



GIG
CYMRU
NHS
WALES

Bwrdd Iechyd Prifysgol
Bae Abertawe
Swansea Bay University
Health Board



| | | | |
|-------------------------------|--|--------------------|------------|
| Meeting Date | 09 March 2022 | Agenda Item | 3.1 |
| Report Title | Infection Prevention & Control Improvement Plan | | |
| Report Author | Delyth Davies, Head of Nursing, Infection Prevention & Control | | |
| Report Sponsor | Gareth Howells, Executive Director of Nursing & Patient Experience Richard Evans, Executive Medical Director | | |
| Presented by | Gareth Howells, Executive Director of Nursing & Patient Experience Richard Evans, Executive Medical Director | | |
| Freedom of Information | Open | | |
| Purpose of the Report | <p>Infection Prevention & Control position paper was presented to, and agreed at the Management Board on December 15th 2021.</p> <p>To address and improve the Health Board's unsatisfactory performance against key infections, the following paper and appendix presents the proposed Infection Prevention & Control Improvement Plan.</p> <p>Past improvement activities have not succeeded in achieving a sustained reduction in healthcare associated infections.</p> <p>Many of the strategies to reduce healthcare associated infections are not novel, but require a refresh and restart, strong leadership, and a commitment to act for improvement by all staff in the Health Board.</p> <p>The aim is to create a guiding coalition of responsible clinical leaders (not just nursing staff) at all levels in the organisation who see the intrinsic benefits and reduction in harm from infection.</p> <p>Notwithstanding the harm to the people we look after, the estimated cost to the health board in extended length of stay is around £4m pa.</p> <p>Provision of quality, safe care includes the management and prevention of healthcare associated infections. Infection prevention has to be viewed as core business for Service Groups, and a key responsibility of Service Group Directors and all Health Board staff.</p> | | |
| Key Issues | The preventable harm being caused to the people we support and look after | | |

| | | | | |
|---------------------------------|--|--------------------------|--------------------------|-------------------------------------|
| | <p>Failure to achieve SBUHB improvement targets, and reduction goals</p> <p>Failure to achieve Welsh Government infection reduction goals.</p> <p>To reduce the incidence of C. difficile infection, bloodstream infections, and tackle the development of antimicrobial resistance, the Health Board also has to be sighted on, and implement strategies to reduce other infections.</p> <p>The key priority areas for reducing bloodstream infections for example relate to Health Board staff adhering to proven IPC practices, and as focus on priority areas line management, and utilise the science of improvement in this as well as robust clinical leadership</p> <p>This will also need to include, a zero tolerance approach to IPC numbers and harm, robust measurement and monitoring processes, ownership and commitment, the rapid review of cases and never events.</p> <p>There will also need to be systematic adoption across organisation of evidenced based practice, communication , reward and recognition approaches to enable all our staff s to crack it given all our efforts before have failed and greater medical leadership in IP&C.</p> | | | |
| Specific Action Required | Information | Discussion | Assurance | Approval |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Recommendations | <p>Members are asked to:</p> <ul style="list-style-type: none"> • CONSIDER AND APPROVE THE INFECTION PREVENTION IMPROVEMENT PLAN, AND SPECIFICALLY: - MEET THE REQUIRED REDUCTION TRAJECTORIES FOR ALL TIER 1 INFECTIONS - ENSURE CLINICAL LEADERSHIP AT ALL LEVELS - UTILISE EVIDENCE, AND BEST PRACTICE - EMPLOY IMPROVEMENT METHODOLOGY AND MEASUREMENT - SUPPORT THE REVISED FOCUS OF IPC TEAM - ENSURE THAT ON ALL OCCASSIONS CLINCIAL LEADERS REVIEW IPC NEVER EVENTS AND ENSURE THE REQUIRED ACTIONS ARE INITIATED AND MAINTAINED TO PREVENT A RE-OCCURRENCE. - SUPPORT THE APPOINTMENT OF A SBUHB DIRECTOR OF INFECTION, PREVENTION AND CONTROL | | | |

Infection Prevention & Control Improvement Plan

1. INTRODUCTION

The SBUHB Infection Prevention & Control position paper was presented to, and agreed at the Management Board on December 15th 2021.

