Ashford and St. Peter's Hospitals
NHS Foundation Trust

INFECTION CONTROL GUIDANCE FOR DESIGN, CONSTRUCTION AND RENOVATION / REFURBISHMENT PROJECTS

Compiled by: The Control of Infection Team

In consultation with: Control of Infection Committee

Status: Approval date: February 2010

Ratified by: Clinical Governance Committee

Review date: April 2019

Patients first • Personal responsibility • Passion for excellence • Pride in our team

History

Issue	Date Issued	Brief Summary of Change	Approved by
1	Feb 2010	New policy	

For more information on the status of this document, please contact:	
Policy Author	
Department/Directorate	
Date of issue	
Review due	
Ratified by	
Audience	

1. INTRODUCTION

The healthcare environment is a secondary reservoir for micro-organisms with a potential for causing infection. It is important that healthcare buildings are designed with appropriate consultation, and the design facilitates good infection prevention and control practices and has the quality and design of finishes and fittings that enable thorough access, cleaning and maintenance to take place. If healthcare associated infection is to be reduced, it is imperative that infection control is considered at all stages of the capital/estates development process, from planning and design through to the completion of the build for both new builds and refurbishment of existing facilities.

2. PURPOSE

High standards of environmental hygiene and clinical practice in healthcare facilities have been identified as being important in minimising the risk of the transmission of infection. The design, planning, construction, refurbishment and ongoing maintenance of the healthcare facility also have an important role to play in the prevention and control of infection. The physical environment has to assist, not hinder, good practice.

The Chief Medical Officer's report on infections and the rise of antimicrobial resistance (Davis, 2013) stated that the design, construction and maintenance of healthcare facilities have a substantial bearing on the risk of developing a healthcare-associated infection.

It is important that Infection Prevention and Control (IPC) is design-in at the planning and design stages of a new-build or refurbishment project and that input continues up to the final build stage. Designed-in IPC means that designers, architects, engineers, facilities managers and planners work in collaborative partnership with IPC teams to deliver facilities in which IPC needs have been planned for, anticipated and met.

3. SCOPE

This policy applies to all staff working within and contracted to provide construction, renovation or refurbishment projects.

4. THE PLANNING PROCESS

This section explains the planning process, which comprises the following stages:

a) Preparation of a business case to support the viability of the project
b) Project funding
c) Concept/feasibility study
d) Design stage
e) Contract
f) Project monitoring/construction
g) Pre-handover inspections ("snagging")

h) Commissioning the facility
i) Post-project evaluation

The aim is to prompt those with overall responsibility for managing capital schemes to include IPC advice at the right time in order to prevent costly mistakes.

5. ROLES AND RESPONSIBILITIES

- It is essential that the Infection Prevention and Control Team is notified of all potential estates/ capital development and renovation / refurbishment work at the inception stage to completion and commissioning.
- The design team is responsible for ensuring that recommendations and guidance for infection control in the built environment are considered in all plans and designs.
- Facilities/capital management are responsible for ensuring that infection control considerations are made both by in house and contracted staff during the build or refurbishment phase and during any subsequent demolition work.
- To facilitate this process a risk assessment matrix has been developed to identify when infection control input should be sought during construction or refurbishment and minor improvement requisitions (Appendix 1).
- The project manager should seek guidance from the Infection Prevention and Control Team at all stages of the new build / renovation / refurbishment.
- The infection prevention and control team is responsible for reviewing plans and designs and to advise accordingly in line with national recommendation and guidance.

6. PROCEDURES

- All stakeholders should consider infection prevention and control from the conception of the project throughout the design phase and in the subsequent build.
- It is essential that there is a timely collaborative partnership to achieve infection prevention and control goals specific to each construction/developmen/trefurbishment / renovation.
- There is a need to understand and assess the risks of infection relating to projects and the built environment.
- There is good project management in relation to infection prevention and control considerations for all new build / refurbishment projects.
- There is good quality control throughout the duration of the project including dust management and control where refurbishments are taking place parallel to continuing service provision.
- Developments are monitored continuously.
- Housekeeping managers are informed / involved with refurbishments / renovations as increased cleaning may be required.

7. RECOMMENDATIONS

- The principle is to maintain sufficient space for activities to take place and to avoid the transmission of organisms either by air or by contact with blood and body fluids or equipment.
- Design, accessibility and space in patient areas must be sufficient to take into account ease of cleaning and maintenance.
- There must be sufficient sanitary facilities and they must not be used as storage facilities.
- There must be sufficient facilities designed to accommodate systems for decontamination of medical devices, if appropriate for the area.

