

**PREVENTING INFECTIONS
ACQUIRED WHILE RECEIVING
HEALTH CARE**

**THE SCOTTISH EXECUTIVE'S ACTION
PLAN TO REDUCE THE RISK TO
PATIENTS, STAFF AND VISITORS**

2002-2005

FOREWORD FROM THE MINISTER FOR HEALTH AND COMMUNITY CARE – MR. MALCOLM CHISHOLM

Great advances have and are being made in modernising our healthcare services. To reap the maximum benefit from them, the NHS and its partners need to focus on limiting the risks to patients and to staff. Healthcare Associated Infection (HAI) is one of the chief risks we must confront.

Many patients now needing treatment are frailer, making them more susceptible to complications in care. Infection is often an unwanted complication. It can lead to serious illness, which in many cases could be prevented. Familiarity with microbes and the diseases they cause, must not mean that we just learn to live with them.

Our methods to reduce the risk of HAI are many, often straightforward, and need to be built into everyone's thinking. Best practice is common but it is not universal. It is in everyone's gift, if we work together, to achieve better hygiene and infection control with contributions from all our healthcare team: managers, professionals and support staff. Patients expect no less.

For these reasons, I am committed to reducing the burden of disease and avoidable illness caused by HAI.

I listened to concerns about how we deal with HAI which arose from the outbreak of salmonella infection at the Victoria Infirmary, Glasgow, in December 2001 and January 2002. I requested that the antecedents and management of the outbreak be reviewed to highlight any lessons for the NHS in Scotland as a whole. A Group under the chairmanship of Dr Brian Watt investigated the issues and drew up a Report on it. I endorse the Group's recommendations. To help ensure that the NHS in Scotland learns the lessons from the outbreak and makes changes to minimise the chances of a similar episode occurring in the future, I asked for them to be reflected appropriately in this action plan.

In June 2002, I called a Convention of experts and interested people from across Scotland, to learn from each other and from experience overseas. What we heard is detailed in the Convention Report, and I thank everyone for their commitment, ideas and contributions.

We have drawn together the ideas from the Convention and the lessons from recent experience of infection incidents, into an Action Plan for HAI in all care sectors. I commend this Plan to you and ask for your sustained support to work with colleagues across healthcare to implement these actions. They are intended to be integral to every patient's care and they must be carried out as soon as possible.

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THE SCOTTISH EXECUTIVE'S ACTION PLAN TO REDUCE THE RISK TO PATIENTS, STAFF AND VISITORS FROM HEALTHCARE ASSOCIATED INFECTION

2002-2005

INTRODUCTION

In the early years of the 21st century, infection remains a significant cause of ill health. Throughout the world, infections contracted while receiving healthcare are a major problem. From a series of studies, it is estimated that approximately 9% of patients entering Scottish hospitals acquire an infection during their admission. This is equivalent to at least 10,000 infections a year. Evidence suggests that 35% of these may be preventable. In most forms of surgery, infection is the most common post-operative complication and is potentially fatal.

Healthcare associated infection (HAI) is defined as an infection originating in a medical facility i.e. occurring in a patient in whom the infection was neither present nor incubating at the time of admission to the hospital or other facility. HAI includes infections acquired in hospital but not apparent until after discharge, those contracted in healthcare facilities by staff and those picked up while receiving care outside of hospitals.

There is evidence that HAI is increasing. Reports of bloodstream infections (bacteraemia) due to methicillin-resistant *Staphylococcus aureus* (MRSA), regarded as markers of potential or actual HAI, have increased in Scotland by 15% annually over the three years up to 2001. In recent months widespread media coverage of outbreaks of infection associated with hospitals has heightened public awareness and concern.

Quality healthcare is a basic expectation of patients and a challenge to health professionals. Members of the public reasonably expect that patients will not acquire any new disease as a result of their treatment or care. HAI is therefore a major concern for the NHS in Scotland, as it is for other sectors of healthcare e.g. private hospitals, nursing homes.

CONTEXT

Current Scottish Executive Health Department Policy related to HAI

The Scottish Executive Health Department (SEHD) considers HAI to be a priority patient safety issue. It is one of the most important events that can impact adversely on patients while they receive care. The key principles for the NHS in Scotland in dealing with adverse events in health care are:

- unified mechanisms for reporting and analysis when things go wrong;
- a more open culture in which errors or service failures can be reported and discussed;
- systems for ensuring that, where lessons are identified, the necessary changes are put into practice;
- a much wider appreciation of the value of the 'system' approach in preventing, analysing and learning from errors.

The Chief Medical Officer is leading the development of risk assessment and incident recording systems to increase understanding and improve practice in analysing and learning from adverse events. Making changes to improve patient safety is a key challenge for NHS Boards' and Trusts' Clinical Governance systems. HAI should be one of the main issues on their agenda.

HAI is a particularly important adverse event in health care because of:

- its frequency and scale - infection in hospital not only affects an individual but it can, and too frequently does, transmit to others. The level of HAI now means that it is a significant public health problem;
- its impact on delivering services - HAI impedes good outcomes from treatments (e.g. infection following surgery), increases length of stay and often, e.g. when outbreaks occur, leads to more resources being required to maintain levels of service and/or to temporary closures of services;
- its bearing on public expectations – many understand that historically health has been improved by measures to prevent infections and they count on the same level of protection in healthcare as they receive from food, water and air quality controls and
- its negative image - HAI is partly a reflection of poor hygiene standards and unsuitable environments for healthcare. These two factors have a negative influence on the overall quality of NHS services.

In recognition of this importance, in recent years a number of initiatives have been taken. These are listed in the section on key developments. However there is widespread recognition that much remains to be done. The NHS is undergoing an in-depth modernisation programme and there is a need to ensure that patient and staff safety feature prominently in this agenda. Cognisant of these factors, the Minister for Health and Community Care, Mr. Malcolm Chisholm, asked the Scottish Executive Health Department to organise on his behalf, an HAI Convention.

Scottish parliamentary and media interest about HAI has been running at a high level for the last 18 months. This peaked with the outbreak of salmonella infection at the Victoria Infirmary, Glasgow, in December 2001 and January 2002 with three deaths occurring. The Minister of Health and Community Care requested that the antecedents and management of the outbreak be reviewed to highlight any lessons for the NHS in Scotland as a whole.

The reports for these have been key in shaping the further development of SEHD policy in this area.

The HAI Convention

The Minister wrote to the Chairs and senior managers of NHS Boards and Trusts and representatives of political, private, voluntary, academic, patient, staff and professional organisations inviting them to participate in the convention, which took place on 28th June 2002.

The Convention recognised that much has been done to develop an infrastructure to reduce the risk of HAI e.g. establishing risk management systems and surveillance programmes, expanding infection control services, setting and monitoring standards for NHS Trusts' performance in these areas. These need to "bed in" but recent experience has shown that they also require further development. Some NHS Trusts have had difficulties coping with the

scale of this agenda. Yet without current and future development in these areas, sustainable action to deal with the problem is impossible.

However the priority of virtually all those who participated in the Convention was not management structures and systems but the practicalities of hygiene in clinical care and the cleanliness and suitability of the environment it takes place in. There was much discussion about the arrangements for those who work in clinical and support services and about who is responsible in wards and other clinical settings for ensuring that the right things get done at the right time and if not, for putting things right.

The presentations and reports on the workshops were collated by the Department and an action plan developed to make sure that all necessary steps will be taken to put in place the key recommendations from the Convention.

Report of the review of the circumstances surrounding the onset of the outbreak of salmonella infection at the Victoria Infirmary, Glasgow, in December 2001 and January 2002

Following the outbreak of salmonellosis in the Victoria Infirmary, Glasgow, a Group under the chairmanship of Dr Brian Watt was set up by the Scottish Executive, at the request of the Minister of Health and Community Care. The Group convened during May 2002 and reported in October 2002. The Health and Safety Executive whose officials briefed the Group also undertook an investigation. The HSE information was taken into consideration in the Group's report.

The Group's report looks at, and comments on, a range of infection control issues that are pertinent throughout the NHS in Scotland. It makes recommendations on various ways in which the NHS can combat HAI in Scottish hospitals. The major themes running through the report can be summarised within five key areas:

- a comprehensive implementation of Infection Control standards at ward/departmental level and the necessary resources to achieve this;
- a properly developed and funded infection control infrastructure;
- a culture change in hand washing, underpinned by hand washing audits for all staff;
- implementation of a suggested Infection Control Outbreak/Episode Risk Matrix to allow consistent responses and communications across Scotland and
- proper emphasis on all aspects of communications in infection control and in outbreaks, including a culture of openness.

The recommendations in this Report should help to ensure that the NHS in Scotland learns the lessons from the outbreak at the Victoria Infirmary and makes changes to minimise the chances of a similar episode occurring in the future. They should therefore be considered as a coherent whole and implemented as a whole. The Minister of Health and Community Care endorsed the Group's recommendations and asked for them to be included appropriately in this action plan.

In the light of the reports from the Convention and Watt Group, SEHD recognised that the HAI agenda now needs to be more focussed on taking forward action on a raft of issues which directly interface with clinical care. It will entail challenging the attitudes and culture of a number of key staff groups. It will not be easy and will take time.

To take things forward, requires:

- a strategic framework;
- a series of key developments;
- a co-ordinated programme to manage these.

A STRATEGIC FRAMEWORK FOR REDUCING THE RISK OF HAI IN SCOTLAND

SEHD has adopted a three-tiered approach to protect those using and working in health care services from infection. The unifying theme is taking action to reduce risks.

1. Promoting good infection control and hygiene practice in wards, other clinical settings and support services.

The objective here is *to reduce the risks to patients, staff and visitors from being exposed to harmful infectious agents*. The safety of patients must be the overriding concern of all healthcare workers. This means that hygiene should be a central concern in the way in which care is delivered in wards, operating theatres, clinics and other settings.

Those working in clinical and support services must be aware of the risks of infection to patients during their journey through care and what their role is in lowering these risks. They need to know and follow guidance on good hygiene. The risk of infection should be considered when moving patients and deciding where they are to be located in clinical settings. A note should be kept in records of which infection control precautions are being provided to individual patients. Equipment, medical devices and the clinical environment must be kept clean and purchased and maintained so that they are fit for the purpose of reducing the risk of infection. Clinical and support services should have adequate staff changing facilities and uniform laundry services. Those making decisions about patient treatment should be prudent in their use of antibiotics. Patients have the right to know from those caring for them about any HAI related risks they may face as a result of the clinical services they are or will be receiving.

2. Ensuring that good hygiene and infection control practice is in place and working throughout healthcare organisations.

The objective here is *to reduce the risk of HAI impacting negatively on the quality and effectiveness of healthcare services and patients' perception and satisfaction with them*. Healthcare is a major industry affecting most of the population at frequent intervals during their life, not uncommonly when they are at their most vulnerable. As with other sectors of the economy, indeed perhaps more than most other enterprises, healthcare providers have a duty to protect the public from any predictable or unpredictable adverse effects of their activities. Infection is always an adverse event and can be a major one.

To fulfil their statutory obligations under the Health and Safety at Work Act, those managing health care organisations are responsible for making sure that all staff working in their services are adequately trained and appropriately supervised in good hygiene and infection control practice. A culture of hygiene should be promoted. Managers need to know about the types and numbers of HAI associated with key clinical services or interventions.

Surveillance systems should be a key element of effective, audited and co-ordinated risk management programmes targeted at preventing HAI especially in “at-risk” clinical areas. Infection control services should be adequate for facilitating the effective implementation of these programmes. Clinical and support services should comply with statutory and internal NHS technical requirements and standards related to infection control and HAI. The public should know about how well their local NHS services are complying with standards, the HAI rates in these services and any significant incidents or outbreaks occurring in hospitals or other clinical settings.

3. Ensuring that the performance of healthcare organisations in Scotland is of sufficient quality and effectiveness to reduce the incidence of HAI.

The objective here is *to reduce the risks to NHS Scotland suffering adverse effects to its reputation, finances or overall effectiveness as a result of HAI*. Recent events have shown that there is danger of public confidence in the NHS’s ability to deliver good quality effective care to the population being eroded by on-going coverage of infections in healthcare settings. The negative impact of “scare” stories on other sectors of society e.g. food production and retail, is well recognised.

Those charged with the guardianship of the NHS must ensure that HAI and other patient safety issues are key concerns when formulating healthcare policy and allocating resources. National accountability systems should be capable of reviewing NHS organisations’ performance in this area and for promoting continuous improvement. Public health agencies should ensure that effective arrangements are promptly available to manage HAI related outbreaks and incidents. A research priority is to investigate and measure the sources and impact of HAI and the measures taken to prevent it.

HAI is also a problem for local authority, private and voluntary care providers. The Regulation of Care Commission has a key role in ensuring that good infection control systems are in place and working in these sectors.

These three tiers are interrelated. Progress in one cannot be made without progress in another. The text below summarises for each:

- 1 what measures have already been put in place;
- 2 what measures are at the planning or development stage;
- 3 what additional measures are now required.

KEY DEVELOPMENTS

1. Promoting good infection control and hygiene practice in wards, other clinical settings and support services.

Actions here are focussed on clinical and support services with the objective of reducing the risks to patients, staff and visitors from being exposed to harmful infectious agents, while receiving healthcare or being in healthcare settings

Measures already in place

Over the last 5 years, SEHD and the NHS in Scotland in liaison with a range of partners, have carried out the following:

- issued the Scottish Infection Manual and guidance on anti-microbial prescribing, hand washing, preventing the potential iatrogenic transmission of vCJD and the decontamination of medical devices,
- developed technical requirements for the processes involved in decontaminating medical devices, reviewed the provision of sterile services and invested £10 million in an action plan to upgrade decontamination in Acute NHS Trusts, with a further £5 million being invested this year;
- ensured the adoption of single use instruments for tonsillectomy to help reduce the potential risk of vCJD transmission.

Measures planned or currently being developed

Work is being taken forward in the following areas:

- the development of guidance by NHS Education on the roles, responsibilities and competencies of specific ward based staff with a special interest in HAI and hygiene (“infection champions”);
- an audit of “high risk” patient care environments in NHS hospitals with the focus on bed spacing, hand washing and isolation facilities;
- the extension of the review of the provision of sterile services to the private hospital and primary care sector.

Additional measures required

The Convention and the Watt Group report both highlighted the fact that good hygiene is an essential aspect of clinical care. Those engaged in healthcare face never-ending demands and on-going challenges daily. The environments staff work in may not be conducive to effective infection control. While recognising this context, we need to ensure that the focus on hygiene is never lost.

Accompanying this Plan, a Health Department Letter is being sent out indicating which recommendations in the Watt Report require immediate action. These concentrate on cleaning and the management of patients with loose stools. In addition, the following will be taken forward:

- a. The development (by a national Working Group) and subsequent implementation, (by NHS Trusts) of an *NHS Scotland Code of Practice for the local management of hygiene in wards and other clinical units*. The Code of Practice will define local management powers and responsibilities for:
 - ensuring that the environment and equipment are maintained at the appropriate standard (including the powers of ward managers to set or amend cleaning specifications in the light of local circumstances);
 - informing patients about the risks of HAI during their stay in hospital or other clinical setting and what is being done to reduce them;
 - overseeing and taking appropriate action on inappropriate or over-frequent patient movement and overcrowding;
 - auditing, supervising and enforcing staff compliance with hygiene and infection control standards especially those related to hand-washing, and reporting to senior management about these issues.

It will include guidance on:

- managing patients with loose stools;
 - setting levels of basic equipment (such as hoists, commodes etc.) required to reduce their communal use especially in clinical settings with an increased risk of HAI;
 - the keeping of records on infection control measures and advice in patient notes and of incidents when staff have been exposed to faeces or other body fluids;
 - decontaminating staff who are grossly contaminated with faeces and other body fluids;
 - policy and procedures on staff uniforms and changing;
 - staff training in hygiene and infection control, including food hygiene;
 - arrangements for ensuring that agency nursing staff and other contracted non-NHS staff working in wards, other clinical settings and support services are competent in hygiene and infection control;
 - improving the quality of clinical information on laboratory request forms.
- b. The establishment (by NHS Education and NHS Trusts) of *mandatory induction training on HAI and hygiene for all clinical and non-clinical staff* with revalidation of knowledge and skills at appropriate intervals.
- c. The development (by HEBS) of *an HAI leaflet and other information materials for patients* informing them what their rights are in this respect and what information they can expect from NHS in Scotland about the risks to them from receiving a clinical procedure in a specific setting.
- d. The development (by NHS Education) and implementation (by NHS Trusts) of *training packages for NHS staff groups on risk assessment and management* including;
- standardised educational packages in HAI for all clinical and non-clinical staff;
 - an HAI website with links to all relevant guidance and training materials;
 - liaison with universities and colleges on ensuring all receiving undergraduate education in clinical disciplines receive appropriate HAI-related education.
- e. Through holding a stakeholder conference, the development (by PEFE) of *guidance on upgrading the physical environment for healthcare in old buildings*.
- f. The setting (by a national Working Group) of *technical requirements for cleaning processes and frequencies to be used in NHS Trusts' service specification for cleaning services*.
- g. Following the patient care environment audit and the stakeholder conference, a further review (by PEFE) of *standards and technical requirements related to infection control and the built environment* including the provision of staff washing, decontamination and changing facilities to guide new builds and refurbishment projects.

2. Ensuring that good hygiene and infection control practice is in place and working throughout healthcare organisations.

Actions here are focussed on NHS Trusts' management systems with the objective of reducing the risks of HAI impacting negatively on the quality and effectiveness of healthcare services and patients' perception and satisfaction with them.

Measures already in place

Over the last 3 years the following steps have been put in place to strengthen managerial and organisational processes related to HAI:

- the issuing of guidance on the processes NHS Trusts require to manage the risk of HAI (the Carey Group Report);
- the completion and publication of the first round of NHS Trust self assessments of their compliance with the CSBS standard on infection control;
- the establishment of a national HAI surveillance programme co-ordinated by SCIEH and the publication of results on the incidence of MRSA bloodstream infections;
- the expansion of training schemes for infection control nurses;
- the second round of the monitoring of 'cleaning services' by Audit Scotland, this time using the CSBS new cleaning services standards.

Measures planned or currently being developed

The Convention endorsed recent work in this area. In particular, they reinforced the need to continue with work on:

- NHS Trusts putting in place co-ordinated risk management structures and processes as recommended by the Carey Group Report;
- consultation on a model of infection control and communicable disease control for Scotland, led by SCIEH. This should now include incorporation of the Watt Group recommendations on the provision of a 24 hour/7 days per week infection control service, cleanliness champions, infection control nurses and doctors;
- the on-going development of HAI surveillance by SCIEH as indicated in the Convention Report workshop;
- the development of risk-based methodologies by CSBS and SEHD to help set priorities for targeting measures to reduce the risk of HAI and to facilitate action to ensure strict compliance with standards.

Additional measures required

In the light the recent monitoring of the CSBS infection control standards, most NHS organisations in Scotland are upgrading their management systems related to infection control. To further develop management systems and act on the Convention and Watt Group recommendations, the following will be taken forward:

- a. a review (by a national working group) of the *training and support arrangements for those engaged in media handling* on behalf of the NHS in Scotland.
- b. the development (by SCIEH) of *model infection control policies and procedures, including the management of outbreaks of HAI*.
- c. the development (by SCIEH) of *guidance on staff screening during HAI outbreaks*.
- d. the development (by a national working group) of *guidance to NHSScotland on the establishment of multidisciplinary prescribing teams* in all NHS hospitals and primary care services with responsibility for ensuring that education and training on anti-microbial use takes place, practice is audited and performance improves.
- e. Training (by SCIEH) of public health and microbiology staff in the *management of outbreaks of HAI*.

3. Ensuring that the performance of healthcare organisations in Scotland is of sufficient quality and effectiveness to reduce the incidence of HAI.

Actions here are focussed on Scottish policy, standard setting and performance management arrangements with the objective of reducing the probability of NHS Scotland as a whole suffering adverse effects to its reputation, finances or overall effectiveness as a result of HAI.

Measures already in place

Over the last 3 years the following advances have been made with regard to HAI policy and monitoring and improving standards:

- establishment of the CSBS Healthcare Associated Infection Reference Group to provide expert advice on the development of and implementation of organisational control standards for infection control, cleaning services and decontamination of reusable medical devices;
- inclusion in the Performance Assessment Framework for NHS Boards of a section on compliance with HAI related standards;
- inclusion in the Clinical Negligence and Other Risks Indemnity Scheme (CNORIS) of compliance with the CSBS infection control standard as level 2 CNORIS standard with a consequential premium payment penalty to accompany no-compliance;
- the development and publishing of the SE strategy on anti-microbial resistance;
- Ministerial and Chief Executive reinforcement of HAI as priority for the NHS in Scotland in communications with the Chairs and chief Officers of NHS boards and Trusts.

Measures planned or currently being developed

Currently work is taking place on:

- the revision of guidance to NHS Boards and Trusts on handling outbreaks and incidents including those related to HAI. This revision will now include guidance on

how best to implement the Watt group recommendations on the reporting and management of outbreaks (including the risk matrix). Accompanying this Plan, a Health Department Letter is being sent out requesting that NHS Boards and Trusts take immediate steps to review their arrangements for managing outbreaks of HAI;

- the development of a Memorandum of Understanding between SEHD and HSE to formalise information sharing between the two organisations and measures to ensure that NHS trusts comply with statutory and non-statutory standards related to HAI;
- CSBS follow up of the findings from monitoring infection control and the cleaning services standard;
- the development of a Memorandum of Understanding between CSBS and HSE to formalise information sharing between the two organisations;
- the development of infection control standards for the non-NHS adult care sector for appropriate inclusion in the monitoring of care providers by the Regulation of Care Commission.

Additional measures required

With a view to strengthening national performance management and accountability, the following will take place:

- a. The formulation (by a national Working Group), as part of the PAF, of *performance indicators for the risk management of HAI* (based on HAI surveillance and CSBS data) which indicate how well Trusts and hospitals are reducing the risk of HAI to their patients and staff.
- b. The development (by a national Working Group) of an *NHSScotland Code of Practice on disclosure to the public about adverse events in healthcare*, including HAI rates, outbreaks and compliance with standards.
- c. *The Chief Scientist Office, invites high quality research proposals* through its existing response mode funding mechanisms. The subject areas which might be suitable for funding include:
 - the use of HAI surveillance data to alert Trusts promptly about the actual or potential development of outbreaks and incidents;
 - the impact of HAI on bed usage and resources in the NHS in Scotland;
 - the cost-effectiveness of different interventions to reduce HAI in the NHS in Scotland;
 - the development of a methodology to track the on-going impact of HAI on the NHS in Scotland including the cost of its control .
- d. CSBS and NHS Education to review the scope for joint working in *setting standards and methodologies for monitoring Trusts' education and training programmes on HAI and hygiene*.
- e. *Further development by CSBS of their infection control standards* particularly with regard to ensuring that Trusts have in place:

- systems for ensuring good practice in catheterisation and anti-microbial prescribing;
 - infection control services which take into consideration the SCIEH model on good practice;
 - systems to monitor the level of resources invested in infection control .
- f. *A review of SEHD internal procedures for handling outbreaks* including streamlining arrangements for reporting and communications.

MANAGING THE WAY AHEAD

Great strides have been taken in the last two years by most of the NHS in Scotland to improve infection control services, develop risk management systems, raise awareness of hygiene, upgrade the processes and equipment used in decontaminating medical devices and introducing surveillance programmes. This has entailed the efforts of a range of committed staff. However it has stretched the capacity and capability of NHS organisations. This Action Plan lays out a “second wave” of initiatives which will be equally demanding. Because of this, it is essential that we move forward on the basis of:

- a phased effort over the next 3 years;
- the investment of adequate resources which are utilised in the most cost-effective manner possible;
- National co-ordination of the development of initiatives;
- flexible and innovative local implementation of the Action Plan.

Phasing

The Action Plan details 17 new initiatives. Obviously not all can be taken forward at the same time. NHS Trusts are being asked to take a series of actions in response to the recommendations of the Watt Report. In terms of priority, the most important initiatives for development and implementation through the Task Force, are:

- an NHS Scotland Code of Practice for the local management of hygiene in wards and other clinical units;
- mandatory hygiene and infection control induction training programmes and the other HAI related educational initiatives;
- the definition of technical requirements for cleaning processes.

These and the implementation of the 12 initiatives currently at the developmental phase will form the core programmes of the HAI Action Plan in the first year of its operation. The HAI Task Force will decide the timing of other initiatives.

Resources

There is no doubt that resources have to be directed at reducing the risk of HAI and that these must be deployed effectively. One difficulty with estimating the level of investment required is that many of the measures needed are not specific to infection control but involve improving the general standards and level of provision of clinical and support services and upgrading clinical environments and equipment. The HAI Task force will be asked to look in more detail at the cost implications of implementing the 17 new initiatives. In addition a better indication of the costs involved will be obtained through:

- The patient care environment audit will facilitate an estimate of the costs of upgrading clinical areas with higher levels of risk of HAI;
- CSO commissioned research into the impact of HAI and the cost of controlling it.

In the coming months, the NHS in Scotland will receive record levels of additional resources. SEHD resource allocation policy, agreed with NHS Boards and Trusts, is that the maximum return from investing additional resources is best achieved through local decision making within a framework of national priorities, standards and performance management. Reducing the risk of HAI is a clearly stated national priority but there are no grounds for removing decision making on tackling it from local NHS Board and Trust control. However these will be expected to show, through performance management and accountability review processes, that substantial investment has been made, that it is achieving improvement and that their level of improvement is comparable with the best in Scotland.

National Co-ordination

SEHD will establish a multi-disciplinary HAI Task Force led by the Chief Medical Officer with the remit to:

- co-ordinate the development and implementation of the HAI Action Plan;
- review progress in its implementation across the NHS in Scotland;
- monitor the levels of HAI and assess the impact on them of control measures;
- take forward amendments to the action plan or its component initiatives;
- report on progress to the Minister of Health and Community Care and annually through the CMO's report, to the public at large.

The Task Force will remain in place until December 2005.

Flexible and innovative local implementation

At the end of the day, success in reducing the risk of HAI depends upon the commitment given to hygiene and infection control by staff throughout the NHS. Both the Convention and the Watt Group report highlighted the need to facilitate and empower staff. Making this happen partly requires more resources. But equally important are attitudes and culture, local management responsibilities and sharing and learning from good and bad experiences. NHS and professional and staff organisations have a key role in promoting good hygiene and infection control. Their input into taking forward the Action Plan will be key feature of the Task Force's deliberations.

CONCLUSION

Healthcare associated infection is an international problem. In Scotland we have been facing this challenge and putting in place a number of targeted measures for some years. With each in place, new problems are uncovered. In response to this, the Minister for Health and Community Care ordered two initiatives – the HAI Convention and the review by an Expert Group of the outbreak of salmonellosis at the Victoria Infirmary. The reports from these have helped shape SEHD policy on HAI and informed this Action Plan. Taking it forward is one the key priorities for the NHS in Scotland. This will require the commitment of all working in it. The Action Plan is a blueprint for this.

**HEALTHCARE ASSOCIATED INFECTION IN SCOTLAND
The Report from the Ministerial Convention
Glasgow Caledonian University.**

June 28th 2001

**FOREWORD FROM MISS ANN JARVIE,
CHIEF NURSING OFFICER FOR SCOTLAND.**

Earlier this year I had the pleasure of chairing the Ministerial Convention on Healthcare Associated Infection. It was a very worthwhile event. We listened to experience from around Scotland and from our colleague in Europe. We agreed that should not accept HAI as an inevitable part of care and that we need to work together to combat its influence.

We had delegates to this Convention, ranging from the Minister to ward-based professionals and support staff. We heard a rich range of views, opinions and reviews of evidence. We agreed that jointly we would take these views and focus down on the actions we must now take. This will require wide involvement. HAI needs to be on the Chief Executive's agenda and on the agenda of people who design healthcare and the settings it takes place in. It needs to be constantly in the minds of doctors, nurses, cleaning staff, managers - indeed all people caring for patients. The Convention pointed to the way ahead. I thank all who gave their time and contributed so effectively.

INTRODUCTION

The aims of the Convention were:

- To discuss the current HAI agenda with a view to strengthening consensus among key players;
- To develop a plan for taking forward action to reduce the risk of HAI in Scotland;
- To raise the profile of steps being taken to tackle HAI in Scotland.

The Convention took place on 28th June 2002 at Glasgow Caledonian University. It drew together senior people from a range of backgrounds (see list of attendees in Annex). The day spent at the University provided them with an opportunity to discuss in depth a number of issues covering managerial, medical, research and technical aspects of infections in hospitals and other clinical settings. To facilitate discussion, the Convention had two components.

The first was a series of presentations on policy and practice as they relate to HAI and infection control. These provided context for more focussed discussions. The Minister was keen that we learn from other like countries and we were fortunate to have Dr. Elisabeth Jensen of the Danish National Centre for Hospital Hygiene addressing the Convention.

The second was composed of eight themed workshops on key HAI related topics. The intention of the workshops was to draw together conclusions on what is working and not working, what more needs to be done and how we can take these forward. The workshop themes were developed after a review of feedback from healthcare services about HAI. They were led by individuals with recognised expertise and experience in the topics under discussion. The Chairs of the workshops submitted a summary of the key points arising in them at the end of the day.

The key issues raised and discussed and the conclusions reached in the presentations and workshops are presented in the next section of this report. Feedback has generally been positive about the day, which organisationally ran smoothly thanks to the efforts of the Scottish Health Service Centre and Glasgow Caledonian University.

WELCOME TO THE CONVENTION

Mr Malcolm Chisholm, Scottish Executive Minister for Health and Community Care opened the convention. He set out the aims for the day and reiterated the commitment of the Executive to learn from it. He recognised that effective action will require the experience, knowledge, expertise and commitment of individuals at every level of healthcare provision, working together to reach common ownership of both the problem and the solution. Attitudes and behaviour must be changed to prioritise a culture of good hygiene throughout the NHS and infection control in healthcare facilities must be accorded the highest priority.

HAI - THE CONTEXT –CONVENTION PRESENTATIONS

1. The Scottish approach to reducing HAI – Dr. David Old, Consultant Microbiologist, Chair of the HAI Reference Group, Clinical Standards Board for Scotland.

Background

The evident recent increase in HAI in part reflects more efficient reporting of cases. However there are a number of features of healthcare today which increase the likelihood of infection. Patients tend to be older and sicker, while developments in medical technology have led to increasingly ambitious, effective treatments and more complex procedures. Clinical practices such as hand hygiene, antibiotic prescribing, bed usage, patient throughput and hospital cleanliness are also very relevant.

Liberal, and on occasions inappropriate, use of antibiotics has led to the growth of resistant organisms with development of newer generations of antibiotics having difficulty keeping pace. Until twenty years ago it could have been assumed that a cure would be available for every infection, but unfortunately now this cannot be guaranteed. In some situations, 21st century healthcare is carried out in outdated and unsuitable facilities making adequate attention to infection control difficult. Emphasis on improvement in clinical performance may have starved support services, such as cleaning, of resources. Workload pressures may lead to shortcuts. Emphasis on patient throughput to minimise waiting lists can affect the priority given to measures to minimise transmission of organisms e.g. hand hygiene.

Patients spend less time in hospital than in the past, as a result of early discharge and increased day case management. This reduces the risk of cross infection, but may lead to spread of infection from hospital to community and vice versa. The management of infection must be co-ordinated across all health care sectors and good communication between hospital staff and the primary care team taking over responsibility for the patient's care is essential. There is a clear need to improve the general level of understanding of infection control principles among all healthcare staff, whether working in hospital or the community.

Developments in HAI control in Scotland

A number of significant steps have taken place in the last three years to reduce the burden of HAI in Scotland.

The development of management control systems to reduce the risk of HAI in NHS Trusts and standards to monitor how well these are working

The priority of taking action on HAI was reiterated in the Scottish Health Plan *Our National Health: a plan for action, a plan for change*, issued in 2000. It stressed the importance of high standards of infection control, hospital cleanliness and the provision of a safe and healthy environment for NHS patients and staff. It set a target for every healthcare system in Scotland meeting standards established by the Clinical Standards Board for Scotland (CSBS).

The scale of the problem of HAI means that tackling it involves the mobilisation of resources right across healthcare organisations. This requires effective management control systems. Without these local action will be unsustainable and eventually ineffective. In the light of this a national working group developed guidance on how NHS Trusts should take forward assessing and managing the risks of HAI. The group's report *Managing the Risk of Healthcare Associated Infection* was produced in August 2001 and recommended that NHSScotland should adopt a standard approach to HAI risk management. It set out draft

standards for NHSScotland for infection control, decontamination of reusable medical devices and cleaning services to measure to what extent NHS Trust have in place control systems to reduce the risk of HAI and how well these are working.

The Clinical Standards Board for Scotland (CSBS) further developed the HAI standards, and a methodology to evaluate and verify compliance. An interim report on the first assessment of compliance with the infection control standards has now been completed and published. NHS trusts are now taking steps to remedy the deficiencies picked up in the monitoring. A cleaning services standard has been developed with is now being reviewed. The emphasis on the decontamination of medical devices has been on ensuring basic technical requirements are met e.g. that equipment is suitable, compliant with extant guidance and working properly rather than checking on the presence or absence of management control systems. This has been completed and a management control system standard is being developed.

Monitoring the scale of HAI in hospitals and other clinical settings

The first step in assessing the risk of HAI is establishing the scale of the problem of infection in different settings. In parallel with work to formulate guidance on risk management a Working Group developed a programme of HAI surveillance co-ordinated at a national level by the Scottish Centre for Infection and Environmental Health (SCIEH) but based in microbiological laboratories in hospitals. This group's report *A Framework for National Surveillance of Hospital Acquired Infection in Scotland* formed the basis of guidance issued by SEHD in July 2001.

Surveillance of HAI involves the ongoing systematic collection, analysis and interpretation of health data essential for targeted action to prevent HAI. Against a background of public concern about HAI, it is also important that the public and the media are provided with relevant and comprehensible information from the surveillance programme. Initial issues for NHS Trusts included monitoring surgical site infection surveillance, MRSA bloodstream infections and the development of "alert" programme to give early warning of infection problems caused by 15 specific micro-organisms, including MRSA.

Ideally all health care services, both in hospitals and in primary care, should continually collect data informing about all HAIs, using standard data collection processes. To achieve this will require a cultural change, additional resources (including those relating to information technology) and standardised national methods and definitions to ensure robust and comparable data. In the longer term, data on HAI occurrence should be linked to the routine recording of outcomes of patient care.

Limiting the growth of antimicrobial resistance in bacteria causing HAI

In 2002 a report on the *Surveillance of Antimicrobial Resistance in Scotland* was issued with the aim of ensuring the provision of information relevant to clinical practice which would assist in containing the public health impact of antimicrobial resistance. At the end of June 2002, the Scottish Executive issued a wide-ranging Scottish strategy on antimicrobial resistance to bring the use of antibiotics under greater control. Health professionals, pharmacists and patients are advised to change their practices and expectations towards more restrained and better targeted use of antibiotics to lessen the threat from antimicrobial resistance and HAI.

Developing links with the Health and Safety Executive to ensure action on ensuring NHS Trusts take action to comply with HAI related standards and Health and Safety Regulations

Discussions are underway between the Scottish Executive Health Department and the Health and Safety Executive to agree a memorandum of understanding, setting out respective roles and responsibilities and planning for joint working in HAI prevention.

Patient Care Environment

A working group will meet in August 2002 to examine issues relating to HAI and the patient environment, define the key steps in taking forward audit of the patient environment, define how these audit findings can best be used, and, in consultation with HSE, make recommendations.

Resources

A recent announcement indicated that additional training in infection control will be provided for 3500 nurses and midwives i.e. one for every ward and clinical unit in Scotland. These individuals will champion best practice and promote high standards in clinical areas.

Increased resources are not the whole answer but new developments are necessary to improve patient care. The biggest hospital rebuilding programme in the history of the NHS in Scotland is currently underway, while increasing investment in health (to £7 billion by next year) will enable senior managers to ensure that adequate resources are made available for infection control. NHS Boards must reflect the importance of HAI when allocating resources:

Effective action to reduce HAI – the Scottish View

A Chief Executive's View – Mr. Richard Carey, Highland Acute NHS trust

The framework for Trust management's approach to HAI was laid out in the report *Managing the Risk of Healthcare Associated Infection*. This led to the development of CSBS Standards for infection control. In parallel we have seen the institution of the national HAI surveillance scheme. Currently NHS Trusts are engaged in taking forward the nationally set agenda on:

- The surveillance of surgical site infections;
- The alert organism surveillance
- Compliance with CSBS standard and the Clinical Negligence and other risks Scheme
- Education and training in infection control, hygiene and risk management.

But there is a set of local problems, which we must deal with. These include MRSA control, infection control in operating theatres, hand-washing policy, needle-stick injuries, managing outbreaks and finding alternatives to glutaraldehyde in disinfection processes. Trust managers must deal with the national and local agenda in a co-ordinated way. This entails:

- Effective leadership
- Clear accountability
- The "right" values and
- Resources.

Leadership on HAI issues goes beyond the role of the Chief Executive (although he or she is key). The NHS Board must have a higher profile on HAI but most importantly senior clinicians from all disciplines should recognise the priority of the issue. Getting these different parties to feel ownership of infection control is the main challenge.

To achieve this NHS trust should strive to have the right values in their organisations: a “non blame” culture’ openness, partnership with patients and on-going learning and development. Resources are always scarce. But in an organisation the size of most NHS Trusts there is scope for innovation. Key to this is co-ordinating those involved in infection control and risk management. An increase in resources however would be very useful.

More than anything we should recognise that this is important, it can be done, lets do it.

The Infection Control Doctor’s view – Dr. Gabby Philips, Consultant Microbiologist, Tayside Acute NHS Trust

In 1998 a House of Lords’ select committee stated that infection control and basic hygiene should be at the heart of good hospital management. The CSBS overarching statement (in 2001) indicated that there should be a managed environment in healthcare settings which minimises the risk of infection to patients, staff and visitors.

Effective action to control HAI involves systems, culture and management with implications for both primary and acute care; it is a problem for which there is no quick or easy solution. Systems include structures and processes, policies and procedures, education and training, audit and surveillance. Culture includes public perceptions which may underestimate the risks, giving HAI low priority relative to other health issues, while public demands (e.g. for inappropriate antibiotics) may exacerbate the problem. Management of facilities is essential to HAI control: space and configuration of patient areas, bed occupancy and patient movement may be critical factors. Delayed discharges, excessive workload and shortcuts of convenience can add to the problem, while adequate information technology structures and resources can form part of the solution.

Leadership is essential: strategic leadership in Boards and Trusts, clinical leadership by medical and nursing directors, professional leadership by infection control nurses and microbiologists, and general leadership at all levels of the health service to influence and persuade colleagues that infection control has high priority and practices must change. Experience suggests that a major problem in tackling HAI is a lack of accountability and unclear lines of responsibility, probably reflecting the low priority afforded to infection control in the recent past. This must change with Chief Executives putting measures in place to ensure good infection control within their organisations, with responsibilities clearly set down at all levels and clear lines of accountability.

Risk assessment in the context of HAI entails identifying, evaluating, ranking and treating risks, with ongoing monitoring and review. Full communication and consultation is essential. Values should include openness, partnership, learning and development, within a ‘no blame’ culture.

The Infection Control Nurse’s view – Ms. Christine Wilson, Ayrshire and Arran Acute Hospital NHS Trust.

From a nursing perspective, effective action to control HAI necessitates a return to basics. We need to focus our action on:

- hand hygiene,
- environmental cleanliness,

- decontamination,
- personal protective equipment,
- safe disposal practices, and
- isolation of patients where necessary.

All staff need to know their role in these areas. Combating HAI is therefore a key clinical governance issue. Trust need an appropriate framework to improve practice which involves education and training, risk management, research and development, and clinical audit, with infection control at the core.

Simple measures can be very effective e.g. improving hand hygiene and introducing cohort nursing can reduce numbers of MRSA isolates. Outdated equipment, neglect of basic cleaning, inappropriate floor coverings and furnishings can all increase the risk. There are success stories in all parts of Scotland. We can learn from the good to improve the bad.

Effective action to reduce HAI – an international perspective: HAI and infection control in Denmark

Introduction

HAI is not a problem peculiar to the UK. A study of the prevalence of nosocomial infection in university hospitals and tertiary care centres in various European countries between 1984 and 1996 found prevalence rates ranging from 4.4% to 14.8%; the UK figure was 11.2% in 1993. Denmark has a population (5.3 million) similar to that of Scotland. The prevalence of HAI in Denmark fell from 12.1% in 1979 to 8.0% in 1999, due to a series of measures especially improvements in catheterisation. Learning from what has proved effective in Denmark, can therefore usefully guide efforts in Scotland.

The Danish infection Control System

Denmark consists of 14 counties plus the capital region. There are three medical schools and 71 hospitals (with 18,500 beds) providing treatment free of charge. Since 1977 the National Centre for Hospital Hygiene has provided guidelines, surveillance, advice and research. In each county, one clinical microbiology laboratory, situated at the university hospital or the major regional hospital, has local infection control responsibility.

Infection control doctors are clinical microbiologists and regular courses are run to give nurses specific infection control training. At local level the 15 clinical microbiology labs are responsible for examining specimens, advising clinicians on antibiotic treatment and advising on isolation precautions in situations of bacterial resistance. Other responsibilities for the microbiologist are the local medicines committee (with the hospital pharmacist and clinicians), antibiotic guidelines, education, audit, and membership of the infection control team.

Currently Denmark has no regulations targeted at preventing HAI in hospitals, although there has been some political debate about this. National standards have been elaborated between 1998 and 2002. There is a growing focus on quality assurance in hospitals but so far only one hospital is fully accredited. The number of official complaints about treatment in hospitals is increasing. Private hospitals and clinics are becoming more numerous and some patients are sent abroad for treatment. Standards for infection control in the healthcare sector include requirements for the management system, and 12 specific standards relating to:

- procedures in primary care

- hand-washing practice
- use of intravascular catheters
- surveillance and investigation of outbreaks
- prevention of surgical site infections
- infection prophylaxis in single-use urinary incontinence devices
- indwelling catheters in the urinary tract
- laundering and handling of textiles for multiple use
- acquisition and maintenance of technical and medical devices
- cleaning
- food, including transport and serving
- procedures in dental clinics

The Danish Integrated Antimicrobial Resistance Monitoring and Research Programme (DANMAP) was launched in 1995 as a collaborative project of the Danish Veterinary Laboratory, the Danish Veterinary and Food Administration, the Statens Serum Institute and the Danish Medicines Agency. Annual reports of antimicrobial resistance in humans and animals have been collected since 1996; the importance of continuous monitoring of resistance, of consumption, and of interventions, is acknowledged. In Denmark in 1999, 9.6% of antibiotics consumed were prescribed in hospitals and 90.4% were prescribed in primary care. Almost half of the antibacterial agents prescribed were either broad-spectrum penicillins or beta-lactamase sensitive penicillins.

Key Issues

The principal HAI problems in Denmark are surgical wound infections, nosocomial pneumonia, intra-vascular catheter infections and small round structured virus (SRSV) gastro-enteritis. The proportion of cases where infection is diagnosed in the primary care sector is increasing. Danish reports of *Staphylococcus aureus* resistant to methicillin (MRSA) peaked between 1964 and 1975; thereafter resistance levels have remained low. In 1996 a study showed the prevalence of MRSA surgical wound infections to be 0.1% in Denmark compared to 33.8% in France.

In Denmark principal issues in infection control include surveillance, guidelines, standards and education. Patient profile is relevant, with an anticipated rise in numbers of elderly and immuno-suppressed patients and in those with medical devices inserted. Specialised equipment (such as endoscopes) may be difficult to clean. Old hospital buildings can add to infection control problems: lack of single rooms makes isolation of patients difficult and shortage of bathrooms and toilets encourages outbreaks of SRSV gastro-enteritis. Over-stretched water supplies with long pipelines are difficult to maintain and may predispose to nosocomial legionellosis – although this may also occur in newer hospital buildings with poor maintenance.

Lessons from Denmark

1. The importance of adequate levels of trained staff:

Danish experience is that the prevalence of HAI is inversely to nurse patient ratios. A US study of the relation between adverse outcomes among medical patients and the proportion of registered nurse hours to medical patients found that urinary tract infections and hospital acquired pneumonias had strong statistically significant associations with low ratios.

2. The need for simple surveillance systems and effective feedback from them

During the 1990s a number of surveys of surgical wound infections were found to have poor sensitivity and it was concluded that a simpler system was needed. The Helics III project was piloted between January and May 2002 and evaluation is underway. Well-defined major elective or emergency operations are coded; the patient's risk is stratified according to patient's physical condition, duration of surgery and contamination of surgical area; surgical site infection is recorded as superficial incisional or deep incisional, with reference to organ or space involved. Records are entered and automatic reports generated via the Internet.

3. Being clear about success factors for infection control

In the Danish experience, factors involved in effective HAI control include:

- involvement of hospital management;
- local infection control teams, with national and local co-operation;
- a continued restrictive antibiotic policy;
- efficient communication between clinical microbiologists and clinicians at local level;
- education of infection control nurses.

4. Targeting measures to reduce MRSA

Danish efforts to keep the incidence of MRSA (and of other resistant bacteria) low include:

- isolating patients transferred from hospitals outside Scandinavia on arrival and screening them for resistant bacteria;
- screening staff members who have worked in hospitals outside Scandinavia for MRSA;
- isolating patients with resistant organisms including MRSA, gentamycin-resistant enterobacteria, ESBL-producing enterobacteria and penicillin-resistant pneumococci;
- restricting antibiotic use.

5. Rigorous attention to prudent prescribing of anti-microbial preparations.

A 1990 study compared antibiotic policy in intensive care units in a number of countries. In Denmark 32% of units had written guidelines and a restricted antibiotic list, 21% had informed mutual consent and a restricted antibiotic list, while 47% were outwith these categories. In Scotland the corresponding figures were 13%, 16% and 71%.

KEY ISSUES IN HEALTHCARE ASSOCIATED INFECTION, HYGIENE AND INFECTION CONTROL- THE CONVENTION WORKSHOPS

1. Equipment, environment and patient management

Purpose of the workshop

To review how the purchase and upkeep of equipment, the design, maintenance and cleaning of the clinical environment and the management of clinical services could be improved to help reduce the risk of HAI.

Background

With respect to medical devices, relevant factors include ease of decontamination and the relative merits of single-use, disposable instruments. Decontamination of patient-associated equipment such as beds and wheelchairs is vitally important. Care must be taken to avoid missing relatively inaccessible areas such as the undersides of beds and catheter stands. .

Environmental issues impacting on HAI range from the fabric and maintenance of buildings to the design of new or old clinical areas including bed spacing and storage. Ease of cleaning has to be considered. Levels of provision of wash hand basins and facilities for isolating patients are key factors influencing HAI rates. Old buildings especially the age of plumbing systems, often hamper effective infection control.

The impact of poor clinical environment on the incidence of HAI can be compounded by patient management factors such as bed occupancy and throughput. Delayed discharges increase the likelihood of patients acquiring infection – and HAI can, in turn, lead to delayed discharge. Boarding out of patients in other areas makes surveillance of HAI more complex and can increase the risk of transmission of infection. The workload on clinical staff affects attention to hand washing and, in the longer term, recruitment and retention of staff. Staff turnover rates can diminish the impact of training and education programmes on hygiene and infection control.

Legislation and guidance in relation to HAI and equipment, the environment and patient management is available from multiple sources but is sometimes conflicting, impracticable, difficult to interpret or not sufficiently explicit.

Discussion

Effective action to reduce HAI by improving the clinical environment and equipment depends on risk management and prioritisation. Resources are inevitably limited and those managing hospitals and other clinical services need to secure agreement on targeting action on risk based priorities. The role of the infection control doctor is pivotal in this. Links between them and NHS Trust facilities/estate management is essential to influence many of the factors underlying HAI such as the spacing and configuration of beds, control of bed occupancy, patient movement and delayed discharges. Better matching of resources to workload should underpin all initiatives.

Audits of the physical environment should be carried out with further development of standards for this area. Upgrading the physical environment to meet HAI-related standards should be a feature of NHS Boards and Trusts' strategic plans for acute services. More attention should be paid to ward layout at the planning stage, with better-designed, designated 'clean' and 'dirty' areas.

A comprehensive local approach to equipment and the physical environment is required. There should be better linkage between estate management and domestic cleaning. Infection control and cleaning services should also work together more closely. Measures to better integrate domestic staff into ward-based clinical teams should be considered. Responsibility for cleaning should be clearly defined between nursing and domestic staff to avoid gaps in coverage. In some circumstances, designating nursing staff as 'clean' and 'dirty' could help prevent cross contamination. Consideration should be given to developing a 'housekeeper' role with responsibility for upkeep of the ward environment and maintenance of the cleanliness of equipment, furniture and fittings.

Domestic staff are low paid yet have a significant potential role in infection control. Permanent staff are preferable to temporary staff, and in-house cleaning staff are preferable to agency staff. Training in infection control awareness could be appropriate, with empowerment, possibly as ‘cleaning champions’. Food safety and dish washing has a role in infection control. Staff must ensure uniforms are laundered regularly and not worn at home or when travelling between work and home. Laundry systems should have a quick turn-around time.

Recommendations

For NHS Trusts

- The general state of hygiene and cleanliness of clinical environments should be regularly audited against measurable standards.
- A comprehensive approach to cleaning should be undertaken to identify key responsibilities. This should include consideration of the development a “housekeeper” post i.e. a key person on each ward to lead on cleanliness and environmental and equipment maintenance.
- A laundry/uniforms policy should ensure that uniforms are cleaned frequently and not worn away from the clinical area.

For SEHD

- An integrated approach is needed for planning new hospitals and upgrading existing ones. Infection control planning should be built in e.g. designated ‘clean’ and ‘dirty’ areas and well-located hand washing facilities.
- Further study is needed into the impact on HAI of patient management issues such as bed occupancy, admissions procedure, discharges, patient movement and boarding out.
- Resources for HAI should be ring-fenced nationally.

For CSBS

- In addition to standards for management control systems related to cleaning services, CSBS should develop technical standards which indicate the requirements for effective cleaning in specific clinical settings.

The promotion of good practice in hygiene and infection control

Purpose of the workshop

To review how staff can be helped to improve their practice in hygiene and infection control activities.

Background

Education is recognised as being vital improving hygiene and infection control practice but it must involve all staff: support services, nursing and junior and senior medical staff. Hand hygiene is the key issue. All staff must clean their hands between patients, and encouragement should include the use of skin-friendly products. Alcohol wipes may be a valuable alternative to hand washing but their potential as a fire hazard can complicate storage and use.

Some elements of current professional training relate to infection control. Nurses and midwives are required to meet competencies specified by the Nursing and Midwifery Council prior to entering the profession. Certain of these relate to patient safety and public protection, and thus take account of infection control issues.

Infection control services have a key role in promoting good practice throughout hospitals and other clinical settings. Since 1996, progress has been made within nursing and midwifery and it is now possible for a practitioner wishing to specialise in infection control to determine an educational pathway from acquisition of core competencies to specialist qualification, including a Master's Degree in Infection Control. Scottish Executive funding has been made available to provide training for an increased number of infection control specialist nurses, based on the assumption that there is a direct link between education and training and high standards.

Discussion

Education and training on hygiene and infection control must be strengthened if we are to combat the growing incidence of HAI. In order to do so, consideration must be given to the following issues:

- The need for further mapping to obtain a clearer picture of the provision of relevant undergraduate education in infection control and hygiene across all disciplines.
- Whether continuing professional development (CPD) in infection control should be mandatory for all staff, or just for some.
- The need to establish curricular guidelines for CPD on infection control and hygiene with arrangements for quality assurance and accreditation
- Ways of ensuring adequate infection control education is provided for all staff, in particular support workers.

Taking these forward will require studying now best to capitalise on the infrastructure set out in the Government's *Learning Together* strategy, in particular personal development plans. Discussions should take place between professional bodies and NHS Trusts about the production of local CPD plans for infection control and hygiene. NHS Trusts need to assess how in-house education (e.g. protected study time or work-based projects) should be resourced. Expanding the CSBS standards to include monitoring education and training programmes should be considered.

A standardised training package on hygiene and should be developed and made available to *all* staff. A CD-ROM would have the advantage of flexibility in time of use and could avoid the need to take staff off duty at a fixed time.

However education and training can only go so far. It is generally accepted that promoting good standards of hygiene behaviour is a corporate responsibility, but the behaviour of a poorly compliant member of staff can compromise the integrity of the entire system. Lines of responsibility down to the level of the individual worker must be clearer and the role of any infection control champion in relation to this must be clarified. It must be made clear to individuals and to teams that infection control involves more than hand hygiene.

Acceptability of the concept of cleanliness champions has still to be established, together with a job description consistent across Scotland and lines of accountability, which may be through the ward manager, the infection control team or the infection control nurse. Arrangements for the community sector will be necessary and educational preparation through Nurse Education Scotland.

Recommendations

For NHS Trusts

- Management should ensure that staff are aware that adequate attention to hygiene and infection control especially hand hygiene are essential aspects of patients' rights to safe healthcare. As such it is a key component of staff's duty of care.
- Clinical governance systems should audit compliance with hygiene related standards in clinical care.
- Adequate time must be created for infection control and hygiene training
- Trusts should ensure adequate trained staff-to-patient ratios in clinical settings to help reduce HAI.

For SEHD

- Improving education and training in infection control and hygiene for all staff should be an explicit priority for the NHS in Scotland. A multi-disciplinary approach is necessary with as much emphasis on primary care as on secondary care.
- Further consideration should be given to the establishment of "infection champions" on wards including the most cost-effective use of resources to facilitate good hygiene and infection control practice on wards.

For NHS Education

- Undergraduate training and continuing education of all staff are essential. Discussions should take place with professional bodies responsible for these areas to ensure adequate programmes are in place.
- The development of a unified communication approach is needed e.g. a common website to avoid multiple, and possibly conflicting, sources of information.

For CSBS

- Current HAI related risk management standards should be expanded to cover the monitoring of NHS Trusts' systems for education and training in infection control and hygiene.

Antimicrobial resistance and prescribing

The purpose of the Workshop

To review how to take forward action to reduce antimicrobial resistance (AMR) and improve antibiotic prescribing

Background

Although information about antibiotic resistance in Scotland is scarce, there are some indications that levels are increasing and starting to impact significantly on the effectiveness of a range of healthcare interventions. We may be approaching a crisis. National monitoring of antibiotic prescribing through Scottish Antimicrobial Resistance Surveillance (SARS) is voluntary, and therefore incomplete, and international collaboration is trivial. The long-awaited Electronic Communication of Surveillance in Scotland (ECOSS) system has yet to be implemented.

Monitoring of antibiotic prescribing can relate to either volume or quality. Volume is easier to measure and there are good data relating to primary care, indicating a reduction in antibiotic prescribing in recent years. Although data are less robust, this does not seem to be the case in the acute sector where there has been an increase in prescribing of broad-spectrum antibiotics. Data on quality of prescribing, in both primary care and the acute sector, are very poor making evaluation difficult; this in itself is a problem to be tackled. Indications are, however, that many drugs are prescribed without any basis of theoretical knowledge.

Costs in relation to antibiotic resistance are due to direct expenditure on antibiotics, prolonged hospital stays, increased morbidity and mortality and the overall expense of reactive 'fire-fighting' rather than pro-active control. Education to reduce inappropriate antibiotic use will lead to reductions in levels of antimicrobial resistance, improved patient outcomes and ultimately savings.

Defining problems surrounding antibiotic prescribing and antimicrobial resistance is the starting point to finding solutions. Lack of funding for contact screening and surveillance, poor isolation facilities and no national control strategy has led to spread of resistant organisms such as MRSA. Lack of knowledge about infection and the appropriate use of antibiotics may lead to over-prescribing by junior medical staff when not under direct consultant supervision. Antibiotics are considered to be safe and non-toxic and resistance is not seen as a problem.

Clinical factors leading to increasing resistance include prescribing without a basis of theory, a patient population with increasing susceptibility to infection, disrupted continuity of care and insufficient development and production of new antibiotics. Surveillance of resistance is often inadequate, with failure to communicate surveillance findings to clinicians. The levels of antimicrobial resistance in local settings must be monitored and clinicians made aware of the findings. Microbiologists must liaise with clinicians, and clinicians must act on the information provided.

Discussion

There is a lack of systematic monitoring of prescribing rates, both locally and nationally. Improvements in this area will raise the profile of the issues involved and encourage trust leaders to instigate a team approach to the problem. There is no central funding for microbiology services, unlike in Denmark where the system may have contributed to a reduction in antibiotic prescribing.

Clear guidelines on antibiotic prescribing are lacking. Guidelines are more likely to be effective if resources are dedicated to their implementation and to monitoring. Junior medical staff should have clear guidelines on identification of sepsis, recognition of the severity of illness, and the use of antibiotics in treating it.

Failure to communicate information on antimicrobial resistance when patients are moved between primary and secondary care and care homes can contribute to spread of resistant organisms. Communication routes between services must be improved to ensure all relevant healthcare professionals are fully informed of a patient's medical history and thus minimise the chance of further infection. Similarly there may be failure to track the movements of patients who have antimicrobial resistance when they are 'boarded-out'. Including such patients in monitoring of resistance is crucial to study the patterns of infection and limit its spread.

Bed-blocking contributes to an increase in infections, with increase in use of antibiotics: antimicrobial resistance is a manifestation of current 'stress in the system' within the NHS.

Recommendations

For NHS Trusts and Boards

- Information systems should be developed to monitor and audit the prescribing of antibiotics.
- Multidisciplinary antibiotic prescribing teams should be formed to promote prudent prescribing throughout healthcare systems. The involvement of pharmacists in front-line education about antibiotics and monitoring antibiotic prescribing should be secured

For NHS Education

- A national educational strategy in relation to antibiotic prescribing and antimicrobial resistance should be developed.

For SEHD

- A review should take place of the barriers preventing a reduction in antibiotic prescribing, and which measures are required to enable SEHD strategic goals for AMR to be reached. This should include identifying NHS leaders for AMR in Scotland.
- A national computerised integrated prescribing systems should be introduced to improve prescribing quality and reduce the volume of prescribing. The system should feature intelligent electronic prescribing systems which identify whether or not the appropriate antibiotic is being prescribed, would in theory reduce incorrect or over-prescribing.

Public communication and consumer involvement

Purpose of the workshop

To review how best to inform patients and the general public about the risk to them from HAI, what actions are being taken to protect them from it and whether these are working.

Background

The perception of HAI held by patients and the public, and its effect on their involvement in HAI prevention, is important. Patients need to know about that there are risks associated with healthcare. The methods used to inform them about this should seek to allay unnecessary anxiety.

The media constitute the principal source of public information. Media reporting on HAI can be unhelpful but it can have a valuable role in raising public awareness. Reporting of the current 8-9% prevalence of HAI in hospital in-patients, coupled with high profile reporting of outbreaks of HAI and associated deaths, is a cause of understandable public concern. It is important that the NHS encourages balanced and informed reporting.

The NHS has a duty to provide accurate and relevant information and advice to patients so that they have sufficient knowledge of these when providing consent to the care and treatment being offered to them. Appropriate information should be provided to patients before admission to hospital (or other healthcare facility) and during their stay. Patients have a right to refuse care if they believe themselves to be at risk of infection.

Public expectations of and demands on healthcare have never been greater. High levels of investment are now being made to help meet some of these. This increases the need for ensuring those charged with turning investment into action and meeting needs and expectations, are appropriately held to account. Performance management has become a key feature of the NHS. Those using services often wish to know how their local hospital is performing. The recent publication of results from the national MRSA surveillance programme were quickly turned into league tables by the media.

Discussion

Patients have a right to clear, concise and comprehensible information about HAI when they are about or are receiving an episode of care. This should include details about the risk of HAI associated with the treatment or care they are receiving or will receive and what will be done to reduce that risk. If necessary, there should be an opportunity to discuss particular concerns with a clinician.

Information should also be made available (along with visiting times) for hospital visitors, including advice on hand-washing, on bringing in food and drink, on bringing small children to visit and on avoiding visiting if unwell e.g. with respiratory infection or diarrhoea. Patients and visitors should be aware of action to take if they have any concerns about standards of cleanliness.

General public information in relation to HAI should be made available by the Health Education Board for Scotland (HEBS) and updated regularly. This should include appropriate information on risk and also advice on risk reduction, including hand hygiene. Advice on antibiotics, their appropriate use and misuse, could have an impact on the related issue of antimicrobial resistance.

Publishing HAI prevalence figures should be part of a policy of openness and empowerment, but care must be taken to provide full information concerning background and context to avoid a situation of inappropriate league tables. The value of league tables is questionable.

Handling information in the event of an outbreak, or an HAI-related death, is easier if the Trust and/or Board has established an on-going open relationship with local media and if information is provided proactively. Local press officers can be guided by the Scottish Executive as to what information is appropriate to release and a clear written press statement should be issued. Due attention must be paid to confidentiality: patients' names should not be released without consent and any information leading to deductive disclosure should be withheld. There is no justification for informing any member of the public (e.g. a fellow patient) of a patient's clinical details, including status with respect to HAI or MRSA.

Consideration should be given to involving the public in the development of infection control strategies e.g. through local health councils. The Clinical Standards Board for Scotland ensures public representation in its project groups, such as the HAI Reference Group, and in its peer-review teams.

Recommendations

For NHS Trusts

- Trust should acknowledge that patients are entitled to appropriate information before hospital admission, and once admitted and should develop procedures for providing them with this.
- Trusts should provide advice and information on HAI and hygiene to hospital visitors

- Trusts should adopt a pro-active media strategy, providing on-going information, particularly to local media.
- There should be public involvement in planning and auditing local risk management programmes.

For HEBS

- HEBS should develop and disseminate general information on HAI, which reinforces the importance of hand hygiene, and the appropriate use of antibiotics.

For SEHD

- Trusts should be given central guidance from SEHD on disclosure of information in relation to HAI, in particular in the case of outbreaks.
- A comprehensive strategy on the release of surveillance, compliance with standards and HAI related performance management information should be developed.

Roles, responsibilities and organisational development

Purpose of the Workshop

To review the current roles and responsibilities of healthcare staff in reducing the risk of HAI, how these might be clarified and amended and how staff should be best organised to impact on the overall problem.

Background

Effectively managed infection control can dramatically reduce the cost of treatment; even a relatively small, dedicated resource, if properly deployed, can have a very significant impact. The purpose of this workshop was to define which staff groupings are key to ensuring good hygiene and infection control practice is commonplace in the NHS in Scotland and how these should be organised.

In recognition of the growing impact of HAI and the need to carefully husband resources to achieve a maximum reduction in its incidence in the shortest time possible, SEHD commissioned SCIEH to carry out an investigation of best practice in order to develop a model of infection control that could be deployed throughout the Scottish healthcare system.

An initial report, published in December 2001, emphasised that, if infection control is to be managed effectively, it must become integral to the jobs of everyone involved in providing patient care, including non-clinical support services. It is not sufficient for specialist services devoted to infection control, however well resourced, to work in isolation.

The initial work identified the range of individuals - from Chief Executives to domestic staff - who must play an active part in achieving effective infection control. Initial models outlining responsibilities for all involved were developed in conjunction with a cross-section of staff from across Scotland. A second piece of work examined the outline model in detail in association with three pilot sites: Tayside University Hospital Trust, Renfrew and Inverclyde Primary Care Trust, and Lanarkshire NHS Board.

A further report, based on the pilot work was submitted in May 2002, reaffirming that infection control must be integral to the performance management of the organisation and presenting the generic model of the roles, responsibilities and relationships required if

infection control is to be given sufficient priority. The jobs of all healthcare personnel are affected: for the first time, each job has been defined comprehensively and in detail, enabling very clear job descriptions to be written for all staff involved in any aspect of infection control. By writing specific, measurable, achievable, realistic and time-bound (SMART) objectives annually, every healthcare organisation can be much more focused in its management of infection control.

The Clinical Standards Board for Scotland has already set the standard in infection control with which Trusts should comply, but the detailed measures to be used have not been specified. The proposed model is complementary to the CSBS standard, and should help NHS trusts comply with it by providing additional levels of detail on roles, responsibilities, policies and procedures.

Discussion

The HAI issues impacting on different NHS Trusts and Boards are very similar. There are therefore clear benefits to be gained from working across boundaries. By extending the focus of the work to include infection control and communicable disease control, the resources of the NHS Board, Acute Trust and Primary Care Trust could be better managed as an integral whole, while retaining a clear focus on the different healthcare settings. This will avoid unnecessary duplication of work, facilitate sharing of knowledge and experience, and provide a greater element of cover when resources in any one sector are particularly stretched. Area infection control committees focused to reflect this integrated remit could become a very effective forum. Organisational arrangements could be customised locally as specialist skills and practices differ in different areas and Trusts.

Managerial responsibility must be driven from the top of the organisation through the managerial line; all healthcare personnel must play an active role in preventing infection, with the support of specialist staff. Infection and communicable disease control should be the responsibility of all. The proposed model will help create a culture where this is intrinsic, reinforced by appropriate education and training.

In the course of the convention concerns were expressed that appointing infection control liaison practitioners or 'champions' would not address infection control problems effectively, particularly if the individuals appointed lacked authority and if accountability shifted from clinicians. The role of the infection control doctor is acknowledged to be of primary importance, but current levels of support rarely reflect this. Infection control doctors must have allocated sessional time to be effective, and should be a resource available to both acute and primary care Trusts. Surveillance is an important part of infection and communicable disease control, and this will be reflected in the model, with appropriate allocation of responsibility.

The SCIEH work proposes benchmarks by which NHS trusts can assess how adequate are their levels of dedicated staff required to provide infection control and communicable disease control in a cost-effective manner, taking account of the local population and the specific healthcare environment. Consideration must be given to difficulty in recruiting adequate numbers of infection control nurses at a time of national shortage. A central resource to develop specialist training and guidelines for policy implementation to be made available for local adaptation would be a very practical way of supporting infection and communicable disease control across Scotland. Adopting the model has resource implications and Trusts will require to allocate proportionately more resources to the infection control agenda.

Recommendations

For SCIEH

- The Model of Infection Control and Communicable Disease Control should be circulated widely for consultation with stakeholders.

For NHS Trusts

- Any ‘champions’ or appointees in infection control liaison should either be G grade nurses or should relate closely to grade G nurses.
- Infection control doctors should have allocated session time, as specified in CSBS Infection Control standards.

For SEHD

- Model policies, procedures and training should be produced at national level with a view to being customised at local level as necessary.
- Effective management of infection control should be on an area basis and driven through the NHS Board.
- A post should be created to co-ordinate infection control education in Scotland.

The risk management of HAI by healthcare organisations

The purpose of the workshop

To assess how well guidance on the risk management of HAI by NHS organisations is being implemented and what more can be done to develop this area.

Background

SEHD policy is for NHS organisations to recognise HAI as a priority patient safety issue and to manage it through a risk-based approach. Risk is measured in terms of consequences and likelihood of an event. Risk management is the culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects. The reasons for adopting a risk-based approach to HAI are to satisfy ethical requirements, to protect health, to comply with legal obligations, to ensure political accountability, to reduce financial liabilities and to maintain reputation.

Methodology and models of good practice in risk management are available, most notably the Australia and New Zealand risk matrix AS/NZS 4360:99, *Risk Management in Clinical Practice*. However the interim report on the CSBS infection control standards makes it clear that NHS Trusts do not currently have sufficient resource or expertise to assess and manage the risk of HAI adequately. The challenge is to disseminate models of excellence, to ensure compliance, and to integrate infection control into the risk management process so that it becomes a core part of routine practice.

The risk management process has a number of basic steps. Establishing the context and identifying, analysing, evaluating and treating risks lead to production of an appropriate risk strategy, risk manual, risk register and action plan. Stakeholders inform the process, and all stages are accompanied by communication, consultation, monitoring and review, involving internal and external sources. Internal sources include clinical incident monitoring, GP

adverse event reporting, variance analysis, trends and clusters, complaints and claims. External sources include advisory committees, national guidance, academic papers, professional journals, patient experience surveys, confidential enquiries, and reports from the Ombudsman, fatal accident enquiries and the National Patient Safety Agency. Risk identification in clinical activity may be reactive (i.e. an adverse event) or proactive (i.e. risk assessment). In both cases clinical review leads to risk analysis and risk evaluation.

Information sources for identifying hazards include contract information, service quality level agreements, survey reports, clinical indicators, patient records, review of documentation of care and channels of communication. A matrix approach to assessing risk must take account of organisational objectives and staff needs. Issues in relation to incident reporting include the definition of a clinical or non-clinical adverse event; whether near-misses should be included; influences on people, including culture, training and the effect of blame; and reporting to external bodies such as the Medical Devices Agency, the Health and Safety Executive and the National Patient Safety Agency.

To improve performance and quality of care, all staff must be able to share experiences and learn from near misses and adverse events. Key issues for clinical staff include incident management, investment in leadership at all levels, workforce planning integrating services and involving patients and the public. A sound system of internal control, with risk reduction through better management, will minimise unintended harm and financial loss while improving patient safety, quality of care and the health, safety and welfare of staff. Objectives should be met, ensuring the best use of available resources and public assurances of this must be provided. Research, practice and education are part of designing the future.

Discussion

Senior Management support for those NHS Trust staff working in developing risk management must be more apparent. Risk management of HAI should be included in clinical governance processes. Defined policies and clarity and understanding of roles, with ownership, are essential.

All staff, not just infection control, should be aware of the essential contribution of infection control to patient safety. They must be continually educated, from induction onwards, to re-enforce good practice. The need for commitment to reducing risks to patients must be embedded from the first day of training and reinforced continuously. Particular emphasis should be paid to members of the medical profession who are often seen as the worst offenders with regard to hand hygiene. Infection control should be monitored and its profile raised through professional appraisals.

Risk managers should provide education in risk management methodology while supporting and facilitating action in relation to risks identified by front-line health workers. They must ensure on-going communication about patient safety issues throughout the organisation and be involved in key projects and processes, which have an impact on them. There should be less focus on structure and process and more on cultural issues and sustained commitment to change.

An annual plan for area control of infection committees should target action on priorities defined through risk assessment. Among issues which may be featured are antibiotic and prescribing issues; catheter use; decontamination; admission, screening and discharge; hand hygiene. Communication, resources, common policies and procedures should be addressed.

Currently there is a gap in the CSBS infection control standard regarding public health input. An effective interface between public health and primary care trusts could contribute to

patient and public education; inclusion of nursing homes, care homes and private facilities in risk management; and horizon scanning for future resistant organisms in HAI.

Recommendations

For NHS Trusts

- Emphasis should be placed on assessing the risk of infection resulting from the patient's journey through care, integrating where appropriate acute and primary care throughout a health episode.
- Risk management should entail a pragmatic, integrated, whole system approach.
- Roles and structures in relation to risk management should be clarified. Risk managers should sit on infection control committees and infection control staff should sit on risk management committees.
- Wherever possible, practical risk management measures which are helpful to front-line staff should be prioritised e.g. more and better uniforms and changing facilities and less movement of staff and patients.
- There should be improved leadership and increased empowerment. A cultural change towards team working and mutual respect would motivate individuals, encouraging pride in the job and in patient care.
- Public involvement in risk management processes should be strengthened. Patients are often excluded from risk management and need information, involvement and education. The public should be made aware of means of limiting the spread of infection and should be empowered to challenge professionals.
- Terminology should be demystified, with avoidance of jargon.

For SEHD

- SEHD should promote the adoption throughout the NHS of the AS/NZS 4360:99 risk management standard as a core component of routine practice.
- There should be less regulation and more facilitation but links with the Health and Safety Executive should be developed.
- The public health input into HAI should be developed.
- HAI related performance indicators, which can be related to occupancy and staff/bed ratios, should be developed for local and national application .
- Resources are required to facilitate changes, especially at the level of direct patient care. Local resources for local use could increase motivation.

Surveillance and research

The purpose of the Workshop

To consider how well the current national HAI surveillance programme is being implemented, what more can be done to develop this area, what are research priorities.

Background

The 2001 guidance *A Framework for National Surveillance of Hospital Acquired Infection in Scotland* acknowledges that appropriate surveillance of HAI is a keystone in the reduction of infection rates and recommends a framework for national HAI surveillance, based on collaboration between SCIEH and NHS Trusts. Surveillance activity in Trusts should generate data to be used locally to improve performance in reducing infection rates; national data are compiled from these local data. Data collection should be in accordance with

standardised national protocols and definitions to ensure comparable data from all parts of Scotland. Data should be fed back in a timely manner to improve care locally.

The initial programme of surveillance focussed on acute care and was concentrated in three areas:

- All trusts were required, by autumn 2001, to establish mechanisms to collect data on MRSA bacteraemias (cases where the organism was isolated from the patient's bloodstream) and to make these data available by April 2002.
- All trusts were required to implement surveillance of inpatient surgical site infection for at least two operative procedures from a specified list, including one orthopaedic procedure. Structures were to be in place to collect this information by April 2002, with data to be available by 2003.
- Surveillance of HAI following neurosurgical procedures should be in place by April 2002.

SCIEH was required to compile national reports (with annual reporting of HAI incidence to commence in 2002) to disseminate good practice, and to develop and implement a system to collect data on incidents and outbreaks of hospital infection. Increased resources would be made available to counter HAI: in particular, SEHD would fund an expanded national training programme for infection control nurses to meet expected growth in demand for their skills and make increased funding available to SCIEH to support its central facilitating and co-ordinating role.

In line with these recommendations, a multidisciplinary HAI Surveillance Steering Group (HAISSG) was established by SCIEH to facilitate implementation of the national surveillance system, provide strategic direction and monitor progress. A national protocol for surveillance of surgical site infections (based on that of the Centers for Disease Control in Atlanta) was developed by the end of 2001. Facilitatory communication and collaboration with Trusts, and well-attended training days are ongoing; five Trusts have started surveillance, 12 more are optimistic, awaiting local resources, and discussions on neurosurgery continue.

A Scottish Surveillance for HAI Programme (SSHAIP) newsletter is published every six months and the first two quarterly national surveillance reports on MRSA bacteraemias were published in April and in July 2002. The first of these reports indicated that in the calendar year 2001, in 18 acute Trusts in Scotland, recorded rates of MRSA bacteraemia ranged from 0 per 1000 bed days to 0.25 per 1000 bed days. The second report, covering the period April 2001 to March 2002 in a total of 17 Trusts, recorded MRSA bacteraemia rates of 0 to 3.6 per 1000 bed days.

Discussion

The development of a national HAI database is a significant step. But the programme has limitations: data are collected in relation to a small number of procedures; MRSA surveillance covers bacteraemias only and incidence is not related to risk factors such as the use of intravenous devices. Steps should be taken to link surveillance with data on risk factors.

Additional areas where surveillance is urgently indicated include respiratory syncytial virus (RSV) infections and bacteraemias in specialist paediatric units; antibiotic prescribing and anti-microbial resistance in intensive treatment units (ITUs); and surveillance of outbreaks of HAI. Methods have been developed and it is planned that such surveillance will be introduced later in 2002.

Development of methods for surveillance of infection presenting after discharge from hospital should be a priority e.g. through follow-up by hospital or community-based health care workers including general practitioners. Arrangements for specific payments to GPs for surveillance activities must be considered. Information gaps in relation to surveillance in primary care include MRSA infections and urinary tract infections in care homes, and infection following surgery in general practice.

Hospital-wide prevalence studies, providing information on the totality of HAI in a hospital, are labour intensive and do not provide optimum information for prevention. Such surveys can, however, indicate priorities for surveillance and repeated surveys can show trends in overall prevalence.

It is also important to develop early warning systems for possible HAI outbreaks: this may be achieved by 'data-mining' to detect increases in requests for certain tests or levels of positive tests above expected norms.

In Acute NHS Trusts, HAI priorities relate to reporting infections with the 15 organisms included in the *Alert* surveillance system for antimicrobial resistance and with organisms such as *Clostridium difficile*, vancomycin-resistant enterococci and ESBLs. Other important areas are hospital-acquired pneumonias and infections in specific patient groups e.g. hospital acquired urinary tract infections in the elderly. Urinary tract infection is common, but often first becomes evident after discharge from hospital.

The imminent report from the Confidentiality and Security Advisory Group for Scotland (CSAGS) may have implications for the collection of surveillance data. Measures must be taken to ensure that data quality is not compromised by exclusion of data from some eligible patients, that national data collection is not needlessly obstructed, and that patients' rights are safeguarded.

Areas where further research is indicated include methods for surveillance of post-discharge infection, validation of definitions of wound infection and identification of effective interventions. It is anticipated that validation research on surveillance of surgical site infections will be undertaken on a UK basis. There are current UK research initiatives in relation to the role and mechanisms of feedback in reducing infection rates and identification of other effective interventions, but more work is needed. Research into the basic science of infection should not be overlooked and developing early warning systems for possible outbreaks, through mechanisms like data-mining, is a priority research area. Further study is required into the movement of patients around hospital and its effects on HAI.

Recommendations

For NHS Trusts

- Surveillance of HAI should be viewed as a priority. The current national programme of surveillance must be implemented.

For SCIEH

- A national prevalence survey of HAI should be carried out to inform decision making on future priorities for HAI surveillance.
- Robust methods of post-discharge surveillance should be developed, on a UK basis, and a system for such surveillance implemented as soon as possible.
- Surveillance of hospital-acquired urinary tract infection, which is common, should be developed.

- Surveillance data should be presented clearly and in a format appropriate for the intended user and purpose; data made available to the public should provide accurate and comprehensible information.
- Account should be taken on issues relating to confidentiality and data security to ensure complete, reliable, accurate and robust surveillance data, without infringement of patients' rights.

For SEHD

- Research should be undertaken into the following:
 - methods of using routinely available data for early recognition of outbreaks and prediction of risk incidents;
 - the relationship of HAI to occupancy and admissions; and
 - the impact of HAI on healthcare effectiveness and efficiency.

HAI related standards

The purpose of the Workshop

To review the current CSBS HAI risk management standards, how they are being implemented and what more can be done to develop this area.

Background

In August 2001 the report *Managing the Risk of Healthcare Associated Infection* set out draft standards for infection control, decontamination of reusable medical devices and cleaning services. The now has responsibility for developing and monitoring these standards. Its HAI Reference Group advises them on these issues. The standards set yardsticks for assessing how well NHS Trust have systems in place to reduce the risk of HAI.

Draft CSBS standards for infection control were issued in August 2001. They were subject to wide consultation, including two open meetings, and piloted in three Trust sites to ensure that they could be applied successfully in practice before finalised standards were published in December 2001. All but one of the 15 standards reflect structures and processes supporting infection control and affecting clinical outcomes; the remaining standard, for hand hygiene, is most directly related to clinical practice and its inclusion reflects the importance of the topic and the strength of the supporting evidence base. Since April 1999 Scottish Trusts and Boards have been working within the CNORIS (Clinical Negligence and Other Risks Indemnity Scheme) framework of 20 complementary clinical and non-clinical risk management standards. The CSBS standards were designed to be applied within the organisation's risk management framework and to be integrated with the CNORIS standards.

By January 2002, 33 Trusts and Island Boards had submitted self-assessments against the CSBS infection control (IC) standards. An interim report *Improving Clinical Care in Scotland: HAI/IC standards*, published in May 2002, revealed a number of shortcomings. Most Trusts did not have plans to address the full implications of HAI, and infection control often depended on limited resources with small numbers of staff expected to cover large, often split, sites. CSBS concluded that infection control is difficult to manage because of the diversity of individuals and groups with related interest and responsibility; the challenge is to raise the priority of infection control within the NHS and to ensure that it has a high profile on the clinical governance agenda.

This report indicated much work in progress and provided a robust information base for peer review, which is being carried out by three teams between April and October 2002; all organisations are offered pre-visit discussions, local reports are being prepared, and a national overview is due in January 2003. An SEHD consultation document on infection standards for adult care homes and associated day care centres will be published by the end of October 2002 and it is expected that agreed final standards will be adopted by private and public adult care providers by April 2003.

It is recognised that the importance of support services in general must be re-established; time and effort is needed to establish new priorities and change organisational attitudes and behaviour. In April 2000 Audit Scotland published *A Clean Bill of Health*, a baseline review of domestic services in Scottish hospitals. This report indicated that some hospitals were not meeting national minimum standards, staff absence or frequent turnover compromised quality and there was a lack of infection control input. Costs, productivity and value-for-money varied widely and it was apparent that more efficient organisational and management processes could improve quality and reduce costs.

In line with *Our National Health: a plan for action, a plan for change* recommendations, CSBS was asked to develop standards for cleaning services and draft standards, based on those produced by the *Managing the Risk of HAI* Working Group were produced in August 2001. Following wide consultation and feedback from three pilot sites, the HAI Cleaning Services Sub-group, chaired by Ms Heather Knox, produced revised standards which were issued to trusts in January 2002 with a request to provide self-assessment evidence with comments on compliance. In an Audit Scotland/CSBS collaboration, representatives of domestic services management were advised of the cleaning services standards, visits were completed and local reports written. The final report is due in October 2002; thereafter Audit Scotland and CSBS will work with others to map future action.

Awareness of the potential risk of transmission of vCJD (the human form of BSE) by surgical instruments has led to scrutiny of standards of decontamination of reusable medical devices over the past three years. In 1999 a Scottish Executive Health Department (SEHD) working group, chaired by Dr David Old, was convened to consider the provision of decontamination services in NHSScotland. The group commissioned a pilot review of 15 sites in hospital and primary care; this revealed serious shortcomings and led to the document *The Decontamination of Surgical Instruments and Re-usable Medical Devices*, issued in February 2001, under cover of a Health Department letter (HDL(2001)10).

Thereafter a further SEHD working group, chaired by Mr John Glennie, considered NHSScotland sterile service provision; the group's report was issued in August 2001 under cover of HDL(2001)66. This report includes risk categorisation of surgical procedures in the context of vCJD, specifies interim and full technical requirements and provides deadlines for compliance. Data for the baseline assessment was collected from acute Trusts and island Health Boards by SCIEH and local assessors; compliance was assessed and reported back, and Trusts and Boards produced remedial action plans. These plans are now being implemented with June 2002 set as the deadline for compliance with interim requirements and March 2004 the deadline for full technical requirements. Further progress is the subject of consultation between SEHD, SCIEH and CSBS.

Discussion

Drawing up relevant, stretching but achievable standards is the initial step; the next challenge is to ensure that they are universally adopted. Performance standards will only be effective if agreed and supported by the service.

The organisational culture may encourage different staff members to have different perceptions of risk; it is important for all staff to share the same objectives and to accept that all have a responsibility for high standards of infection control. There must be emphasis on quality controls with open communication systems to facilitate learning from any mistakes made. Operational difficulties in implementing standards include staffing shortages, time constraints and contracting out, diminishing the opportunities for a teamwork, partnership approach. Excessive movement of patients, shortage of beds and rapid patient throughput can all make infection control more difficult. Contracting out of domestic services can hinder maintaining infection control procedures and standards.

Infection control must be integrated into the mainstream risk management system of the organisation. Policies, procedures and guidelines must be up-to-date and accessible; there may be value in a central national resource of policies, procedures and guidelines. All staff should receive instruction on infection control at induction with ongoing education to maintain current knowledge. Awareness of core infection control topics should be compulsory for all staff, like other health and safety issues such as fire safety.

Establishing a functional infection control team can take time. Adequate support, education, training, continuing professional development, equipment and resources must be provided, together with protection from inappropriate secretarial and clerical tasks. Responsibility for audit and for surveillance must be clarified: the risk management process can inform audit and vice versa. Many issues about the role of link nurses or nurse champions remain to be clarified e.g. training and supervision and whether their main value is as role models, to identify risks in clinical areas, or to assist with teaching, audit and surveillance.

A number of other issues can affect implementation of standards. Monitoring and audit processes are currently inadequate to address lapses in infection control procedures; hygiene requirements for catering are more stringent than for health care where the implications are as serious. Uniforms may be seen as a means of identification or a combination of protective clothing and an infection control measure. Lack of evidence that compliance with standards e.g. in relation to hand hygiene or ward cleaning reduces HAI can be a problem: there is a need to relate incidence of infection to current practice.

The basic issue of hand hygiene is how to change culture; this affects all levels of staff but there may be particular difficulty in convincing clinicians, including senior doctors, of the importance of infection control in general and hand hygiene in particular. Effective action must be taken on non-performing staff within a culture of support rather than blame. Gaps are apparent in the basic education of all staff with regard to personal hygiene. There is lack of co-ordination of education and training at national level and duplication of effort in the production of policies, procedures and guidelines. Standards should be mandatory. Priorities are to share information, good practice, training and development, possibly including requirement for a certificate of basic personal hygiene.

Policies in relation to patient boarding and outbreak management should be reviewed with resources matched to workload. Hotel services should become a new priority with infection control involvement in cleaning contracts and with cleaning staff.

Monitoring standards can be achieved through peer review; consumer inspection; healthcare industry accreditation; formal professional review; NHS inspection; external formal audit; statutory inspection or statutory investigation. Currently the CSBS is employing a peer review process to assess compliance with infection control standards and a process of external audit in relation to the cleaning services standard. Peer review requires a large team and entails considerable work for CSBS and for Trusts; annual reviews may not be practical and the CSBS review period could be extended in Trusts with satisfactory progress. Consideration must be given to options for monitoring, including what form external audits

should take, how the Scottish Executive will manage non-compliance and how standards can be prioritised.

The results of monitoring will give better indications of differences between primary and acute trusts and island boards. When reviewing, CSBS and Audit Scotland should give the same level of priority and assistance to cleaning and catering services as they do to other infection control standards. Review by Audit Scotland was seen by some to be inquisitorial rather than supportive and developmental, with use of inappropriately qualified auditors.

Legislation is less prescriptive than in catering, but is relevant to national initiatives and should have linkages with education and training.

CSBS is developing a matrix to enable prioritisation of standards according to associated risk. High priority non-compliance will be reported to SEHD as the internal regulator of NHSScotland. SEHD will require trusts to take remedial action in a reasonable time-scale and to report on the action taken. Reassessment may be indicated to ensure remedial action has been taken. Failure to remedy could impact on the SEHD performance management framework and invoke sanctions including CNORIS premium increase, public reporting of assessment against standards by CSBS, and notification to external regulators such as the Health and Safety Executive.

Recommendations

For NHS Trusts

- Infection control should be a priority for clinical directors and on Board and Trust agendas as part of local performance management.

For SEHD

- Standards relating to facilities and the environment should be developed.
- Review of national initiatives and links with legislation, education and monitoring. Involvement of patients and the public by provision of better information to enable them to reduce risks and improve hygiene.
- Managing non-compliance by progressing the development of a risk matrix. The Health and Safety Executive involvement in sanctions should be clarified.

For CSBS

- Peer review and support would be more helpful than the inquisitorial approach of Audit Scotland. CSBS follow-up should be targeted on particular standards and not on all trusts; CSBS standards should be linked with compliance required by NHS Education Scotland

CONCLUSION

The Convention is a watershed event for infection control in Scotland. It is evidence of commitment at all levels and from all key stakeholders to tackling the problem of HAI.

The presentations and in particular the workshops, highlighted the complexities underlying the causation of HAI and the need for wide-ranging sustainable action in virtually all aspects of health especially in acute services. In many of the workshops and presentations, a number of themes recurred:

- matching top-down initiatives with bottom up commitment and innovation;

- involving all staff including those in support services in team working
- securing management commitment
- extending education and training
- informing and empowering patients
- investing significant resources in infection control and healthcare.

It is the task of SEHD to build on the Convention and continue to support those who came to it, with commitment and aspirations, in taking action to reduce HAI. How this will be done, is described in the next section.

<p>WATT GROUP REPORT</p> <p>CONCLUSIONS AND RECOMMENDATIONS</p>

The Group recognises that hindsight bestows a wisdom that is difficult to achieve when taking day to day decisions in a hard-pressed service. The Group also recognises the wide array of competing pressures on the time, energy and focus of individual managers and on the resources of an NHS Trust that is subject to scrutiny from a wide range of organisations such as the Health & Safety Executive, the Clinical Standards Board for Scotland and the Scottish Health Advisory Service. Nevertheless, hospital acquired infection (HAI) and its control differs significantly from other issues because:

- Infection not only affects an individual but it can, and too frequently does, transmit to others who rightly have an expectation that they will be protected from cross infection;
- There is a distinct and immediate public health implication and the public have an expectation that coherent advice to them will be forthcoming; and
- Even quite small outbreaks of cross infection will have an impact on health service provision, because more resources will be required and also (and of further concern to the public) there is likely to be temporary closure of services such as wards or whole hospitals.

This Report looks at, and comments on, a range of infection control issues that are pertinent throughout the NHS in Scotland. It also makes recommendations on various ways in which the NHS can help to combat HAI in Scottish hospitals. The major themes running through the Report can be summarised within five key areas and include:

- 1) A comprehensive implementation of Infection Control standards at ward/departmental level and the necessary resources to achieve this;
- 2) A properly developed and funded infection control infrastructure;
- 3) A culture change in hand washing, underpinned by hand washing audits for all staff;
- 4) Implementation of a suggested Infection Control Outbreak/Episode Risk Matrix to allow consistent responses and communications across Scotland (Appendix E); and
- 5) Proper emphasis on all aspects of communications in infection control and in outbreaks, including a culture of openness.

The recommendations in this Report should help to ensure that the NHS in Scotland learns the lessons from the outbreak at the Victoria Infirmary and makes changes to minimise the chances of a similar episode occurring in the future. They should therefore be considered as a coherent whole and implemented as a whole.

SUMMARY OF RECOMMENDATIONS

1. *That Trusts should put in place structured audits of hand washing for all groups of staff, including medical, bank, agency and night staff.*
2. *That the cleaning specification in wards and departments should be set by the senior nurse responsible for the area and each ward/departmental manager in collaboration with the relevant Infection Control Team and Domestic Services Manager. Cleaning against this specification should be subject to rigorous monitoring and action to correct deficiencies. Failure to meet the specification should be subject to formal audit and review within each hospital and be subject to public disclosure.*
3. *That the ward/departmental manager should have unambiguous responsibility and be held accountable for all aspects of hygiene in their area. They must have commensurate authority, skills and resources (time and money) to discharge this responsibility.*
4. *That Audit Scotland reports are reviewed carefully by the management of Trusts, and that appropriate action is taken to respond to them.*
5. *That the Clinical Standards Board for Scotland ensures that there are reliable mechanisms in place to monitor compliance with its cleaning services standards.*
6. *That exposure of staff to faeces should be documented through the Incident Reporting Procedure as thoroughly as exposure to any other biological (body) fluids.*
7. *That specific guidelines and facilities (washing, showering, cleaning uniforms) should be available in every hospital for the decontamination of staff who become grossly contaminated from body fluids (blood, urine, faeces and so on).*
8. *That every Trust should have a staff uniform policy that ensures that:*
 - (a) *all staff uniforms are laundered by, or under the auspices of, the NHS;*
 - (b) *the widespread practice of staff travelling to and from work in (potentially contaminated) uniforms ceases; and*
 - (c) *adequate staff changing and decontamination facilities are provided.*
9. *That nursing notes/care plans should clearly reflect the need for enteric precautions in individuals suffering from loose stools /diarrhoea.*
10. *That nursing documentation should be improved so that key information and advice relating to infection control measures can be communicated to all relevant staff.*
11. *That clear infection control guidance to all staff on how to nurse a patient with loose stools/diarrhoea should be provided within the infection control manual.*
12. *That there should be careful consideration nationally on reducing the movement of patients between wards in hospitals so that the likelihood of outbreaks occurring is minimised and when they do occur they are contained within as defined a location as possible.*

13. *That a scientific meeting be organised at which experience and ideas relating to the specific infection control challenges of old buildings be shared and that following this the SEHD should issue guidance on the upgrading and maintenance of such buildings.*
14. *That Trusts ensure that levels of basic ward equipment (e.g., hoist slings, commodes) are sufficient to reduce the communal use of such equipment and reduce the risk of cross-contamination due to inadequate decontamination.*
15. *That Trusts develop policies which clearly identify the accountabilities of nursing and domestic staff in the cleaning of ward furniture and apparatus, including baths, food trolleys and "clinical" equipment and that clearly identify who has overall responsibility.*
16. (a) *That the Scottish Executive Health Department should reinforce the good practice contained within the Scottish Health Facilities Note 30, "Infection Control in the built environment - design and planning," January 2002.*
 (b) *That the NHS in Scotland develops, as a matter of urgency, standards relating to new builds and refurbishment projects incorporating, where necessary, the Scottish Health Facilities Note 30 guidance as best practice and requires Trusts to produce action plans for compliance with Note 30.*
17. *That control of an outbreak must include restriction of staff movement between wards and departments. When patients require infection control precautions to be implemented the nurses providing the care should, where possible, be the 'named nurse'. This should minimise the number of contacts of both the patient and the nurse. This may have implications for staffing of the ward but this will be temporary and not a high recurring cost.*
18. *That the Agency/Bank/Locum induction checklist should include explicit mention of Infection Control precautions in place.*
19. *That all Trusts should put in place assessments of the competencies of nursing staff in Infection Control and ensure that structured training programmes are established and the SEHD should consider with the Nursing Agency proprietors how competencies in Infection Control can be similarly assessed and delivered for Agency nurses. Similar training programmes should be put in place for medical and professions allied to medicine (PAM) staff.*
20. *That all staff at ward or department level who handle food should receive training in food hygiene commensurate with their duties and in compliance with the Food Safety (General Food Hygiene) Regulations 1995.*
21. *That appliances used for storing or preparing food (whether in the ward or elsewhere) should be subject to appropriate inspection and the results recorded.*
22. (a) *That contacts with, and advice given by, any member of the ICT should be documented by both the individuals providing and receiving the advice. This is in addition to infection control care plans.*
 (b) *That nursing documentation should be improved so that key instructions relating to infection control measures can be communicated to all relevant staff.*

23. (a) *That an OCT should always be chaired by someone with competence and authority in health care associated infection. The local Consultant in Public Health Medicine (CPHM) should chair OCTs for major outbreaks (see Appendix E for definition). This demonstrates that the Team is led by an individual external to the Trust, who has close links with the local NHS Board and with community surveillance. In the case of other hospital outbreaks the CPHM should be consulted regarding chairmanship of the team. In practice, this will usually be the ICD.*
- (b) *That there should be clear role definitions for the members of the OCT, with clear responsibilities documented.*
- (c) *That a clear Outbreak Control Plan should be agreed and implemented.*
24. *That senior management (Executive Director level) of the Trust should be fully engaged from an early stage in managing outbreaks either as full and active members of the OCT or as a separate support team to the OCT. Senior management support should include a senior communications manager who can ensure that staff, relatives and the public are timeously informed of the outbreak and are given appropriate public health messages.*
25. *That all OCT reports should provide sufficient details of key factors in the spread of infection to allow proper audit.*
26. *That recommendation 10.22(a) and 10.22(b) of the Pennington Group Report (page 37) be extended to cover all outbreaks:*
- (a) *"On completion of investigations, it should be the responsibility of the CPHM to provide SCIEH with a minimum data set (in the form of a standard proforma) "*
- (b) *"For large (or otherwise significant) outbreaks a full written report should be completed and consideration given to its publication. Copies of written reports should be forwarded to SCIEH."*
27. *That an expert group be set up to give clear Scottish guidance on the role of staff screening in outbreaks of infection, so that such guidance can be used by OCTs in the future.*
28. *That in the case of an outbreak where non-invasive screening of relevant staff is deemed appropriate, Trusts should place a duty on all such staff to comply.*
29. *That Trusts take measures to improve the quality of clinical information on laboratory request forms.*
30. *That a classification system for infection outbreaks/episodes be drawn up and used by all key players as "common currency" in deciding the actions and communications required in a given infection incident (A framework (Infection Control Risk Matrix) is set out in detail in Appendix E) and that clear policies are developed, using this system, which identify all the key individuals involved in communications about outbreaks of different severity.*
31. *That in any outbreak that is considered at any stage to be foodborne, the Scottish Executive is informed in addition to the Food Standards Agency.*

32. *That Trusts and Boards ensure that there are sufficient resources to appoint adequate levels of communication professionals, but that "Press Office to Press Office" communication is additional to, not a substitute for, professional communication.*
33. (a) *That the Chief Executive of a Trust or Health Board (depending on whether the outbreak is primarily in the hospital or community respectively) should assume the unambiguous responsibility for ensuring effective internal and external communications, including the media, appropriate Government Departments and Agencies.*
- (b) *That within the SEHD consideration should be given to the nomination of an issue manager as soon as a serious outbreak occurs and irrespective of the route through which notification has come. Clear guidelines should also be in place on which Division/Unit within the SEHD should be responsible for actions and briefing associated with an outbreak.*
34. *That resources are in place to ensure that each Trust has a designated and trained ICD, who will normally lead the Trust ICT. This will usually, but not invariably, be a consultant microbiologist who will have designated sessions and a clearly defined job description for this component of their work. In the case of Trusts without laboratory facilities (e.g., Primary Care Trusts) they should formalise arrangements with a suitably trained and appropriately resourced individual.*
35. *That resources are in place to ensure that each Trust has sufficient ICN establishment to:*
- (a) *have daily contact with wards or other health care premises;*
- (b) *visit each facility at least weekly;*
- (c) *provide advice to ward and departmental nursing staff on the nursing care of patients who are at risk of, or who have, infection;*
- (d) *be responsible for a systematic competency programme in infection control for all health care workers at their place of work (including medical, agency and bank staff);*
- (e) *undertake systematic hand washing audits, including audits involving night and weekend health care workers; and*
- (f) *provide an on-call service to advise on infection control matters on a 24-hour basis.*
36. *That there should be a lead Infection Control Nurse (ICN) in each Trust.*
37. *That infection control champions at ward level can complement, but not replace, the roles of the Infection Control Team. They should not be used as substitutes for ICNs but:*
- (a) *They should assist in the delivery of a comprehensive infection control service and be integral members of an enlarged Infection Control Team; and*

- (b) *Have clearly defined roles, dedicated time for infection control duties and be appropriately trained and supervised. The extra responsibilities and training should attract enhancement of salaries.*
38. *That each Health Board should have an appropriately constituted Standing Infection Control Team (ICT) which:*
- (a) *takes the lead in strategic aspects of infection control in their area;*
- (b) *formulates and agrees infection control policies;*
- (c) *co-ordinates the management of all outbreaks where the Major Outbreak Plan is invoked;*
- (d) *has a designated leader;*
- (e) *links effectively with Risk Management Committees and Clinical Governance Committees; and*
- (f) *provides assistance and advice to Trust ICTs when requested and/or when appropriate.*
39. *That large Trusts should have an appropriately constituted Standing Infection Control Team (ICT) which:*
- (a) *prevents and manages healthcare associated infection within their Trust;*
- (b) *implements agreed Board and Trust policies in infection control;*
- (c) *has a designated leader;*
- (d) *links effectively with Risk Management Committees and Clinical Governance Committees; and*
- (e) *liaises closely with, co-operates with, and provides membership for the Health Board ICT.*
40. *That CPHMs (CD/EH) should be trained in the management of HAI and play a more prominent role in HAI surveillance and hospital outbreak management. They should normally lead all infection outbreaks within their Board where the Board's Major Outbreak Plan is invoked.*
41. *That each Health Board holds regular (possibly every 2 years) simulated outbreak exercises, with adequate debriefing afterward, and that documentation of such exercises be provided to the Clinical Standards Board at the time of their inspections.*
42. (a) *That all relevant parts of the NHS operate to a consistent set of criteria that is linked to a risk management classification that describes infection outbreaks/episodes.*
- (b) *That the level of outbreak/episode risk category determines both the level of action(s) required and the level of communications.*
43. *That Trusts link infection control to risk management structures as a matter of urgency.*

44. *That at both local and Scottish Executive level more strenuous efforts are made to tap the potential of the media to improve the public understanding of infection control issues. This will require a more open relationship to be developed between the NHS and the media based on mutual trust. There should be presumption of early disclosure to the public and the media of outbreaks of infection.*
45. *That internal communications within and between the Scottish Executive and NHS organisations are improved and clarified so as to reflect the openness culture and this is emulated in communications with relevant agencies (e.g., The Food Standards Agency, Scottish Water, Scottish Environmental Protection Agency (SEPA)).*
46. *(a) That NHS Scotland should adopt a programme budgeting approach to Infection Control and that each Trust and each Board be required to provide details of the resources devoted to Infection Control.*

(b) That such details are supplied as part of the documentation provided to the Clinical Standards Board for Scotland at the time of individual Trust reviews.
47. *That the Scottish Executive should convene a Working Group to develop methods of tracking and calculating the costs of HAI and its control in Scotland.*