To address and improve the Health Board's unsatisfactory performance against key infections this paper and appendix presents the proposed Infection Prevention & Control Improvement Plan, which sets out key goals and actions for Service Groups to implement and lead in order to drive improvements.

2. BACKGROUND

Provision of Safe effective and efficient care requires the delivery of evidence based best practice on the management and prevention of healthcare associated infections. However, past improvement activities within the Health Board have not succeeded in achieving a sustained reduction in healthcare associated infections.

The 2017 European Point Prevalence of Survey of Healthcare Associated Infection identified that within ABMUHB, the organisation that preceded Swansea Bay University Health Board, bloodstream infections (bacteraemia) and gastrointestinal infections (including *C. difficile*) together account for 17% of all hospital acquired infections.

The more prevalent hospital acquired infections were reported as urinary tract infection (UTI), surgical site infection (SSI), and hospital-acquired pneumonia (HAP), which together accounted for almost 50% of all hospital acquired infections.

Treatment of these infections can lead to the development of *C. difficile* infection, and antimicrobial resistance. UTI, SSI and HAP can also be the primary source of secondary bloodstream infections. All of which harm our patients and service users should they be unfortunate enough to develop an infection.

The Infection Prevention and Control Improvement Plan proposes improvement strategies for Service Delivery Groups and the Health Board to implement. The plan uses a Goal, Method and Outcome format, with Quarter 1 – Quarter 4 time-frames. The Improvement Plan is detailed in Appendix (1). To improve our position Service Delivery Groups must focus the improvement activities described within this plan.

The Improvement Plan also presents the aspirational Welsh Government goals for infection reduction. As there have been increases in these infections over the previous two years within the Health Board, to achieve the level of reduction set by Welsh Government would require 50% reduction in *C. difficile*, 45% reduction in *Staph. aureus*, 15% reduction in *E. coli* and 25% reduction in *Klebsiella bacteraemia*.

This would be the requirement for the Health Board to achieve over the next 12 months.

3. GOVERNANCE AND RISK ISSUES

The population served by Swansea Bay University Health Board should expect to receive safe and high quality services. Yet the incidence of some key infections is higher within this Health Board than others in NHS Wales. Avoidable healthcare associated infection is an adverse event, with potentially life-changing and life-threatening consequences for patients.

Infection prevention must be viewed as core business for the Service Delivery Groups, and a key responsibility of Service Group Triumvirates and all Health Board staff.

4. FINANCIAL IMPLICATIONS

The financial implications of implementing the improvement plan has not been scoped in full (e.g. there are capital and revenue implications if the plan is approved and implemented). but the potential cost benefits are substantial

Notwithstanding the harm caused to our patients and service users, the overall financial impact of healthcare associated infections for the Health Board is significant., and success will also support a reduction in bed occupancy, reduced harm, reduced medication spend, increased patient satisfaction and a reduced mortality for the people we look after. The following provides an overview of these benefits.

Bed-days lost and costs associated with HCAI

A study was undertaken in NHS Scotland to estimate the costs associated with HCAI, including excess length of stay. This study, published in August 2021, used Scottish NHS reference costs to estimate unit costs for bed-days. This study is the first in the UK to report whole-hospital incidence associated infection for approximately 20 years.

Full details of methods and findings are published in *Bed-days and costs associated with the inpatient burden of healthcare-associated infection in the UK*, in the Journal of Hospital Infection 114 (2021) 43 – 50: <https://doi.org/10.1016/j.jhin.2020.12.027>

Excess length of stay and bed-days lost due to healthcare associated infection, by type.

Table 1: Average excess LOS and bed-days lost by HCAI type in Scotland

| HCAI | Average excess LOS per HCAI | Total annual bed-days lost to HCAI (NHS Scotland acute hospitals) (95% CI) |
|---------|-----------------------------|--|
| BSI | 11.4 (5.8–17.0) | 15,830 (7550–23,950) |
| GI | 6.0 (–0.7 to 12.7) | 7,540 (0–16,100) |
| LRI | 7.3 (1.8–12.7) | 7,600 (1300–13,540) |
| PN | 16.3 (7.5–25.5) | 10,270 (4170–16,380) |
| SSI | 9.8 (4.5–15.0) | 10,030 (4190–15,900) |
| UTI | –1.0 (–4.3 to 2.3) | 0 (0–4,180) |
| Other | 14.0 (–3.9 to 31.8) | 6,650 (0–16,360) |
| All HAI | 7.8 (5.7–9.9) | 58,010 (41,730–74,840) |

(Key: LOS, length of stay; HCAI, healthcare-associated infection; CI, confidence interval; BSI, bloodstream infection; GI, gastrointestinal infection; LRI, lower respiratory tract infection; PN, pneumonia; SSI, surgical site infection; UTI, urinary tract infection; 'Other' includes: SST, skin soft tissue; BJ, bone and joint; CV, cardiovascular; EENT, eye, ear, nose, and throat; and SI, systemic infection)

Table 2: Average excess LOS and bed-days lost by Tier 1 blood stream infection (BSI) in Swansea Bay UHB, April – November 2021

| | Tier 1 BSI in SBU Apr - Nov 2021 | Average excess LOS per HAI | Total bed-days lost to Tier 1 BSI Apr- Nov 21 |
|----------------------------|-------------------------------------|-------------------------------|---|
| <i>Staph. aureus</i> BSI | 97 | 11.4 | 1,105.80 |
| <i>E. coli</i> BSI | 211 | 11.4 | 2,405.40 |
| <i>Klebsiella spp.</i> BSI | 69 | 11.4 | 786.60 |
| <i>Ps. aeruginosa</i> BSI | 14 | 11.4 | 159.60 |
| All Tier 1 BSI | 391 | 11.4 | 4,457.40 |

Table 3: Average excess LOS and bed-days lost by all blood stream infection (BSI) in Swansea Bay UHB, by acute hospital site, April – November 2021

| Hospital | All BSI SBUHB | Average excess LOS per BSI | Total bed-days lost to all BSI Apr-Nov 21 |
|----------------------------|---------------|----------------------------|---|
| Morriston Hospital | 825 | 11.4 | 9,405.00 |
| Neath Port Talbot Hospital | 27 | 11.4 | 307.80 |
| Singleton Hospital | 240 | 11.4 | 2,736.00 |
| Total | 1,092 | 11.4 | 12,448.80 |

Table 4: Cost per case for each healthcare associated infection (HCAI) type and annual cost of HCAI in NHS Scotland

| HAI | Cost per case for each HAI type and overall (£) | | Annual cost in NHS Scotland (£ million) | |
|----------------|---|--------------------------------|---|--------------------------------|
| | Total cost per case (£) | Direct cost per case (£) | Total cost (£m) | Direct cost (£m) |
| BSI | 9,109 (3,511–28,210) | 5,917 (2,552–15,438) | 12.65 (4.82–38.96) | 8.22 (3.45–21.94) |
| GI | 4,794 (445–19,835) | 3,114 (192–10,401) | 6.02 (0.52–24.83) | 3.91 (0.24–14.11) |
| LRI | 5,833 (1,729–20,019) | 3,789 (1,234–11,684) | 6.07 (1.66–21.25) | 3.94 (1.17–11.84) |
| PN | 13,024 (4,808–45,061) | 8,460 (3,432–23,548) | 8.20 (2.99–25.88) | 5.33 (2.01–14.44) |
| SSI | 7,830 (2,987–24,993) | 5,086 (2,095–14,433) | 8.01 (2.95–27.02) | 5.20 (1.96–13.45) |
| UTI | 0 (0–2,109) | 0 (0–1,304) | 0 (0–3.63) | 0 (0–2.21) |
| Other | 11,186 (0–45,319) | 7,266 (0–26,523) | 5.31 (0.05–24.45) | 3.45 (0–12.77) |
| All HAI | 6,232 (2,733–18,181) | 4,048 (1,927–9,591) | 46.35 (19.43–128.81) | 30.11 (14.12–74.46) |

(Key: HCAI, healthcare-associated infection; CI, confidence interval; BSI, bloodstream infection; GI, gastrointestinal infection; LRI, lower respiratory tract infection; PN, pneumonia; SSI, surgical site infection; UTI, urinary tract infection; 'Other' includes: SST, skin soft tissue; BJ, bone and joint; CV, cardiovascular; EENT, eye, ear, nose, and throat; and SI, systemic infection).

Table 5: Cost per case for each healthcare associated bloodstream infection in SBUHB, April – November 2021

| HCAI | Cases (Apr-Nov 2021) | Cost per case for each HCAI type and overall (£) | | Total cost in SBUHB (Apr-Nov 2021) (£ million) | |
|---------------|----------------------------|---|-----------------------------|--|---------------------|
| | | Total cost per case (£) | Direct cost per case (£) | Total cost (£m) | Direct cost (£m) |
| Tier 1 BSI | 391 | 9,109 | 5,917 | 3.56 | 2.31 |
| All BSI | 1092 | 9,109 | 5,917 | 9.95 | 6.46 |

5. RECOMMENDATION

The Management Board is asked to:

Consider the Infection Prevention & Control Improvement Plan, approve its implementation by Service Deliver Groups, and Health Board Services (e.g. Estates and Facilities), and ensure the required actions are progressed.

| Governance and Assurance | | |
|--|--|-------------------------------------|
| Link to Enabling Objectives (please choose) | Supporting better health and wellbeing by actively promoting and empowering people to live well in resilient communities | |
| | Partnerships for Improving Health and Wellbeing | <input type="checkbox"/> |
| | Co-Production and Health Literacy | <input type="checkbox"/> |
| | Digitally Enabled Health and Wellbeing | <input type="checkbox"/> |
| | Deliver better care through excellent health and care services achieving the outcomes that matter most to people | |
| | Best Value Outcomes and High Quality Care | <input checked="" type="checkbox"/> |
| | Partnerships for Care | <input type="checkbox"/> |
| | Excellent Staff | <input type="checkbox"/> |
| | Digitally Enabled Care | <input type="checkbox"/> |
| | Outstanding Research, Innovation, Education and Learning | <input type="checkbox"/> |
| Health and Care Standards | | |
| (please choose) | Staying Healthy | <input type="checkbox"/> |
| | Safe Care | <input checked="" type="checkbox"/> |
| | Effective Care | <input type="checkbox"/> |
| | Dignified Care | <input type="checkbox"/> |
| | Timely Care | <input type="checkbox"/> |
| | Individual Care | <input type="checkbox"/> |
| | Staff and Resources | <input type="checkbox"/> |
| Quality, Safety and Patient Experience | | |
| Effective infection prevention and control needs to be everybody's business and must be part of everyday healthcare practice and be based on the best available evidence so that people are protected from preventable healthcare associated infections. | | |
| Financial Implications | | |
| Examples of the financial benefits are outlined within the paper. A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of <i>Clostridioides difficile</i> infection is approximately £10,000 . The estimated cost to the NHS of treating an individual cost of MRSA bacteraemia is £7,000 (the cost of MSSA bacteraemia could be less due to the availability of a wider choice of antibiotics). In an NHS Improvement indicative tool, the estimated cost of an <i>E. coli</i> bacteraemia is between £1,100 and £1,400 , depending on whether the <i>E. coli</i> is antimicrobial resistant. Estimated costs related to healthcare associated infections, from 01 April 2021 to the end of February 2022 is as follows: <i>C. difficile</i> - £1,780,000; <i>Staph. aureus</i> bacteraemia - £868,000; <i>E. coli</i> bacteraemia - £308,600; therefore, a total cost of £2,956,600 . | | |
| Legal Implications (including equality and diversity assessment) | | |
| Potential litigation in relation to avoidable healthcare associated infection. | | |
| Staffing Implications | | |
| Investment in specialist IPC staff is key to the success of the work. One key post is that of a Health Board Director of Infection, Prevention and Control (DIPC) – who will have executive authority and responsibility for ensuring that strategies are developed and implemented to prevent avoidable healthcare associated infections (HCAIs) at all levels in the organisation. This post will be at a consultant grade, circ. £100k | | |

| | |
|---|---|
| Long Term Implications (including the impact of the Well-being of Future Generations (Wales) Act 2015) | |
| A healthier Wales: preventing infections | |
| Report History | |
| Appendices | Appendix 1 – Infection Prevention & Control Improvement Plan |