Meeting Date	**15 December 2020**	**Agenda Item**	**2.5**
Report Title	**Responding to COVID-19 – Nosocomial Transmission**		
Report Author	Dorothy Edwards, Deputy Director of Transformation Lisa Hinton, Assistant Director – Infection Prevention & Control		
Report Sponsor	Dr Richard Evans, Executive Medical Director		
Presented by	Dr Richard Evans, Executive Medical Director Christine Williams, Executive Director of Nursing and Patient Experience		
Freedom of Information	Open		
Purpose of the Report	The purpose of this report is to provide an update on in-hospital (nosocomial) transmission of COVID-19 within Swansea Bay University Health Board during the Coronavirus Pandemic.		
Key Issues	As with many hospitals, nosocomial transmission has occurred within Swansea Bay University Health Board. There have been numerous outbreaks a number of sites during the last few months. This has involved transmission between staff and staff, staff and patients, patients and staff, and between patients. The absence of symptoms in infected individuals (especially staff) appears to be a significant factor in inadvertently introducing infection into clinical areas. The current position appears to be stabilising in a number of areas. Given the prevalence of COVID in the community, as well as the high rate of infectivity of a virus transmitted through aerosols and respiratory droplets, it is extremely challenging to prevent spread in hospital settings. The Health Board's experience is similar to that of other Health Boards. A Nosocomial Silver group has established with two principal functions: 1. To ensure there are processes in place to **prevent** nosocomial spread; and		

	2. To ensure there are effective processes to **respond** to instances of nosocomial infection to prevent further transmission A range of actions have been put in place to prevent nosocomial transmission and to ensure an effective response framework. Daily reports are provided to Welsh Government. A baseline assessment against Welsh Government 16-point framework has been undertaken and further actions identified as a result. Key learning has been identified and shared across the Health Board. A robust process is now in place to investigate possible cases of nosocomial transmission that have led to patient death. A new policy of testing asymptomatic front-line health workers will be rolled out in mid-December.
Recommendations	• **Note** the current position on nosocomial transmission within Swansea Bay • **Note** the establishment of the Nosocomial Silver Group which is overseeing a range of action to prevent transmission and to respond to the current position • **Note** the work underway to review harm and the alignment with internal governance mechanisms.

Specific Action Required ***(please choose one only)***	**Information**	**Discussion**	**Assurance**	**Approval**
	☐	☒	☒	☐

NOSOCOMIAL TRANSMISSION WITHIN SWANSEA BAY UNIVERSITY HEALTH BOARD

1. INTRODUCTION

The purpose of this report is to provide Quality and Safety Committee with an update on nosocomial transmission with SBU Health Board during the coronavirus pandemic.

2. BACKGROUND

Nosocomial infections are infections that develop during a hospital stay. There have been numerous outbreaks of COVID-19 that have occurred in hospital settings since the start of the pandemic. Nosocomial transmission is not unique to Swansea Bay and all Health Boards in Wales have had cases of transmission during the second wave.

It is very difficult to prevent spread in hospitals given the levels of transmission in the community. Community transmission rates in Swansea Bay are now amongst the highest in Wales and whilst the firebreak is considered to have had an impact on slowing spread, incidence (new cases) and positivity rates are continuing to rise.

Outbreaks within hospital settings have been managed in line with the Board's Policy for Infection Outbreak/Incident Management Framework. These have had a significant impact on patient flow and have led to challenging in being able to staff core and surge capacity. However, there are encouraging signs that the position is stabilising in some areas, and whilst the number of areas is significant, in some cases, the outbreaks relate to a small number of staff and patients, demonstrating if action is taken quickly the outbreak can be contained.

An Executive led Outbreak Control Team (OCT) meets multiple times a week to review the position, and regular reports are submitted to Welsh Government.

The Board has recognised the risk of nosocomial transmission within its overarching Gold risk log and mitigating actions are in place. A nosocomial framework has been developed, and more recently, a baseline assessment against good practice issued by Welsh Government has been undertaken. A number of new actions are underway including a further focus on communication with staff based on sharing best practice to influence behavioral change. One of the key challenges is the physical environment which hampers the ability to effectively segregate patients due to a lack of cubicles and to maintain appropriate bed spacing. The lack of sufficiently large common areas, rest rooms and changing facilities is also a factor.

