt. This was addressed by unit staff. The inside of the milk fridge required cleaning.

Temperature checks were not carried out on receipt of donor breast milk and milk fridge temperature checks were inconsistently recorded.

11. **It is recommended that PICU staff liaise with the neonatal unit and IPC staff to ensure trust guidelines and best practice in relation to preparation, storage and use of breast milk and specialised powered infant formula is shared and implemented.**

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 have 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	
Aseptic non touch technique (ANTT)	94
Invasive devices	94
Taking Blood Cultures	*76
Antimicrobial prescribing	82
Clostridium *difficile* infection (CDI)	*95
Surgical site infection	100
Ventilated (or tracheostomy) care	N/A
Enteral Feeding or tube feeding	*93
Screening for MRSA colonisation and decolonisation	*95
Average Score	**91**

* 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 improvement was required in the collection of 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 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 a compliance score in this section of the audit tool. The ANTT policy was in place and accessible on line (HUB) for staff. The policy was completed in September 2014 and is due for review September 2015. The policy identifies competency training and assessment as key principles in ensuring adherence to policy. The policy contains a range of hospital and community ANTT pictorial guidelines.

Nursing staff receive ANTT training by on line presentation and face to face training and is part of mandatory training for all staff. Only with a few exceptions, all nursing staff have had ANTT training. Three members of the nursing staff have been trained as ANTT assessors, a further two staff have been nominated for this role. Inspectors were informed that ANTT assessors will also carry out spot checks of ANTT practices. The IPCT independently validate ANTT practice.

ANTT assessments of PICU staff are to be carried out yearly, the assessment tool used is within the ANTT policy. Evidence to support this ongoing assessment of staff was in place.

On observation staff displayed excellent application of the key elements of ANTT in a number of practice interventions. Staff on questioning were able to advise when to use ANTT on a range of interventions

Medical staff within the unit have not received any ANTT training.

12. **It is recommended that a programme of ANTT training and skills assessments be introduced for all clinical staff.**

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. Evidence of practice was obtained through observation, review of documentation and speaking with staff.

Policies/procedures for the insertion and on-going management of invasive devices were in place however a number had passed their revision date without being reviewed. The peripheral venous cannulation (PVC) policy was due for review in May 2014, chest drain policy was due in 2013 and the central venous catheter policy (CVC) was due for review in 2011.

13. **It is recommended that all trust policies/guidelines are reviewed and updated as required to ensure continued accuracy of guidance for staff.**

Newly qualified staff as part of perceptorship, complete competency based training (Paediatric Preceptorship Portfolio) in the management of IV infusions and IV sites including ANTT principles.

Records of continued update and refresher training in the management of invasive devices could not be evidenced for longer term staff. There needs to be a clear comprehensive training programme to ensure that longer term staff are updated in the competencies involved in the management of invasive devices.

14. **It is recommended that a programme of training and competency assessment in the management of invasive device is developed for all clinical staff within the unit.**

Unlike critical care units throughout Northern Ireland , there is no mandatory requirement for the PICU to carryout device associated infection surveillance. Over the last two weeks the consultant intensivist within PICU has commenced a small study of device associated infection in relation to urinary catheters (CAUTI) and central lines (CLABSI). We note that work is also being carried out to compare performance rates with a similar unit in Glasgow. RQIA would commend this work and would recommend that resources are put in place to build upon this quality improvement work.

15. **It is recommended that staff continue to engage with other PICUs to benchmark surveillance data.**

Observed documentation for a range of invasive devices was satisfactorily completed (PVC, CVC, nasogastric (NG)tube)

Care Bundles: Week Commencing 2/03/15

- CVC - Ongoing care 100 per cent
- PVC - Ongoing care 100 per cent
- SRC - Ongoing care 100 per cent

Care bundle records for January and February 2015 indicate that 100% compliance on the above elements had been maintained. The inspection team is encouraged with compliance with best practice.

There have been no MRSA bacteraemia throughout the year April 2014-April 2015.

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 partiall compliance in this section of the audit tool. Immediate attention is required to bring this section to a compliant standard.

A trust blood culture policy was available however, it was due for review in 2012; inspectors were informed that it is currently being reviewed and were able to review a draft copy.

Evidence of practice was obtained through review of documentation and speaking with staff. Staff demonstrated good knowledge on how and why to take a blood culture.

Nursing staff are primarily responsible for the obtaining of blood cultures within the unit. Inspectors reviewed the notes of a number of patients that had blood cultures obtained. Inspectors note that when a blood culture is obtained the clinical indicator for taking is not always recorded.

16. It is recommended that all required information on the collection of blood cultures is consistently recorded.

Nursing staff receive face to face training on obtaining a blood cultures within PICU. Observation of the procedure and assessment by a nominated mentor appears to be the approach of blood culture training.

The IPC team include the theory of taking of blood cultures as part of medical staff induction and the IPC team plan to develop a DVD on the procedure.

Competence with this skill is also part of medical staff members work based assessments; commonly known as DOPS - Directly Observed Procedural Skills. From discussions, medical staff had a good knowledge in line with best practice on how and why to take a blood culture.

The hospital laboratory regularly informed clinical/nursing/IPC staff of positive blood cultures within the unit. Systems are in place to compare blood culture results between augmented care areas within the trust and this data is reviewed at the trust HCAI committee(via the lead IPCN) and was disseminated to the unit staff on a quarterly basis.

There was no evidence available to show that the incidence of false positives results are discussed by clinical staff within PICU.

17. **It is recommended that staff devise an action plan to review the incidents of false positive results.**

There is a routine system in place to monitor and review the rate of positive and false positive blood cultures within the unit. The rate of blood culture contamination should not exceed 3 per cent. Documentation provided for the inspection team evidenced that for the fourth quarter of 2014, the incidence of contamination was 0.65 per cent. These results are an indication that blood cultures are being collected with proper attention to aseptic technique.