7.1 Hand hygiene facilities

- See also Health Building Note 00-10 Part C "Sanitary assemblies" and Health Building Note 00-02 Sanitary spaces.

7.2 Dirty Utility / Sluice Rooms

- A dirty utility sluice room must be provided in clinical areas with access to a macerator/ stainless steel sink and separate hand washing sink.
- The dirty utility sluice room is used for holding commodes following cleaning. Linen in skips and equipment to be returned to Sterile Services Department.
- The dirty utility sluice must be accessible, fit for purpose and safe from the health and safety and infection control perspectives.
- The dirty utility sluice must have easy clean surfaces and flooring.
- Equipment designated as clean must not be stored in the sluice room.
- Include facilities for cleaning items of equipment where appropriate.
- Testing urine.

7.3 Clean Utility Room

- A clean utility room is required where drugs and lotions may be stored and prepared, a supply of clean and sterile supplies may be held and dressing trolleys prepared. Clinical hand hygiene facilities are required.
- It is important that planners/design teams think about the type of storage facilities provided. There should be enough storage area for sterile supplies equipment and other clean supplies to keep supplies off the floor with sufficient space under the lowest shelf to permit cleaning the floor underneath.
- It is important that sufficient worktop area is provided to enable aseptic preparation to be carried out (for example, preparation of intravenous infusion).
- Storage facilities should be able to be cleaned easily and quickly while protecting clean stores and equipment from dust and contamination.

7.4 Engineering and Mechanical Services

- Heating and general ventilation grilles should be easily accessible for cleaning
- Lamps should be easy to clean. There should be no ledges or ridges where dust can collect.
- Water storage tanks should have a programme of maintenance for cleaning.
- Hot water supplies should be monitored by facilities to ensure consistent high temperatures.
- Dead legs in water systems should be avoided.
- The use of vacuum controlled units with overflow protection devices for mechanical suction is essential to avoid contaminating the system with aspirated body fluids.

7.5 Storage

- Storage facilities should be adequate enough to protect equipment from dust and contamination.
- Storage facilities must be considered in the design.
- In areas where patients are expected to change lockers will need to be provided for their belongings.
- The housekeepers cupboard must be separate from other storage areas and be fitted with a low level sink and separate hand washing facilities.
- Clinical waste must be stored in separate lockable room or container whilst waiting for collection.

7.6 Finishes, floors, walls, ceilings, fixtures and fittings

- All finishing's must facilitate cleaning and disinfection as necessary and be of a suitably high standard.
- Soft furnishings used in patient areas should be chosen for ease of cleaning and compatibility with detergents. These should be covered in a material that is impermeable, preferably seam-free or heat-sealed.
- Flooring must be smooth, easily cleaned and appropriately wear resistant with integral skirting, preferably laid prior to the installation of cupboards, fitted units and other fixtures.
- All skirting boards, joints and crevices should be sealed appropriately to prevent water ingress during cleaning.
- No carpets in any clinical area of the Trust.
- Wood, unsealed joints and tiles should be avoided as they may provide a reservoir for infectious organisms.
- Window dressings must be easy to clean. Where reusable curtains are used they must be able to withstand washing processes at disinfection temperatures e.g. minimum of 60°C. Disposable curtains and wipeable blinds are now used in all clinical areas.
- Curtains, whether fabric or disposable, must be changed on a pre-planned programme.
- Blinds must be of an agreed standard.
- Smooth impervious surfaces should be used for walls.
- All surfaces, fixtures and fittings should be designed for easy cleaning and durability.

- Surfaces near plumbing fixtures must be smooth, non-porous and water resistant.
- Pipe work and radiators should be enclosed in smooth surface box to facilitate cleaning.

7.7 Catering and Food

- All healthcare establishments must comply with food safety requirements in the Food Safety Act 1990 and food hygiene regulations under this Act.
- The requirements for design will depend on the level of food production undertaken.
- Staff room areas must be provided with a deep sink and separate hand wash sink and sufficient space to accommodate a refrigerator.
- Where cooled drinking facilities are provided these should be plumbed into the mains water supply and not provided through bottled water suppliers.
- Any proposal for catering facilities must be discussed with the Environmental Health officer.

7.8 Construction and the Role of Cleaning

- Early involvement of the Infection Prevention and Control Team and Housekeeping Manager in the planning process will alleviate potential infection control risks e.g. the dissemination of Aspergillus spores.
- A planned cleaning programme is essential when building work of any nature is planned
- Workflow and agreed time scales are important to prevent incidents that potentially put patients and staff at risk.
- Where work is being undertaken -whilst patient services continue, consideration must be given to the level of dust produced and appropriate dust control be put in place in addition to the cleaning programme.
- Frequent auditing of the area is required to highlight any problems / systems failures with regard to cleaning during the project.