3. CURRENT POSITION

An outbreak is confirmed when there are two or more test-confirmed or clinically suspected cases of COVID-19 among individuals (for example patients, health care workers, other hospital staff and regular visitors, for example volunteers and chaplains) associated with a specific setting (for example bay, ward or shared space), where at least one case (if a patient) has been identified as having illness onset after 8 days of admission to hospital.

At the time of writing, there are 30 different outbreak areas within the Board that have occurred during the second wave, and 15 of these have resulted in ward closures. To date, there have been 421 positive patients who are identified as 'probable' hospital acquired infection with 285 staff impacted. 69 patient deaths are being investigated and a process has been agreed to review all deaths that may have been as a result of hospital acquired infections.

The most significant outbreak in the second wave of the pandemic has been in the Cardiac Centre and resulted in the postponement of planned cardiac procedures for a number of weeks (since re-started), however there are ongoing outbreaks across all hospital sites including in Mental Health services.

A daily report is required by Welsh Government that includes the following information:

- Location of the outbreak (hospital/ward)
- Number of new outbreaks and staff and patients affected
- Cumulative position
- Outbreak Trajectory (whether stable, improving or worsening)
- New deaths and cumulative deaths
- Actions underway.

Reports are collated by Infection Control and Prevention Team in conjunction with site teams. On 3rd December, it was noted that out of the 6 areas captured (individual hospital sites plus Mental Health and Learning Disabilities), 5 areas were in a stable position and Mental Health was improving.

Key Learning

Much of the learning of in-hospital transmission from both waves relates to human factors and the systems and processes that we have in place to manage patient flow. Key learning is summarised below:

- Strict compliance with PPE requirements. Some outbreak reviews have identified non-compliance with PPE as a factor in nosocomial transmission
- Patient movement should be kept to an absolute minimum. Patients may be incubating COVID or asymptomatic with COVID. Movement increases the risk of spreading COVID around the hospital. Movement is kept to a minimum but given the challenges on individual sites, this has been challenging to maintain

- Patients should be tested on admission. Some patients with COVID will be asymptomatic or minimally symptomatic and so all admissions need to be screened.
- Patients with any symptoms of possible COVID that develop following admission should be re-tested. Even if a patient tests negative on admission, they should be retested if they have any signs of COVID.
- There have been instances where staff with mild symptoms are continuing to attend work rather than self-isolating. This is challenging as symptoms can be confused with other conditions, however the message to staff needs to be clear and to advice that symptoms should be discussed with Occupational Health.
- If a patient on the ward develops COVID, then all patients in the same bay should be swabbed. Consideration should be given to swabbing the whole ward. Patient movement should be stopped, and the situation discussed with IP&C.
- Good infection control practices are not always able to be implemented effectively. If an outbreak is detected on a ward, then the ward should be closed and all patient movement to and from the ward must be stopped. Recently discharged patients (within the last 7 days) should be traced and managed (put in isolation or brought back to the outbreak ward). IP&C should be called, and an incident meeting set up.
- Patients should be advised to keep to their own bed area, not mix with other patients, wear masks as much as possible and decontaminate their hands frequently. At this time of high prevalence, all staff and patients must be considered as possibly infectious.
- Social Distancing rules must be reiterated and adhered to.

4. GOVERNANCE

The Nosocomial Transmission Silver Group was established in October 2020 and is jointly chaired by the Medical Director and Director of Nursing and Patient Experience. The Group has the following objectives:

- To oversee the implementation of Infection Prevention and Control guidance within SBUHB, considering national guidance issued by Welsh Government and/or Public Health Wales. This will include identifying recommendations to GOLD on local interpretation of PPE guidance
- To oversee the implementation of pathways that minimise the spread of COVID within hospital settings including the appropriate segregation of patients who have a positive or negative test for COVID-19 and those who are suspected and awaiting a test result
- To oversee the development and implementation of workforce plans/policies that minimise the risk of transmission between clinical areas
- To ensure the development of a robust process for reviewing incidences of confirmed or suspected nosocomial transmission; identifying and sharing lessons learned through an agreed all Wales mechanism
- To ensure that national guidance in respect of discharges to other care settings (such as care homes) is implemented within SBUHB
- To provide rapid, expert advice on cases of nosocomial transmission and actions required to limit harm to supplement ongoing Incident Management

- To identify themes arising from case reviews of nosocomial transmission and apply learning to all settings
- To provide advice on wider actions that may be required to limit the transmission of COVID which could include, but are not limited to, hospital visiting and the management of footfall on hospital sites
- To oversee outstanding actions from the physical distancing cell and absorb work into the ongoing work programme
- To ensure that internal and external reporting of nosocomial transmission is accurate and timely
- To advise GOLD on key decisions, risks and policies required to minimise the transmission of COVID-19 within healthcare settings, including the requirement for urgent action

5. ACTIONS

Nosocomial Silver is meeting weekly to identify themes and lessons from the individual outbreaks and actions.

Welsh Government released a 16-point plan in November which identifies actions to limit, minimise and mitigate the risks associated with transmission in a healthcare setting. A baseline assessment has been undertaken to ensure the health board has met each of the points with the appropriate action. This is attached at Appendix 1.

One of the early actions was the development of a comprehensive framework (in advance of the 16-point plan) focusing on the prevention of nosocomial infection and the response to outbreaks when they occur.

Key actions taken include:

- Reviewing pathways and processes in place to separate elective (non-COVID) from non-elective; and cohort areas for known COVID-positive patients, and another for those awaiting a test result. A Standard Operating Procedure has also been developed to manage intra-hospital flows
- Communication campaigns focussing on behavioural change to encourage compliance with the basic requirements – good hand hygiene, physical distancing and PPE wearing; continual focus on messages via the Chief Executive Briefing
- Development of a safety audit tool for use by site teams to develop a consistent approach to review compliance with prevention measures; this will be in use twice weekly from early December and reviewed at Service Group level on a weekly basis.
- Commissioning of a bespoke digital tool to support robust testing on admission. Compliance with testing on admission has improved since the introduction of the tool which facilities site teams having rapid patient level data and an overview of testing compliance
- Installation of mitigating measures following a review of physical bed spacing within hospital settings which has resulted in PVC curtains being installed widely across the Health Board estate where minimum bed spacing cannot be maintained

- Identify and share the learning from a pilot scheme in Neath Port Talbot with a checklist that asks staff to consider if they have COVID symptoms at the start of their shift
- Reviewing PPE compliance and considering PPE policy issues as they arise
- Specific action to address outbreak issues on individual sites – for example, in managing the use of rest facilities and break-out areas to support physical distancing.
- A robust protocol for managing elective patients via a 'green' pathway has been in place which includes testing on admission as well as a range of other areas. The green pathway at all hospital sites has been maintained despite outbreaks in other areas of hospitals.
- Developing a process to review patient deaths in which nosocomial transmission may have been a factor. Panels have been established to begin reviewing cases; initially starting with those that have occurred in wave 1 and cases will be investigated in line with the Putting Thing Right framework. A flowchart has been developed and a SOP is being finalised. A dashboard has also been developed to ensure effective tracking and case management.

National Policy

On 3rd December, Welsh Government confirmed the establishment of a new testing approach using lateral flow devices that will be rolled out to front-line staff to support identification of asymptomatic staff. Further detail on the Standard Operating Procedure is awaited, but it is likely that the roll out will begin on 14th December.

Further guidance is also expected on new national cleaning standards and the Board has submitted a return to Welsh Government with an assessment of the costs and implications against new standards.

The national Nosocomial Transmission Group have indicated that further guidance will be released in accordance with key learning.

6. RECOMMENDATIONS

Quality and Safety Committee are asked to:

- Note the current position on nosocomial transmission within Swansea Bay
- Note the establishment of the Nosocomial Silver Group which is overseeing a range of action to prevent transmission and to respond to the current position
- Note the work underway to review harm and the alignment with internal governance mechanisms.

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	☐
	Co-Production and Health Literacy	☐
	Digitally Enabled Health and Wellbeing	☐

	Deliver better care through excellent health and care services achieving the outcomes that matter most to people	
	Best Value Outcomes and High-Quality Care	☒
	Partnerships for Care	☒
	Excellent Staff	☒
	Digitally Enabled Care	☒
	Outstanding Research, Innovation, Education and Learning	☒
Health and Care Standards		
(please choose)	Staying Healthy	☒
	Safe Care	☒
	Effective Care	☒
	Dignified Care	☒
	Timely Care	☒
	Individual Care	☒
	Staff and Resources	☒

Quality, Safety and Patient Experience
Nosocomial transmission will cause both direct and indirect harm. Direct harm can be measured in terms of physical harm and emotional stress and has led to patient deaths, as well as the cancellation of treatment. Indirect harm will be as a result of the management of outbreaks leading to the loss of capacity and impact on patient flow and potential consequences for the system. There is a significant impact on patient experience.
Financial Implications
There are likely to be costs associated with the Putting Things Right Redress Process. Resourcing of the investigation and review of nosocomial deaths is also under consideration but not yet costed. The cost of staffing additional capacity during outbreak situations will be difficult to quantify and assess separately.
Legal Implications (including equality and diversity assessment)
Failure to prevent nosocomial cases and to respond appropriately when they occur could result in potential legal challenge.
Staffing Implications
Outbreaks can have a significant impact on staffing leading to added staffing requirements and/or impact on the ability to manage staffing levels. There will be an additional staffing requirement attributed to the review of possible nosocomial deaths.
Long Term Implications (including the impact of the Well-being of Future Generations (Wales) Act 2015)
No specific implications identified

Report History	
Appendices	Appendix One – Baseline Assessment against 16-point action plan

Appendix One

Swansea Bay University Health Board 16-Point Plan Baseline Assessment

COVID-19: 16 Point Plan to limit, minimise and mitigate the risks associated with transmission in a healthcare setting

1.	All unnecessary patient movements within the hospital cease forthwith. Patients at any time could be incubating disease, even if they have tested negative. Avoiding movement within the hospital will reduce the risk of transmission.
Patients are managed according to delivery unit pathways and cohorted according to their COVID status. All patient movements are risk assessed and are necessary.	

2.	All unnecessary staff movements within the hospital cease forthwith. Staff at any time could be incubating disease, even if they have tested negative. Avoiding movement within the hospital will reduce the risk of transmission. Consideration should be given to allocating staff solely to RAG areas. In addition, greater vigilance of control measures during breaks or restricting breaks to the allocated areas would assist this
Staff movements are kept to a minimum and any staff cases are included within outbreaks as appropriate and managed via occupational health. Block booking of bank and agency in place where available.	

3.	Patients continue to be screened i.e. sampled and tested for COVID-19 on admission (or prior to admission for elective procedures).
All elective patients screened and isolated before admission according to current guidelines. All patients screened on admission, Dashboard in place to monitor screening. Patients screened if part of a nosocomial transmission event.	

4.	Assume all patients are COVID-19 positive on admission until a negative result is known.
Patients streamed within categories and either isolated or cohorted accordingly. Pathways in place for all delivery units to support this. All staff wear PPE in line with Public Health Wales guidance. This continues despite negative screen as patients can become positive despite a negative screen.	

5.	Patients are kept in the admission or assessment area until the result of their test is known and then moved in accordance with the RAG system and kept separate.
Patient pathway documents in place for all delivery units. Patients moved according to risk and in accordance with their status. Patient flags applied to the electronic patient management system.	

6.	Wards are clearly marked with their RAG status at ward entry point. As wards change status this will become particularly important to avoid confusion.
Not in place for all areas. **Action:** Project manager for transformation to work with communications to create notices for Service Delivery Unit's to use on all wards and bay entry points. Clarification of the colour codes to be used across all Health Board sites and the notes required outside wards to be defined by 04-Dec-20. Suggested RAG status for Bays would be more appropriate – Posters will be created to be used by Service Delivery Unit's to display in required areas.	

7.	Ensure amber "contact" category is completely ascertained i.e. including those on the ward awaiting screening who were on the ward at the same time as someone whose screen proved positive. 8
Assessment of patient undertaken on admission. Patient pathway documents in place for all delivery units. Patients placed in accordance with their status including contacts. Patient flags applied to the electronic patient management system. Patients monitored for symptoms and screened in accordance with Public Health Wales guidance.	
8.	Amber patients should be separated within Amber wards, by the cohort of exposure to their index case. The risk of transmission differs in different cohorts of exposure, as we have evidence that some cases are more infectious than others i.e. "super spreaders". As a test does not distinguish this risk, the mitigation measure is to cohort each group of exposed patients and separate them from other groups of exposed patients. This can be done by cohorting in separate bays, for example.
Assessment of patient undertaken on admission. Patient pathway documents in place for all delivery units. Patients placed in bays and wards in accordance with their status. Patient flags applied to the electronic patient management system. Patients monitored for symptoms and screened in accordance with Public Health Wales guidance.	

9.	Particular care should be given to moving patients within the hospital to limit the risk of transmission to staff and other patients

Patient movements are risk assessed and only undertaken where necessary and appropriate in accordance with pathways and category of patient. Appropriate PPE, cleaning and social distancing measures in place.

10.	As well as preventing patient movement around the hospital transfers to other hospitals of positive patients, or those awaiting test results should not occur without discussion with the receiving medical and nursing team on a case-by-case basis
Signal patient movement system in place for inter hospital transfers which include flags regarding COVID status. Each case is discussed with the receiving ward/hospital ensuring COVID status is known.	
11.	The planned installation of barriers/roller screens should be prioritised to the admission and assessment units
Social distancing and bed spacing risk assessments undertaken within each ward and admission/assessment areas. PVC curtains or screens in place for where required as per risk assessments.	

12.	The primary control measures of social distancing, use of hand sanitisers and or handwashing or appropriate PPE if this cannot be maintained for care should be reinforced with all patients and staff. These are effective control measures. There is evidence that when these measures are relaxed transmission occurs e.g. for social contact between staff, during rest and lunch breaks. This further risks business continuity as staff contacts of cases are required to self-isolate.
Communications reinforcing the key messages on a regular basis via electronic screens in hospitals, regular staff briefings, staff intranet, social medial. Use of patient story to has been shared across NHS Wales. Briefings highlight known risk factors and respond to learning from outbreaks. Communications also included at each outbreak control group and the Health Board wide outbreak control group with key learning shared Health Board wide.	

13.	COVID-19 test results of all staff and patients are shared with the Infection Prevention and Control team (IP&C) to ensure appropriate isolation, contact tracing and control measures. COVID-19 is a notifiable disease and subject to the Public Health (Control of Diseases) Act, 2004 and the Public Health (Control of Diseases)(Wales) Regulations, 2010. This information is critical to the effective management and control of COVID19 within the hospital. The IP&C team are subject to the proper control of this information as required by the General Data Protection Regulations, 2016.
IPC team informed of all COVID positive patients via ICNet and occupational health share staff related positive cases with IPC team. IPC team and occupational health have shared responsibility for staff cases. All staff informed of positive cases and track and trace in place	

for contacts. All patients tracked and managed according to current Public Health wales guidance with flags added to the electronic patient movement system. Appropriate notification through the 'no surprises' or 'significant incident' processes. Daily reports submitted to Welsh Government relating to nosocomial transmissions.
14. A risk assessment of COVID-19 positive patients or contacts of cases should be undertaken prior to discharge. This should include the risk of transmission to vulnerable household members and the ability of the patient to self-isolate within that household.
All patients Covid status risk assessed and discharges in accordance with current Public Health guidance. All patients informed of Covid status on discharge and advice given according to current Public Health guidance.

15. Escalation plans for a field hospital should consider, when demand is required, difficulties with effective isolation and restriction of patient movements. It would be advisable to start to expand capacity (e.g. via field hospital methods) sooner rather than later, to enable safe patient management and also prepare for the likely increase in COVID-19 hospital admissions.
IPC team and microbiology involved in planning for the field hospital. The first phase will be to receive the COVID recovered patients into the field hospital from a COVID perspective this would reduce risk. A plan is underway to ensure any escalation from this to additional categories of patients is assessed on risk and mitigating steps are introduced to reduce risk where possible.

16. Initiate staff testing, prioritising staff on the wards/units/departments affected and peripatetic staff who have been on the affected wards. Consider the need for whole staff testing on the site.
Staff testing undertaken according to Public Health Wales guidance when linked to nosocomial transmission includes peripatetic staff. This is on a risk basis and staff are screened accordingly in conjunction with occupational advice.

Lisa Hinton, Assistant Director of Nursing IPC, SBUHB, 20.11.20