There are currently no systems in place to monitor compliance with best practice when taking blood cultures.

18. **It is recommended that a system should be initiated to routinely monitor compliance with best practice when collecting blood cultures.**

4.4 Antimicrobial prescribing

Antimicrobial 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 were in place. 'Guidelines for the empirical antibiotic prescribing in hospitalized children 0-14yrs in BHSCT. Specific guidelines on antimicrobial prescribing within PICU is currently being developed by the Infectious Disease (ID) consultants and cascaded to medical staff as part of induction training. Guidelines are available on the trust intranet site and as a pocket guide and in November 2014 the BHSCT launched an antimicrobial 'Microguide' app which is available on smart phones.

An antimicrobial ward round takes place Monday, Wednesday and Friday and is attended by an ID consultant. Inspectors were informed that the ID consultants are very supportive in providing antimicrobial prescribing advice throughout the week. At weekends the microbiology team contact the unit by telephone to provide advice. This ensures that there is direct microbiological advice at the bedside and that antimicrobial prescribing is reviewed.

The unit has a dedicated pharmacist. There are currently no computer aided prescribing tools in use.

19. **It is recommended that pharmacy cover within the unit is reviewed in line with critical care core standards. Electronic prescribing tools should be introduced for use within the unit as appropriate.**

A trust wide antimicrobial steering committee was in place. This team centrally reviews audit results, anti-microbial usage and incidents.

Antimicrobial usage was reviewed in 2012 as part of a Point Prevalence Survey. Inspectors were informed that prescribing was compliant with the local antimicrobial prescribing policy.

Antimicrobial usage was not audited within the unit in line with antimicrobial prescribing guidance.

20. **It is recommended that antimicrobial usage should be routinely audited in line with current antimicrobial prescribing guidance.**

Inspectors were informed that receiving timely results from the virology laboratory is an issue. Timely results are essential so antimicrobial prescribing decisions can be made at the earliest opportunity.

21. **It is recommended that staff liaise with virology laboratory staff to ensure results are reported in a timely manner.**

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 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 updated adult trust CDI policy and care pathway is in place. Inspectors were informed that this guidance although for adult is to be used for the management of paediatric patients with CDI. The adult policy includes prescribing guidance for the adult patient with CDI. If the policy is to be used in paediatrics it should be amended to provide guidance for the needs of the paediatric patient with CDI.

22. **It is recommended that the CDI policy be updated to provide guidance for the needs of the paediatric patient.**

The inspection team was informed that it is only on a very rare occasion that CDI is reported within paediatric patients. There had been no CDI attributed to PICU as the source, throughout the year April 2014 to April 2015. Staff however managed a patient with CDI in September 2014. During discussions with staff, it was evident that they were knowledgeable in the management of CDI.

Audit tools have been developed to monitor adherence with the management of CDI, to include completion of the care pathway.

The IPC team review the management of patients that have had a CDI as part of the RCA process.

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. The trust undertakes mandatory reporting SSI surveillance to the PHA on orthopaedic surgery, neurosurgery and caesarean section delivery. Results of surveillance are reviewed at relevant governance groups.

Staff displayed good knowledge of post-operative wound care of patients to prevent SSI. Staff can access specialist nurses such as the stoma and tissue viability nurses for advice and support for patients.

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.

This section was not marked on this occasion.

Unlike critical care units throughout NI, there is no mandatory requirement for the PICU to carryout VAP surveillance, so no figures can be attained at this inspection.

There have been recent efforts within the unit to introduce a VAP care bundle. Staff recognised that the adult VAP care bundle used within RICU is not appropriate for use in PICU and would require a specifically tailored VAP care bundle.

In June of 2014, unit staff made contact with Great Ormond Street Children's hospital where ongoing work in VAP had progressed in developing a care bundle and an audit tool.

RQIA would support the introduction of a VAP care bundle within PICU and the recording of VAP figures as a quality indicator that could be benchmarked against other similar units throughout the UK.

23. It is recommended that a VAP care bundle be introduced to PICU.

Despite a VAP care bundle not being introduced within the unit, staff members were knowledgeable in the elements of the VAP care bundle. Most of these elements are implemented and documented on various different recording forms e.g. positional charts.

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 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.

Inspectors were informed that the trust is to adopt new GAIN guidelines for caring for an infant, child, or young person who requires enteral feeding. The guidelines are due for launch on 18 March 2015. Staff use a department protocol for paediatric intensive care enteral feeding guidelines which is placed in a staff guidance folder at each bed space.

Enteral feed was stored and disposed of as per trust policy and in line with best practice. Staff had good knowledge on the management of an enteral feeding system; insertion, administration, set up and care.

In the cupboard that enteral feeds are stored, inspectors noted that a bottle of enteral feed was out of date (Jan 2015)

24. It is recommended that staff ensure enteral feed products are in date.

Observed documentation (NG tube position check form) had been completed appropriately. When necessary, staff adhered to guidance on the care of a stoma site from the trust stoma nurse, tissue viability nurse.

Inspectors note that there are currently no systems in place to monitor compliance with enteral feeding protocol and guidance.

25. It is recommended that the trust enteral feeding policy be updated in line with best practice and a system to monitor compliance with best practice developed.

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

An updated MRSA screening and treatment policy and care pathway is in place. The MRSA policy has been updated to include advice on decolonization treatments for children over and under two years of age.

The MRSA care pathway is an adult pathway for the management of MRSA. Inspectors were informed that this care pathway is used for the management of paediatric patients with MRSA within the unit.

26. It is recommended that the MRSA care pathway should be reviewed for use with paediatric patients.

Audit tools have been developed to monitor adherence with the management of MRSA, to include completion of the care pathway.

Adherence to the MRSA policy is not currently audited by staff within the unit. Five patients were screened as MRSA positive within PICU from April 2014 to April 2015.

27. It is recommended that adherence to the MRSA policy is audited and action plans developed.

The IPC team have carried out an MRSA management audit in March 2015. The audit included compliance with isolation and completion of the MRSA care pathway.

The IPC team review 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 Inspection Findings: Regional Healthcare Hygiene and Cleanliness Standards and Audit Tool

The Regional Healthcare Hygiene and Cleanliness Standards and Audit Tool provide a common set of overarching standards for all hospitals and other healthcare facilities in Northern Ireland. Inspections using the audit tool gather information from observations in functional areas including, direct questioning and observation of clinical practice and, where appropriate, review of relevant documentation.

The audit tool is comprised of the following sections:

- organisational systems and governance
- general environment
- patient linen
- waste and sharps
- patient equipment
- hygiene factors
- hygiene practices

The section on organisational systems and governance was not reviewed during this unannounced inspection.

Standard 2: General Environment

For organisations to comply with this standard they must provide an environment which is well maintained, visibly clean, free from dust and soilage. A clean, tidy and well maintained environment is an important foundation to promote patient, visitor and staff confidence and support other infection prevention and control measures.

The Regional Healthcare Hygiene and Cleanliness Audit Tool Compliance Levels

General environment	
Reception	82
Corridors, stairs lift	96
Public toilets	86
Ward/department - general (communal)	84
Patient bed area	92
Bathroom/washroom	N/A
Toilet	93
Clinical room/treatment room	N/A
Clean utility room	71
Dirty utility room	83
Domestic store	86
Kitchen	N/A
Equipment store	81
Isolation	90
General information	77
Average Score	**85**

The findings in the table above indicate that the general environment and cleaning in the critical care unit was of a good standard.

The hospital entrance and reception is the first area of a hospital building that most users encounter. This area should instil a reassuring and welcoming sense of calm, safety and cleanliness. A high standard of cleanliness in these public areas promotes public confidence in the cleaning standards set by the hospital.

The reception area and corridors leading to the unit were generally clean and maintenance and repair was of a good standard. Some issues were identified. There was cigarette debris around the entrance to the hospital and the barrier carpeting from the outer doors to the reception area required cleaning. There was some staining to walls and windows, damage to doors and handrails and dust on the free standing visitor's information computer.

In the public toilets in the parent area within PICU, the shower, toilet bowl and radiator required cleaning. There was minor damage to the wall and the laminate edge of the toilet unit.

The key findings in respect of the general environment for the unit are detailed in the following section.

Critical Care Unit

Within the environment section of the audit tool inspectors found good compliance with the standard of cleaning. The issues identified for improvement in this section of the audit tool were:

- There was dust and debris on some floors, air vents and in some high horizontal surfaces. The carpet in the quiet room and vinyl flooring in the drugs/milk room and dirty utility room had ground in stains. The fabric chairs in the quiet room, high density storage units in the equipment and domestic stores required cleaning. The outside and inside of the blood and milk fridge, the equipment sink in the dirty utility room and hand wash sink in the domestic store required cleaning.
- In the milk fridge room the work surface is small and only partly accessible due to the position of the cupboards. The temperatures on both the drugs and milk fridges were not consistently recorded.
- There was some damage to walls, doors and door frames. Some tables/lockers were old and worn.
- Nursing cleaning schedules were not consistently recorded, they did not detail all equipment, and no validation audits were carried out.
- There were no information leaflets available on C-difficile and no posters on linen segregation or guidance on how to deal with an inoculation injury.
- Not all clinical hand wash sinks had a poster to denote the need to use alcohol gel after hand washing.

Recommendations

28. **It is recommended that staff ensure all surfaces including furniture, fixtures and fittings are clean and in a good state of repair.**

29. **It is recommended that all drug fridge temperatures are consistently recorded.**

30. **It is recommended that nursing cleaning schedules include all equipment to be cleaned, records are completed consistently and validation audits are carried out.**

31. **It is recommended that Information leaflets on C-*difficile* and posters on the segregation of linen and dealing with a sharps injury are displayed.**

32. **It is recommended that a poster on the need to use alcohol gel after hand washing is displayed at each clinical hand wash sink.**

Standard 3: Patient Linen

For organisations to comply with this standard, patient linen should be clean, free of damage, handled safely and stored in a clean and tidy environment. The provision of an adequate laundry service is a fundamental requirement of direct patient care. Linen should be managed in accordance with HSG 95(18) and once published the final DHSSPS Policy for Provision of Health and Social Care Laundry and Linen Services.

Compliance of Patient Linen

Patient linen	
Storage of clean linen	83
Storage of used linen	88
Laundry facilities	N/A
Average Score	**86**

The above table indicates that overall the unit was compliant in the management of patient linen. The storage of used linen achieved a compliant score, the storage of clean linen was partially compliant. Linen was clean, free from damage and stored in the designated store.

Issues identified for improvement in these sections of the audit tool were:

- Clean linen, nappies and pads were removed from protective packing and stored on shelving. Stored equipment was dusty and a sponge support was exposed.
- In the clean linen store the floor under shelving and skirting edges required cleaning.
- Water soluble bags were not always used for linen disposed of into the red infected waste stream.
- Used linen bags were more than 2/3 full.

33. It is recommended that clean linen, nappies and incontinence pads are not removed from their packaging until ready for use.

See recommendation no 26 in the environment section.

34. It is recommended that staff ensure they follow the trust guidance on the correct handling and disposal of used linen.

Standard 4: Waste and Sharps

For organisations to comply with this standard they must ensure that waste is managed in accordance with HTM07-01 and Hazardous Waste (Northern Ireland) Regulations (2005). The safe segregation, handling, transport and disposal of waste and sharps can, if not properly managed, present risks to the health and safety of staff, patients, the public and the environment.

Waste bins in all clinical areas should be labelled, foot operated and encased. This promotes appropriate segregation, and prevents contamination of hands from handling the waste bin lids. Inappropriate waste segregation can be a potential hazard and can increase the cost of waste disposal.

Sharps boxes must be labelled and signed on assembly and disposal. Identification of the origin of sharps waste in the event of spillage or injury to staff is essential. This assists in the immediate risk assessment process following a sharps injury.

Compliance of Waste and Sharps

Waste and sharps	
Handling, segregation, storage, waste	95
Availability, use, storage of sharps	89

4.1 Management of Waste

The above table indicates that the unit achieved good overall compliance in the handling and storage of waste. Issues identified for improvement in this section of the audit tool were:

- Household waste bins were not available at all clinical hand wash sinks; some household waste bin stickers were worn.
- An orange lidded burn bin was being used for the disposal of sharps at the blood gas machine, the bin lid was blood stained.

4.2 Management of Sharps

The above table indicates that the unit achieved good overall compliance in this standard. Issues identified for improvement in this section of the audit tool were:

- The temporary closure mechanism on two sharps boxes were open and the sharps box on the resuscitation trolley in ICU had been used and not changed.

35. It is recommended that all unit staff follow trust policies in the management of waste and sharps.

Standard 5: Patient Equipment

For organisations to comply with this standard they must ensure that patient equipment is appropriately decontaminated. The Northern Ireland Regional Infection Prevention and Control Manual, states that all staff that have specific responsibilities for cleaning of equipment must be familiar with the agents to be used and the procedures involved. COSHH regulations must be adhered to when using chemical disinfectants.

Any unit, department or facility which has an item of equipment should produce a decontamination protocol for that item. This should be in keeping with the principles of disinfection and the manufacturer's instructions.

Compliance of Patient Equipment

Patient equipment	
Patient equipment	78

The above table indicates that the unit achieved partial compliance in this standard.

The issues identified for improvement in this section of the audit tool were:

- Shared patient equipment was not consistently labelled as clean.
- The underside of a commode was stained, there was no trigger tape in place; a urinal was stored on the rack, urine was insitu and not disposed of. Bedpans were old, worn and faecally stained. (Picture 4) These were disposed of by staff. Patient wash bowls were not inverted, stored damp; some required cleaning and had tape residue present.

Picture 4: Soiled bed pan

- The inside of the drugs trolley was stained and the base was rusted and worn. The runners of some trolleys were dusty and cracked e.g. chest drain, catheter trolley. The castors of some stainless steel dressing trolleys required cleaning. The dialysis gas machine trolley was old and rusted.
- The computer on wheels (COW), ECG machine on the resuscitation trolley, and stored ANTT trays required cleaning. The top of the sensory toy unit; was dusty and labels were worn.

36. **It is recommended that general patient equipment must be clean, stored correctly and in a good state of repair. Trigger tape should be used consistently to identify items of equipment that have been cleaned.**

Standard 6: Hygiene Factors

For organisations to comply with this standard they must ensure that a range of fixtures, fittings and equipment is available so that hygiene practices can be carried out effectively.

Compliance of Hygiene Factors

Hygiene factors	
Availability and cleanliness of wash hand basin and consumables	99
Availability of alcohol rub	97
Availability of PPE	100
Materials and equipment for cleaning	89
Average Score	**96**

The above table indicates that the unit achieved good overall compliance in this standard. Clinical hand washing sinks, consumables and PPE were readily available for staff to use. The issues identified for improvement in this section of the audit tool were:

- The dirty utility room sink and taps required cleaning. Domestic trolleys and high static duster required cleaning, staff use detachable coloured rings to designated mop handles NPSA colour. The mop handles were not cleaned between use.

- The COSHH cupboard in the dirty utility room was open. The domestic trolley was on occasion, unattended and open with cleaning solution easily accessible.

37. **Staff should ensure chemicals are stored in line with COSHH guidance.**

38. **Staff should ensure cleaning equipment is clean, and stored correctly.**

Standard 7: Hygiene Practices

For organisations to comply with this standard they must ensure that healthcare hygiene practices are embedded into the delivery of care and related services.

Compliance of Hygiene Practices

Hygiene practices	
Effective hand hygiene procedures	89
Safe handling and disposal of sharps	100
Effective use of PPE	89
Correct use of isolation	94
Effective cleaning of ward	89
Staff uniform and work wear	93
Average Score	**92**

The above table indicates that the unit achieved good compliance in this standard. Overall staff demonstrated effective hand hygiene practices and adherence to trust policy on the correct isolation of patients and use of PPE.

The issues identified for improvement in this section of the audit tool were:

- Staff did not always clean hands before donning gloves, one member of staff carried out a full hand wash correctly, however licked their fingers to open a disposable plastic apron.
- A student nurse assisting in a procedure came out from behind a curtain wearing gloves and apron. The student nurse collected equipment and returned behind the curtain. During this time gloves or apron were not changed.
- There was no care plan in place for a patient with an alert organism.
- Not all nursing staff were aware of the NPSA colour coded guidelines.
- A doctor wore a wrist watch and there are no nursing changing facilities.

39. **It is recommended that all staff should comply with the WHO five moments for hand hygiene.**

40. **It is recommended that all staff adhere to the trust dress code policy and use personal protective equipment as per best practice guidance.**

41. **Staff should ensure that a care plan is in place for patients with an alert organism.**

6.0 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.

2. It is recommended that a formal process is put in place for the dissemination of information and learning forward based staff and that IPC should be a standing item on the agenda of all unit and staff meetings.

3. It is recommended that robust action plans are developed and actioned to prevent and control any increase in the incidence of infection within the unit.

4. It is recommended that written guidance is developed to guide staff on screening within the unit.

5. It is recommended that all staff attend mandatory IPC training.

6. It is recommended that the patient and relative information booklet is updated to include; IPC information and the concept of bare below the elbow.

7. It is recommended that, there should be a review of the layout, design and storage areas of the unit for maximum space utilisation. As part of any refurbishment/new build planning, core clinical space recommendations should be complied with.

8. It is recommended that a review of staff access to the unit is carried to ensure there is minimum foot fall.

9. It is recommended that guidance on enhanced and terminal cleans are available to staff and that terminal cleans are signed off by domestic staff or the nurse in charge, and randomly validated by domestic supervisors.

10. It is recommended that PICU staff liaise with the neonatal unit and IPC staff to ensure guidelines and best practice in relation to patient equipment is shared and implemented.

11. It is recommended that PICU staff liaise with neonatal unit and IPC staff to ensure trust guidelines and best practice in relation to preparation, storage and use of breast milk and specialised powered infant formula is shared and implemented.

The Regional Clinical Practices Audit Tools

12. It is recommended that a programme of ANTT training and skills assessments be introduced for all clinical staff.

13. It is recommended that all trust policies/guidelines are reviewed and updated as required to ensure continued accuracy of guidance for staff.

14. It is recommended that a programme of training and competency assessment in the management of invasive device is developed for all clinical staff within the unit.

15. It is recommended that staff continue to engage with other PICUs to benchmark surveillance data.

16. It is recommended that all required information on the collection of blood cultures is consistently recorded.

17. It is recommended that staff devise an action plan to review the incidents of false positive results.

18. It is recommended that a system should be initiated to routinely monitor compliance with best practice when collecting blood cultures.

19. It is recommended that pharmacy cover within the unit is reviewed in line with critical care core standards. Electronic prescribing tools should be introduced for use within the unit as appropriate.

20. It is recommended that antimicrobial usage should be routinely audited in line with current antimicrobial prescribing guidance.

21. It is recommended that staff liaise with virology laboratory staff to ensure results are reported in a timely manner.

22. It is recommended that the CDI policy be updated to provide guidance for the needs of the paediatric patient.

23. It is recommended that a VAP care bundle be introduced to PICU.

24. It is recommended that staff ensure enteral feed products are in date.

25. It is recommended that the trust enteral feeding policy be updated in line with best practice and a system to monitor compliance with best practice developed.

26. It is recommended that the MRSA care pathway should be reviewed for use with paediatric patients.

27. It is recommended that adherence to the MRSA policy is audited and action plans developed.

Regional Healthcare Hygiene and Cleanliness Standards and Audit Tool

Standard 2: Environment

28. It is recommended that staff ensure all surfaces including furniture, fixtures and fittings are clean and in a good state of repair.

29. It is recommended that all drug fridge temperatures are consistently recorded.

30. It is recommended that nursing cleaning schedules include all equipment to be cleaned, records are completed consistently and validation audits are carried out.

31. It is recommended that Information leaflets on C-difficile and posters on the segregation of linen and dealing with a sharps injury are displayed.

32. It is recommended that a poster on the need to use alcohol gel after hand washing is displayed at each clinical hand wash sink.

Standard 3: Patient Linen

33. It is recommended that clean linen, nappies and incontinence pads are not removed from their packaging until ready for use.

    See recommendation no 26 in the environment section.

34. It is recommended that staff ensure they follow the trust guidance on the correct handling and disposal of used linen.

Standard 4: Waste and Sharps

35. It is recommended that all unit staff follow trust policies in the management of waste and sharps.

Standard 5: Patient Equipment

36 It is recommended that general patient equipment must be clean, stored correctly and in a good state of repair. Trigger tape should be used consistently to identify items of equipment that have been cleaned.

Standard 6: Hygiene Factors

37. Staff should ensure chemicals are stored in line with COSHH guidance.

38. Staff should ensure cleaning equipment is clean, and stored correctly.

Standard 7: Hygiene Practices

39. It is recommended that all staff should comply with the WHO five moments for hand hygiene.

40. It is recommended that all staff adhere to the trust dress code policy and use personal protective equipment as per best practice guidance.

41. Staff should ensure that a care plan is in place for patients with an alert organism.

7.0 Key Personnel and Information

Members of RQIA's Inspection Team

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

Trust Representatives attending the Feedback Session

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

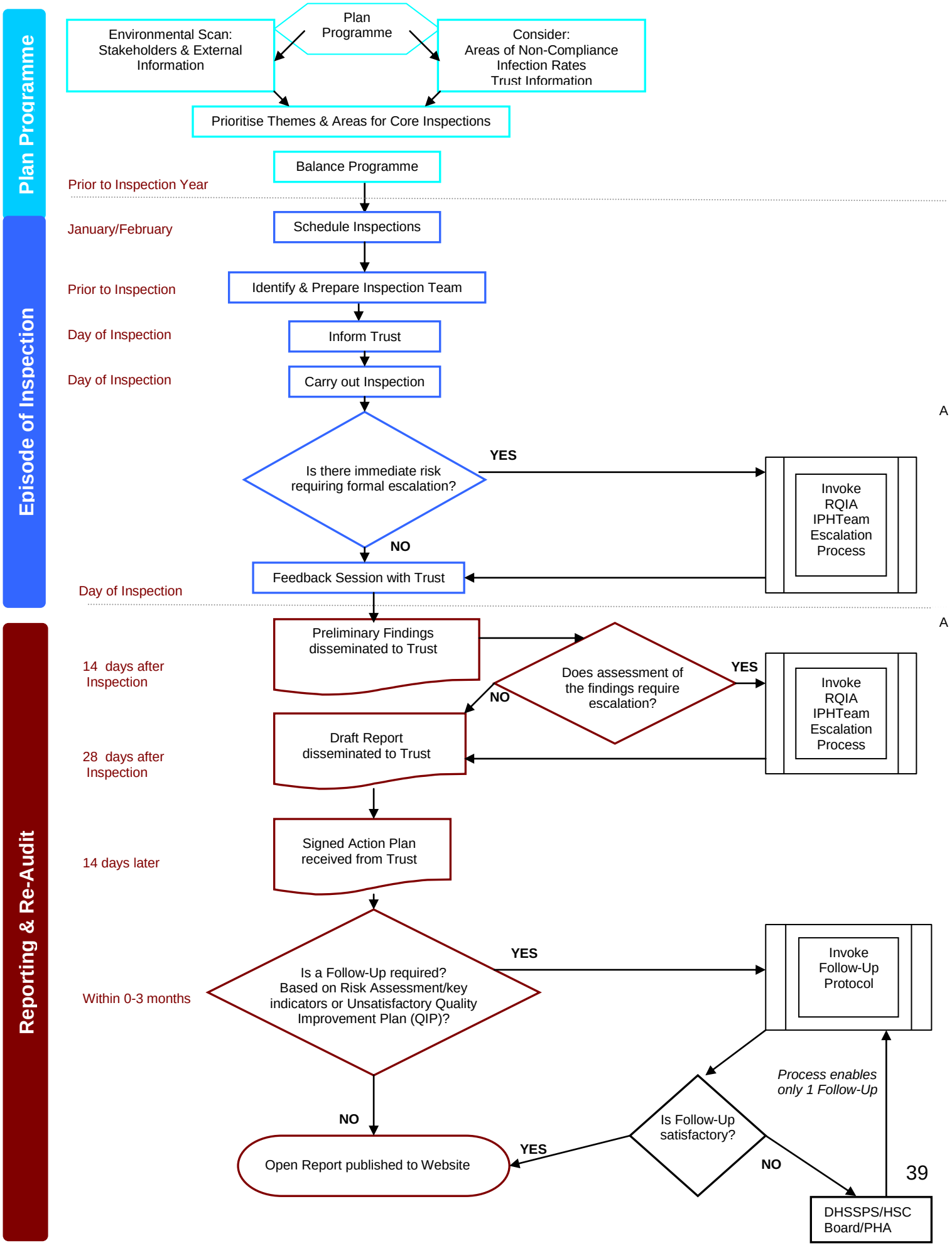
Ms B Creaney	Director of Nursing
Mr B Barry	Director Special Hospital and Women's Health
Ms L McBride	Co-director PCSS
Ms K Jackson	Co-director Cardio Health
Ms A Pollock	Assistant Service Manger
Ms J Lewis	Service Manager RBHSC
Ms H Tough	Sister PICU
Ms I Thompson	Senior Nurse IPC
Ms C Smyth	IPCN
Ms K Dowdie	Clinical Educator
Ms N Scott	PCSS
Ms O Boyd	PCSS
Mr R Milligan	PCSS
Ms L Lawlor	Business Support Officer

8.0 Augmented Care Areas

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

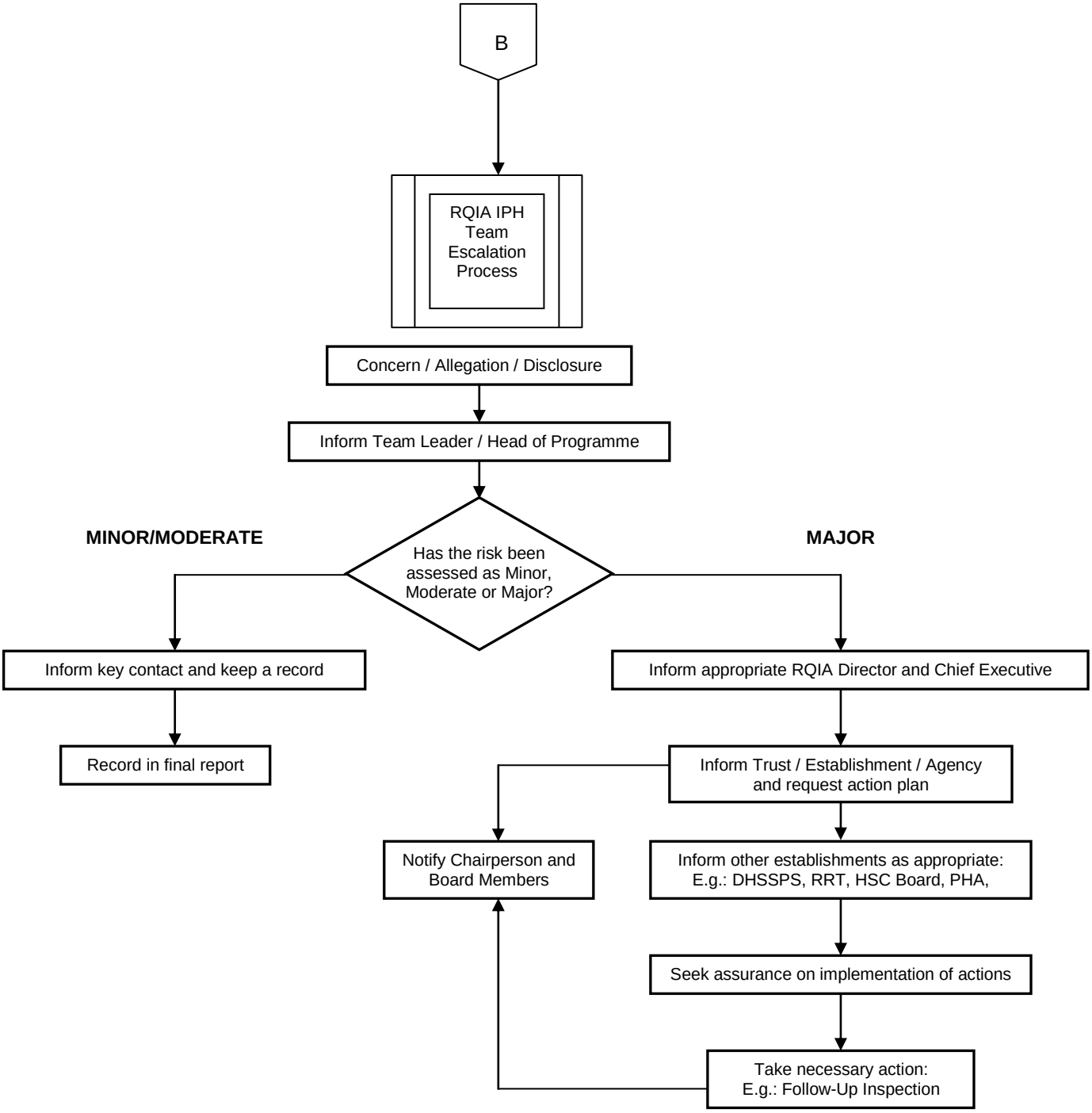
- neonatal and special care baby units
- paediatric intensive care
- all adult intensive care which includes cardiac intensive care
- burns units
- renal (dialysis) units
- renal transplant unit
- high dependency units (HDU)
- haematology
- oncology

9.0 Unannounced Inspection Flowchart



10.0 Escalation Process

RQIA Hygiene Team: Escalation Process



11.0 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.	Co-Director for Nursing	Co-Director for Nursing to review IPC nurse staffing levels in relation to allocation of time to support PICU.	30 September 2015
2.	It is recommended that a formal process is put in place for the dissemination of information and learning forward based staff and that IPC should be a standing item on the agenda of all unit and staff meetings.	PICU/Sisters Clinical Director for Anaesthetics/ Surgery, IPC	Develop a forum to formally disseminate IPC information. Share good practice with NICU and consider the development of a monthly meeting for this purpose. IPC information included in the PICU safety brief and added to the agenda of all staff meetings. All staff to attend update training.	30 September 2015 Complete 30 September 2015
3.	It is recommended that robust action plans are developed and actioned to prevent and control any increase in the incidence of infection within the unit.	PICU/IPCT	Develop formal action plans to prevent and control any increase in the incidence of infection within PICU.	30 September 2015
4.	It is recommended that written guidance is developed to guide staff on screening within the unit.	PICU/IPCT	Develop written guidance for PICU on routine screening e.g. frequency of sampling nasopharyngeal secretions.	30 September 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
5.	It is recommended that all staff attend mandatory IPC training.	PICU/Sisters, Clinical Educator, Clinical Director ,IPC	All nursing staff attend IPC training every 2 years. All Medical, technical and AHP staff require to have rolling programme of IPC training.	Complete 31 October 2015
6.	It is recommended that the patient and relative information booklet is updated to include; IPC information and the concept of bare below the elbow.	PICU/Sisters, Clinical Educator, Quality Coordinator, IPC	Current patient and relative information booklet will be updated. Interim arrangements are in place to provide leaflets on general IPC information, Hand Hygiene and condition specific information.	30 September 2015 Complete
7.	It is recommended that, there should be a review of the layout, design and storage areas of the unit for maximum space utilisation. As part of any refurbishment/new build planning, core clinical space recommendations should be complied with.	PICU/Estates	A review of PICU following a space utilisation visit took place in 2014 and significant changes took place. All staff in PICU are engaged in the design of the New Children's Hospital, which will meet PICs recommendations.	Complete 2020
8.	It is recommended that is a review of staff access to the unit is carried to ensure there is minimum foot fall.	PICU/Sisters, IPC	A review of staff access to PICU to be developed.	30 September 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
9.	It is recommended that guidance on enhanced and terminal cleans are available to staff and that terminal cleans are signed off by domestic staff or the nurse in charge, and randomly validated by domestic supervisors.	PCSS	Guidance on enhanced/terminal cleans is available in PCSS store. This is validated by Domestic Supervisors following every clean.	Complete
10.	It is recommended that PICU staff liaise with neonatal unit and IPC staff to ensure guidelines and best practice in relation to patient equipment is shared and implemented.	PICU/Sisters, Clinical Educator/ NICU/Clinical Educator	Develop formal links with NICU to share good practice.	30 September 2015
11.	It is recommended that PICU staff liaise with neonatal unit and IPC staff to ensure trust guidelines and best practice in relation to preparation, storage and use of breast milk and specialised powered infant formula is shared and implemented.	PICU/NICU	NICU guidelines and best practice have been introduced in PICU.	Complete
The Regional Clinical Practices Audit Tools				
12.	It is recommended that a programme of ANTT training and skills assessments be introduced for all clinical staff.	PICU/Sisters, Clinical Educator/ Clinical Director	Programme of training is in place for nursing staff and100% nursing staff have completed training and skills assessments to date. Develop programme of training and skills assessments for all medical staff.	Complete 30 September 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
13.	It is recommended that all trust policies/guidelines are reviewed and updated as required to ensure continued accuracy of guidance for staff.	Co-Director for Nursing	Out of Date policies require to be updated: Guideline for insertion and Maintenance of Central Venous Catheter (expired Sept 2010). Blood Culture Policy (expired April 2012) Policy for safe insertion and Management of chest drains (expired June 2013) Peripheral Intravenous Cannula- insertion and Management (expired May 2014)	30 September 2015
14.	It is recommended that a programme of training and competency assessment in the management of invasive device is developed for all clinical staff within the unit.	PICU/Sisters, Clinical Educator, IPC, Clinical Director	Rolling programme of training for all nursing and medical staff to be developed.	31 October 2015
15.	It is recommended that staff continue to engage with other PICUs to benchmark surveillance data.	PICU	PICANET data correlation continues, with the publication of an annual report in relation to the UK and specifically for NI. Civil Eyes peer benchmarking work in place.	Complete & ongoing
16.	It is recommended that all required information on the collection of blood cultures is consistently recorded.	PICU/Sisters	Ensure that all nursing staff accurately records this information in patient's clinical notes. Added to safety briefing.	Complete & ongoing

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
17.	It is recommended that staff devise an action plan to review the incidents of false positive results.	PICU /Sisters Clinical Director	Develop a forum to formally monitor false positives. Share good practice with NICU and consider the development of a monthly meeting for this purpose.	30 September 2015
18.	It is recommended that a system should be initiated to routinely monitor compliance with best practice when collecting blood cultures.	PICU /Sisters Clinical Director , IPC	Develop a forum to formally monitor compliance with best practice. Share good practice with NICU and consider the development of a monthly meeting for this purpose.	30 September 2015
19.	It is recommended that pharmacy cover within the unit is reviewed in line with critical care core standards. Electronic prescribing tools should be introduced for use within the unit as appropriate.	Director of Pharmacy	Pharmacy cover in PICU to be reviewed in line with PIC standards. Electronic prescribing will require IT infrastructure not currently available within PICU but will be integrated into the New Children's Hospital.	30 September 2015 2020
20.	It is recommended that antimicrobial usage should be routinely audited in line with current antimicrobial prescribing guidance.	PICU/Director of Pharmacy	Develop antimicrobial stewardship plan for PICU	30 June 2016
21.	It is recommended that staff liaise with virology laboratory staff to ensure results are reported in a timely manner.	PICU/ Intensivist	A new system has been implemented in June 2015 to ensure results are available to PICU within 24 hours.	Complete

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
22.	It is recommended that the CDI policy be updated to provide guidance for the needs of the paediatric patient.	PICU/IPCT	IPC to develop guidance for paediatric patients i.e. policy/C.difficile pathway	31 December 2015
23.	It is recommended that a VAP care bundle be introduced to PICU.	PICU	Consider the implementation of a Paediatric VAP care bundle. This would require a staffing resource to be made available, in line with other PIC units.	30 September 2015
24.	It is recommended that staff ensure enteral feed products are in date.	PICU/Sisters	Protocol for daily checks and rotation of stock has been implemented	Complete
25.	It is recommended that the trust enteral feeding policy be updated in line with best practice and a system to monitor compliance with best practice developed.	PICU/Sisters/ Clinical Educator	GAIN recommendations for enteral feeding to be implemented and a monitoring system developed.	31 October 2015
26.	It is recommended that the MRSA care pathway should be reviewed for use with paediatric patients.	IPCT	MRSA care pathway to be reviewed for use with paediatric patients	30 September 2015
27.	It is recommended that adherence to the MRSA policy is audited and action plans developed.	IPCT	Develop system of audit of MRSA care pathway.	30 September 2015
Regional Healthcare Hygiene and Cleanliness Standards and Audit Tool Standard 2: Environment				
28.	It is recommended that staff ensure all surfaces including furniture, fixtures and fittings are clean and in a good state of repair.	PCSS/PICU Sisters	Environmental audits are completed weekly and action plans in place.	Complete

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
29.	It is recommended that all drug fridge temperatures are consistently recorded.	PICU/Sisters	Recording of drug fridge temperatures have been added to the PICU safety brief.	Complete
30.	It is recommended that nursing cleaning schedules include all equipment to be cleaned, records are completed consistently and validation audits are carried out.	PICU/Sisters	Nursing cleaning schedules are in place. System has been implemented to ensure validation of audits	Complete & ongoing
31.	It is recommended that Information leaflets on C-*difficile* and posters on the segregation of linen and dealing with a sharps injury are displayed.	PICU/Sisters	Information leaflets and posters in place.	Complete
32.	It is recommended that a poster on the need to use alcohol gel after hand washing is displayed at each clinical hand wash sink.	PICU/Sisters	Posters in place	Complete
Standard 3: Patient Linen				
33.	It is recommended that clean linen, nappies and incontinence pads are not removed from their packaging until ready for use. See recommendation no 26 in the environment section.	PICU/Sisters	Guidance issued to all staff	Complete
34.	It is recommended that staff ensure they follow the trust guidance on the correct handling and disposal of used line	PICU/Sisters	Guidance issued to all staff	Complete

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
Standard 4: Waste and Sharps				
35.	It is recommended that all unit staff follow trust policies in the management of waste and sharps.	PICU/Sisters/ Clinical Director	Guidance issued to all staff. All staff to complete the waste management module online	Complete September 2015
Standard 5: Patient Equipment				
36.	It is recommended that general patient equipment must be clean, stored correctly and in a good state of repair. Trigger tape should be used consistently to identify items of equipment that have been cleaned.	PICU/Sisters	Processes in place to ensure equipment is clean, stored correctly and in a good state of repair. Equipment will be repaired/replaced when necessary. Requirement to consistently use Trigger tape in PICU brought to the attention of staff.	Complete Complete
Standard 6: Hygiene Factors				
37.	Staff should ensure chemicals are stored in line with COSHH guidance.	PICU/Sisters	COSHH guidance implemented	Complete
38.	Staff should ensure cleaning equipment is clean, and stored correctly.	PCSS	All PCSS staff to attend Health and Safety Training. PCSS staff have been reminded of good working practices involving cleaning equipment.	31 December 2015

Reference number	Recommendations	Designated department	Action required	Date for completion/ timescale
Standard 7: Hygiene Practices				
39.	It is recommended that all staff should comply with the WHO five moments for hand hygiene.	PICU/Sisters	Guidance reissued to all staff. Hand hygiene scores remain consistently high.	Complete
40.	It is recommended that all staff adhere to the trust dress code policy and use personal protective equipment as per best practice guidance.	PICU/Sisters	Dress code policy audited quarterly as part of SIAF. PPE best practice guidance in place.	Ongoing Ongoing
41.	Staff should ensure that a care plan is in place for patients with an alert organism.	PICU/IPCT	IPC to develop a generic nursing care plan for alert organisms.	30 September 2015

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