7.9 Demolition and Infection Control

- When any demolition work is indicated it is essential that precautions are taken to minimise the level of dust. These precautions will depend on the amount of dust anticipated.
- Cleaning programmes will need to be introduced to manage the level of dust generated to ensure that patient areas remain clean.

7.10 Post Project Evaluation

- Post project evaluation will be facilitated by the Project Team with contribution from relevant parties, including infection prevention and control, clinicians and estates.
- The purpose of the evaluation is to improve future project appraisal, design management and implementation.
- The evaluation will need to undertaken when the facility has been in use for some time.

- The three stages of evaluation are:

    - Project appraisal
    - Monitoring and evaluation of the project
    - Review of project operations

- The evaluation is a learning process.

8. DISSEMINATION AND IMPLEMENTATION

The policy has been written by the Infection Control Team, been agreed by the Control of Infection Committee and ratified by the Clinical Governance Committee. The policy will be available on TrustNet.

9. PROCESS FOR MONITORING COMPLIANCE WITH THE EFFECTIVENESS OF POLICIES

This policy will be monitored through the annual programme of work / audit plan of the Infection Control team. Non-compliance will be reported as a risk and placed on the risk register.

10. EQUALITY IMPACT ASSESSMENT

The Trust has a statutory duty to carry out an Equality Impact Assessment (EIA) and an overarching assessment has been undertaken for all infection control policies.

11. ARCHIVING ARRANGEMENTS

This is a Trust-wide document and archiving arrangements are managed by Quality Dept. who can be contacted to request master/archived copies.

12. REFERENCES

- Department of Health. 2013. Health Building Note 00-09: Infection control in the built environment.
- Davis S.C. 2013. Annual Report of the Chief Medical Officer. Volume two. 2011. Infection and the rise of antimicrobial resistance.

APPENDIX 1

Ashford and St. Peter's Hospitals NHS
NHS Foundation Trust

INFECTION CONTROL ASSESSMENT FORM

Site/Building:	
Rooms:	Project Start Date:
	Estimated Duration:
Project Manager	Ext:
Description of Activity:	

SECTION 1 CONSTRUCTION or REFURBISHMENT or INTERRUPTION OF SERVICES

TYPE A	Inspection and non-invasive activities, includes, but not limited to: ● removal of ceiling tiles for visual inspection on corridors and non-clinical areas; ● painting and minimum preparation in corridors and non-clinical areas; ● electrical trim work (all plugs, switches, light fixtures, smoke detectors, ventilation fans); ● minor plumbing and activities that do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
TYPE B	Small scale, short duration activities that create minimal dust. Includes: ● removal of a limited number of ceiling tiles in low risk clinical areas for inspection only; ● installation of telephone and computer cabling; ● access to chase spaces; ● cutting of walls or ceiling where dust migration can be controlled in non-clinical areas.
TYPE C	Any work of long/short duration which generates a moderate-to-high level of dust or requires minor building works, demolition or removal of any fixed building components or assemblies. Includes, but is not limited to: ● sanding of walls for painting or wall covering; ● removal of floor coverings, ceiling tiles, panelling, and wall-mounted shelving and cabinets; ● new wall construction; ● minor duct work or electrical work above ceilings; ● major cabling activities.
TYPE D	Major demolition and construction projects. Includes, but is not limited to new construction/machinery and equipment installations, rectifications and modifications.

SECTION 2 INFECTION CONTROL RISK OF AREA

Group 1 (low risk)	Group 2 (medium risk)	Group 3 (high risk)
Office areas/corridors plant rooms/ service ducts	A&E clinical rooms Radiology/magnetic resonance imaging General surgery recovery units Wards Nuclear medicine Admissions/discharge units Echocardiography Other departmental clinical areas Out-patient department Pharmacy (general) Laboratories Hydrotherapy pools Endoscopy clinics Examination rooms	Day surgery rooms All intensive care units All operating suites All high dependency units Dialysis & transplant units Oncology Cardiology Cardiac catheterisation suite Pharmacy clean rooms Sterile Services Departments

SECTION 3 CONSTRUCTION ACTIVITY/INFECTION CONTROL MATRIX

CONTACT INFECTION CONTROL?

	CONSTRUCTION ACTIVITY			
RISK OF AREA	TYPE A	TYPE B	TYPE C	TYPE D
GROUP 1	NO	NO	NO	**YES**
GROUP 2	NO	NO	**YES**	**YES**
GROUP 3	NO	**YES**	**YES**	**YES**

SECTION 4

Requested by:	**Authorised by:**
Date:	Date: