

Lessons learned from NHS QIS visits
to NHS Orkney, NHS Highland
and NHS Grampian following
Clostridium difficile incidents

Overview Report ~ June 2009

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1 Executive summary

NHS Quality Improvement Scotland (NHS QIS) has recently undertaken 'shared learning' visits to three NHS boards following *Clostridium difficile* (*C.difficile*) outbreaks. These visits have resulted in a number of detailed learning points for each of the NHS boards and for Scotland as a whole.

The visits identified five key themes, notably the need for a fresh look at how we ensure reliable and sustained frontline implementation of key healthcare associated infection (HAI) interventions within the HAI Task Force (HAITF) programme in a nationally co-ordinated way. There is also a need to establish clear and co-ordinated internal working systems which effectively link processes 'from ward to Board'. The other common themes relate to surveillance systems, antibiotic prescribing and collaborative working across Scotland.

This report suggests that the time is right to look at building on the successes of the national HAI strategy and the emergent work of the Scottish Patient Safety Programme (SPSP) by refocusing attention on implementation as an integral part of a national HAI improvement programme, using existing NHSScotland approaches to patient safety and quality improvement.

Alignment of the national HAI programme with the relevant elements of the SPSP programme is already a task set within the current 3-year HAITF plan, and offers a route to securing reliable and sustained implementation of key HAI guidance whilst augmenting the existing coherence and alignment of national programmes.

2 Background

Sharing information and learning from experience is a critical element of improving healthcare, and NHS QIS has the lead role in co-ordinating this across NHSScotland. We gather this information in a number of ways: in this instance, visits to NHS boards following *C.difficile* outbreaks.

The Scottish Government Health Directorates (SGHD) were informed of three outbreaks of *C.difficile* in Balfour Hospital, Kirkwall (NHS Orkney), Caithness General Hospital, Wick (NHS Highland), and Dr Gray's Hospital, Elgin (NHS Grampian) in the first 5 months of 2009. This resulted in NHS QIS being asked by SGHD to visit these NHS boards, using the outbreaks as a 'tracer', to provide assurance that:

- the incidents were managed appropriately
- the experience of these outbreaks resulted in appropriate learning and systems changes within these Boards, and
- lessons at a national level were learned and disseminated.

We were also asked to consider the arrangements in place for managing these outbreaks in the context of the overarching clinical governance frameworks.

The NHS QIS visits were explicitly set up to promote improvement and provide support. They were not inspections, and this is reflected in the reporting style we have used. The NHS Orkney visit was a clinical governance diagnostic review, and the visits to NHS Grampian and NHS Highland were predicated on 'improving through learning'.

This overview document aims to pull together the key themes identified during these visits, drawing on the issues raised by the Vale of Leven Hospital (NHS Greater Glasgow and Clyde) incident, and seeks to identify a way forward.

3 Common themes from the visits

A number of detailed individual learning points, both local and national, were identified and are listed within the individual reports for each NHS board. All three boards are now actively managing the issues identified during the visits with action plans being developed and implemented.

On all three visits, the NHS QIS teams saw hardworking, committed members of staff at all levels of the organisation. Many were clearly distressed at the consequences of the outbreaks, and staff were uniformly keen to learn and improve as a result of their experience, including seeking support from national organisations and other NHS boards.

The three hospitals concerned are all smaller institutions, distant from the larger centres in geographical and expert resource terms, not dissimilar to the situation at the Vale of Leven Hospital. Many of the issues raised are, however, likely to be applicable to all sites (including the large hospitals) across NHSScotland.

There were a number of key common themes which emerged, and which largely mesh with the lessons learned from the 2008 Vale of Leven *C.difficile* outbreak. Not all points apply equally to all NHS boards, but they are striking enough to highlight and to examine more closely.

Theme 1: Lack of implementation

A recurring and important theme is difficulty in ensuring effective or sustained implementation of national guidance on prevention and control of *C.difficile* in particular, or of HAI generally. Staff want and need reliable systems which make it easy to do the right thing every time for every patient.

We found widespread lack of clarity at all levels within the organisations – from ward to Board – around the status, uses and application of the large number of documents, tools and guidance produced at national level. For *C.difficile* alone, we have for example:

- the 2008 national Health Protection Scotland (HPS) Guidance on Prevention and Control of *C.difficile* Associated Disease
- the HPS *C.difficile* bundle/checklist
- the HPS *C.difficile* trigger tool
- the NHS QIS/HPS severe case investigation tool
- HPS protocols for mandatory national *C.difficile* surveillance
- SGHD *C.difficile* HEAT targets.

Overlying these are the more generic guidance, policies and procedures relating to local surveillance systems, hand hygiene, environmental cleaning, infection control and antibiotic prescribing.

We also found lack of clarity in use of case definitions, including for example what constitutes an outbreak, and whether a second *Clostridium difficile* associated disease (CDAD) episode in a single patient after 28 days is classified as a recurrence of disease (a clinical definition) or as a new case (the technical cut-off for national surveillance purposes).

It is clear that the activities described within these national resource documents are necessary and appropriate in preventing and controlling *C.difficile*. On that basis, the national HAITF approach in generating the existing policies, protocols and tools is entirely fit for purpose. However, issuing guidance is only part of improving practice, and subsequent implementation needs to be supported and monitored. Our visits highlighted confusion and lack of implementation around even some relatively basic components within the national approach. This appears to be due, at least in part, to the perceived large volume and complexity of the national documentation, and suggests we now need to focus on ensuring reliable and sustained implementation if we are to be successful in preventing and reducing infection. This is work which has already commenced in selected wards through the 5-year SPSP programme, but which has only recently actively involved the infection control teams.

Theme 2: Fragmented organisational approaches to HAI

There are several aspects to this, mostly relating to issues raised by Health Department Letter HDL(2005)8 - Infection Control: Organisational Issues (http://www.sehd.scot.nhs.uk/mels/HDL2005_08.pdf).

The visits found evidence of insufficient collaboration and engagement between the key structural HAI elements (the infection control manager, the infection control team, clinical governance and risk management) as laid out in HDL(2005)8.

In particular, the involvement of clinical governance structures in HAI issues at all three sites needs to be revisited. This extends to ensuring that key HAI related issues are effectively communicated to clinical governance and risk management structures, and also ensuring that non-executive directors are able to challenge on HAI – ‘What are our problems?’ ‘What are we doing about it?’ and ‘Have we the assurance that care continues to become safer?’.

It was also clear that there are some difficulties in demonstrating good functional engagement and communication between different levels of the organisation – ward staff, the infection control teams, clinical governance committees, and the Board. This can be exacerbated for remote sites when key resources are located within the larger centres, and physically distant from local staff.

Once again, the SPSP programme has shown a lead in establishing the importance of true collaborative multidisciplinary team working.

Theme 3: Surveillance

A key issue illustrated by the Vale of Leven outbreak is the essential role of effective local surveillance systems in generating early awareness of any unexpected excess of cases of infection with specific organisms.

The dictionary definition of 'surveillance' is '*the ongoing systematic collection and analysis of data and the provision of information which leads to action being taken to prevent and control a disease*' – in short, surveillance is basically 'information for action'. As an activity, local surveillance needs to be applied in a highly systematic, structured and well-managed fashion, with effective communication as well as engagement and support 'from ward to Board'.

We found shortcomings in local surveillance systems at every site, including understanding the uses of:

- simple triggers for action (eg three cases of *C.difficile* in any 4-week period for a ward or unit)
- routine run charts of case numbers by week
- alert organism surveillance
- statistical process control (SPC) charts, and
- national mandatory surveillance data.

Local surveillance is an important part of infection control, requiring effective local reporting procedures for collection and feedback of 'real time' data to local ward and managerial staff to drive improvement.

All three sites are essentially data rich, but did not have reliable systems to:

- prospectively identify increases in cases or clusters
- signal the need for investigation or control of an unexpected excess of cases at an early stage, or
- communicate critical information to the right people.

Surveillance is a specialist area, and there was wide recognition of the need to ensure the right skills were available for analysis and interpretation as well as the complex issues of setting local 'normal values' and constructing SPC charts.

Theme 4: Antibiotic prescribing

Widespread use of broad-spectrum antibiotics is one of the major risk factors for *C.difficile* infection. All three NHS boards had antimicrobial prescribing policies in place, but none demonstrated robust systems for monitoring combined with robust compliance management. This is a key function for antimicrobial management teams, clearly set out in the Scottish Management of Antimicrobial Resistance Action Plan 2008 (ScotMARAP) and Chief Executive Letter CEL30(2008).

In NHS Greater Glasgow and Clyde, a radical approach was taken to improve antimicrobial prescribing following the Vale of Leven incident; among their key learning points were the importance of a strong senior clinical lead in engaging with prescribing clinicians, and a proactive and visible antimicrobial management team.

Theme 5: Engagement and collaboration at national level

At several points it was clear that local policies, strategies and systems are being developed and implemented without reference to other NHS boards that already have successful systems. For example, NHS Orkney reported that it had only recently engaged with the Infection Control Managers Forum, and had found it an extremely useful source of road-tested materials from other NHS boards. The Scottish Microbiology Forum can fulfil a similar role for infection control doctors, and infection control nurses have Scottish branch meetings of the Infection Prevention Society. There is no joint forum, however, for the infection control teams and their key collaborators (eg medical and nursing directors, clinical governance teams, risk managers) to learn from each others' successes and failures.

Sharing and learning from experience within the NHS is challenging across all services and conditions, but the potential benefits of achieving this in relation to HAI are considerable. Again, SPSP is already demonstrating how this can be actioned in practical terms.

4 Implications of the findings

Since 2003, the national Scottish HAI programme, led by the HAITF, has produced a variety of outputs in terms of strategy and guidance. The HAITF has also funded critical initiatives such as establishing dedicated infection control managers and other key posts within NHS boards. This programme has always sought to engage with local as well as national expertise, and to involve frontline workers and the public. Few, if any, of its outputs can be judged as unnecessary in the context of the HAI landscape as found in 2002. Its strengths include a multimodal focus on issues across a very wide front. Its successes are demonstrated in decreasing national rates of *Staphylococcus aureus* bacteraemias, *CDAD* and some surgical site infections, and in the documented improvements in hand hygiene compliance and environmental cleaning performance. The stated emphasis within the current HAITF programme is on compliance, built substantially on driving progress through the Health Efficiency Access Treatment (HEAT) targets and other performance measures.

In these terms, the HAITF programme, to date, has of itself been fit for purpose and has demonstrated success.

The three visits carried out by NHS QIS, however, identify an area that is already well recognised within the SPSP – namely, that guidelines, education and exhortation are of themselves insufficient to ensure reliable and sustained implementation and improvement in practice. Many of the issues identified on the visits were seemingly simple and straightforward, but were lost within an environment of confusion born of multiple policies, guidance documents and toolkits. There also seemed to be a focus on whether specific documents were ‘mandatory’ or not, perhaps at the expense of a broader overview of how the improvement process would be best delivered. We found little evidence that antimicrobial prescribing was being firmly managed. In addition, there was a lack of coherence between the structural elements of the HAI response – infection control manager, infection control team, clinical governance and risk management – and between the layers of the organisation.

An important caveat is that these visits saw only the situation within three small hospitals in the context of outbreaks. We know and recognise that there are large areas within NHSScotland where the issues identified would not apply, but interactions with NHS boards and national organisations such as HPS and NHS Education for Scotland (NES) over many years suggests that these difficulties are not confined to a small minority.

We are now clear about some of the problems we face. The solution classically suggests a quality improvement process, firmly anchored in achieving sustained and effective implementation of a relatively small number of key interventions. This also needs to ensure coherence of approach across Scotland so that all NHS boards can ensure they have internal assurance that the right things are being done to prevent and control HAIs, using an

approach and language that is recognisable from other improvement programmes.

The NHS QIS Board has now established its strategic plan for taking forward improvement and implementation support for NHSScotland, and also hosts the SPSP programme. These initiatives relate directly to the issues raised in this overview report and the three NHS Board reports. Establishing a formal HAI improvement programme based on an alliance led by NHS QIS would help ensure national coherence and cross-support between HAI and other improvement/implementation programmes, and will build on the work already in progress under the SPSP initiative.

SPSP has now established a firm foundation within NHSScotland which supports the spread of rapid cycle change techniques in achieving reliable and sustained improvement across a number of clinical areas across the service. Some NHS staff are also familiar with the same improvement science techniques through their involvement with the SGHD improvement and support team initiatives such as the Long-Term Conditions Collaborative and the 18 weeks Referral to Treatment Time (RTT) Improvement Programme. This approach meshes with the SGHD strategic direction for NHSScotland generally in terms of quality improvement through collaboration and clinical excellence.

The NHS QIS Board has already agreed that an HAI improvement programme will be its first priority in establishing its new implementation and improvement strategy. NHS QIS will now undertake to submit a proposal to SGHD for a national HAI improvement programme which would signal a new phase in the national approach to ensuring maximum prevention and control of HAIs for 'every patient, every time'.

Appendix 1: Abbreviations

| | |
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| CDAD | <i>Clostridium difficile</i> associated disease |
| HAI | healthcare associated infection |
| HAITF | Healthcare Associated Infection Task Force |
| HEAT | Health Efficiency Access Treatment |
| HPS | Health Protection Scotland |
| NES | NHS Education for Scotland |
| NHS QIS | NHS Quality Improvement Scotland |
| SGHD | Scottish Government Health Directorates |
| SPC | statistical process control |
| SPSP | Scottish Patient Safety Programme |

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