

	Goal	Method	Outcome	Lead	Timescale	Update
1.	Mitral Valve Outcomes					
1.1	MV Surgery to be undertaken by Specialist MV Surgeons only	All MV referrals into the Cardiac service to be reviewed and under the care of Specialist MV surgeons only	<ul> <li>Maintain Patient safety</li> <li>All patients listed for MV surgery under the care of an MV Specialist</li> </ul>	Clinical Director, Cardiothoracic Surgery	Completed	Implemented w/ immediate effect; only 2x surgeons performing MV surgery
		Establish complex surgery     MDT to assess suitability     for MV repair vs MV     replacement	Combined MDT decision- making for the most appropriate surgery	Clinical Director, Cardiothoracic Surgery	Completed	Mitral Valve MDT established to make surgical decisions on surgery (incl. MV repair vs. MV replacement)
			Increase the proportion of MV repair to replacement; target upper quartile peer	Clinical Director, Cardiothoracic Surgery	01.01.22	A separate High Risk Cardiac Surgical MDT has also been established to discuss all complex, or, high risk cardiac surgical cases
		Letter sent to patients informing them of changes and OP appointments made to discuss moving Consultants		Deputy Group Medical Director, Morriston Hospital	Completed	7 patients identified; 3 agreed to move and have booked OPA; remainder have been discussed at MDT w/ plans in place



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1.2	Case note review of all patients who died following MV surgery	<ul> <li>Case note review to be undertaken to establish:</li> <li>Correct coding</li> <li>Risk score</li> <li>Pre-Operative risk</li> <li>Post-Operative risk</li> <li>Cause of death</li> </ul>	Full clinical review to identify appropriateness for surgery and any contributing factors	Group Medical Director, Morriston Hospital Service Delivery Unit	1.10.21	Review of 19 cases: Completed. Report to Exec MD by 11.10.21
1.3	Independent external expert to review case notes in conjunction w/ operating surgeon	Commission case note review by independent expert	Independent expert to provide opinion on appropriateness for surgery, risk, outcome and factors contributing to death	Executive Medical Director	February 2022	
1.4	Review Consultant specific outcomes and discussion to be undertaken with individuals	Full team outcome review     to be undertaken and     variation to be discussed     with individuals	<ul> <li>A reduction of variation within Cardiac Surgery</li> <li>Clinicians' performance meets standards and ensure best outcomes for patients</li> </ul>	Group Medical Director, Morriston Hospital  Executive Medical Director	01.11 21	Scheduled to take place in October (along with review of 1.2 with cardiac surgical group)



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2.	Quality					
2.1	Return to Theatre (bleeding)	i) Clinical case note review undertaken for each patient to establish:  Risk score Pre-Operative risk Post-Operative risk Reason for return	Action plan to address key improvement metric areas	Group Medical Director, Morriston Hospital	31.10.21	
		<ul> <li>Review findings from case note review at departmental Morbidity and Mortality meeting</li> </ul>	Shared understanding among clinicians of need for improvement	Group Medical Director , Morriston Hospital	26.11.21	
		ii) Action plan to be delivered to address areas required for improvement	Target reduction of return to theatre to upper quartile in peer group of 31 units	Clinical Director, Cardiothoracic Surgery	13.10.21	Intraoperative checklist has been developed (attached) and will be completed for each patient from w/c 16/08; post implementation this will be continually audited and discussed via M&M meetings on a monthly basis in the first instance moving to quarterly (assurance permitting)



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						Intraoperative checklist for reduction
2.2	Deep Sternal Wound Infection  i) Confirm definitional criteria for NICOR and GIRFT datasets	<ul> <li>Assurance required that cases are being coded correctly on PAT system. All surgeons to complete and sign off operation notes</li> </ul>	A unified approach and clinical consensus/educational requirements to be addressed	Clinical Director, Cardiothoracic Surgery	Completed	Group Medical Director for Morriston has discussed with GIRFT; assurance provided that the classification of DSWI is now correct and will accurately reflect return to theatre DSWI moving forward
		Case note review of all patients in GRIFT/NICOR dataset reported as deep sternal wound infection to ensure they meet the established definition	Establish other potential causative factors via case note review, to include: time on bypass, breakdown by Consultant and procedure type	Group Medical Director , Morriston Hospital	Completed	For the three years of the audit, there were 41 patients who were categorised as having a sternal wound infection, 16 (39%) of whom were diabetic  Further analysis of these patients indicates that for the period 2017 to 2020, there were 1890 operations.  According to NICOR, 9 patients had a deep sternal wound infection (DSWI) that required



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					return to theatre. Thus, the reported DSWI rate is recorded as 9/1890 = 0.48%
					According to GIRFT criteria, 41 patients had a "deep sternal wound infection" i.e. 2.17% [2.12% was stated in the report]. However, this captured <u>all</u> patients who had:
					i) a superficial wound infection treated with a Vac pump ii) a deep sternal wound infection treated with a Vac pump but without surgical debridement iii) a deep sternal wound infection who required surgical debridement (i.e. the NICOR
					definition) The 41 patients have been reviewed by the senior nursing team (LI) and the respective numbers (%) in these categories are:



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					i) 29 (1.53%) ii) 3 (0.16%) iii) 9 (0.48%)  So, combining categories ii) and iii) [for the purposes of the GIRFT analysis], the total deep sternal wound infection was 12 of 1890 i.e. 0.63% [not 2.12% as reported by GIRFT]. The benchmark for England and Wales provided by GIRFT for this period was 0.65%
i) Develop Action plan to deliver DSWI outcomes comparable with upper quartile peer	Target reduction in deep sternal wound infection in line w/ best practice.	<ul> <li>Achieve best practice wound infection rate:</li> <li>All DSWI &lt;1% (Morriston 1.86% 2017/18 to 2.5% 2018/19)</li> <li>DSWI RtoT &lt;0.25% (Morriston Range 0.31% 2017/18 to 0.18% 2019/20)</li> <li>Review of intra operative</li> </ul>	Clinical Director, Cardiothoracic Surgery	31.10.21	Society of Cardiothoracic Surgeons (SCTS) is working towards consistent definitions for all morbidity, the national audit lead meeting in September 2021 will be by attended by the Clinical Director for Cardiothoracic Surgery  Currently the Morriston Cardiac Centre already
	peer	peer	. (Morriston Range 0.31% 2017/18 to 0.18% 2019/20)	(Morriston Range 0.31% 2017/18 to 0.18% 2019/20)  • Review of intra operative Lead	(Morriston Range 0.31% 2017/18 to 0.18% 2019/20)  • Review of intra operative Lead



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	Benchmark against <i>Guy's</i> and St Thomas' (current infection rate: 0.27%)	undertaken and LocSSIPS updated  • Audit current practice against infection control and antibiotic guidelines during August 21  • Review options to reduce infection rate via using dressing laced with gentamicin	Cardiothoracic Surgery  Lead Intensivist, Cardiothoracic Surgery  Consultant, Cardiothoracic Surgery	Completed 31.10.21	<ul> <li>WHO checklist in theatre</li> <li>uniform draping technique in theatre</li> <li>use of chlorhexidene skin preparation</li> <li>To be picked up in benchmarking discussions with Guy's and St Thomas'</li> <li>Immediate actions taken to provide assurance on safety are:</li> <li>Consultant only operating</li> <li>audit IPC compliance in Aug/Sept along with compliance w/ antibiotic guidelines</li> <li>reinforce process and guidelines for pre op preparation of the patient and ward based pre op checks</li> </ul>



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						Plan to implement review of individual cases of deep sternal wound infection (DSWI) via multidisciplinary team, led by a consultant microbiologist
2.3	Post-operative Neurological Deficit	Internal case note review to be undertaken for each patient to establish:         O Risk score         O Pre-Operative risk         O Intraoperative risk	Understanding of where improvements can be made	Group Medical Director, Morriston HospitalClinical Director, Cardiothoracic Surgery	01.11.21	Data extracted and shared with UMD w/c 02/08/2021  Immediate actions taken to provide assurance on safety are:
		Action plan to be developed in response to findings	Set goals for improvement upper quartile peer	Clinical Director, Cardiothoracic Surgery	23.11.21	<ul> <li>Consultant only operating</li> <li>Preop: patients at risk (pre-existing premorbid conditions) identified by surgeon and appropriate risk quoted + documented</li> </ul>
		Delivery of action plan	Deliver action plan for improvement	Clinical Director, Cardiothoracic Surgery	30.11.21	<ul> <li>Intra-op: Full invasive monitoring, appropriate support of perfusion pressures on CPB and afterwards. The length of</li> </ul>
		Monitoring improvement	Ensure improvement is sustainable		TBC	CPB and aortic cross clamp time might be difficult to



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						predict as it can depend on the patient's anatomy  Post-op: Level 3 care in CITU + support of organ systems as necessary to prevent and support AKI. Involvement of nephrology team in event of AKI requiring CVVHD. Neurology team + stroke team for advice on management of CNS complications and rehabilitation
2.4	Post-operative Dialysis	<ul> <li>Internal case note review to be undertaken for each patient to establish:</li> <li>Risk score</li> <li>Pre-Operative risk</li> <li>Post-Operative risk</li> </ul>	Understanding of where improvements can be made	Group Medical Director, Morriston Hospital	01.11.21	Data extracted and shared with UMD w/c 02/08  Immediate actions taken to provide assurance on safety are:
		<ul> <li>Action plan to be developed in response to findings</li> </ul>	Set goals for improvement upper quartile peer	Clinical Director, Cardiothoracic Surgery	30.11.21	<ul> <li>Consultant only operating</li> <li>Preop: patients at risk (pre-existing premorbid conditions) identified by surgeon and appropriate risk quoted + documented</li> </ul>



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	Delivery of action plan	Deliver action plan for improvement	Clinical Director, Cardiothoracic	30.11.21	o Intra-op: Full invasive monitoring, appropriate support of perfusion pressures on CPB and
	Monitoring improvement	Ensure improvement is sustainable	Clinical Director, Cardiothoracic Surgery	ТВС	afterwards. The length of CPB and aortic cross clamp time might be difficult to predict as it can depend on the patient's anatomy  O Post-op: Level 3 care in CITU + support of organ systems as necessary to prevent and support AKI. Involvement of nephrology team in event of
					AKI requiring CVVHD. Neurology team + stroke team for advice on management of CNS complications and
					complications and rehabilitation



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2.5	i) Identify the usage of blood products as highlighted by GIRFT	<ul> <li>Case note review to be undertaken to identify:         <ul> <li>Risk score</li> <li>Pre-Operative risk</li> <li>Post-Operative risk</li> </ul> </li> </ul>	Understand current performance and opportunities for improvement	Group Medical Director, Morriston Hospital	Completed	Blood Bank will provide a monthly download of blood products used and this will be used in the dashboard
		Deliver a plan to implement the changes according to outcome of case note review	<ul> <li>Target upper quartile performance in peer group of 31 units</li> <li>Ensure change is sustainable</li> </ul>	Clinical Director, Cardiothoracic Surgery	Completed	Prospective method of capturing blood usage via the ICNARC database will also be used to ensure the data is accurate
	ii) Improve optimisation of patients pre and post operatively to improve blood produce usage and reduce LOS	<ul> <li>Benchmark against         <i>Plymouth Hospitals</i> good         practice &amp; monitor         improvement</li> <li>Develop options for pre op         IV iron clinic to improve         quality, safety and clinical         effectiveness</li> </ul>	<ul> <li>Identify best practice that could be implemented locally</li> <li>Provision of an IV iron clinic to improve clinical outcomes</li> </ul>	Directorate Manager, Cardiac Surgery  Senior Matron, Cardiac Surgery	31.10.21	Clinical Director for Cardiothoracic Surgery to agree with Lead Cardiac Intensivist, a revised SOP for 'Pre Op Bloods' to include when Hb threshold requires IV iron infusion pre operatively to reduce blood usage. This will be aligned to the development of the IV iron clinic to support implementation



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		Deliver a plan to implement the change		Senior Matron, Cardiac Surgery	31.11.21	Link in developments w/ the Draft all Wales pathway:  All Wales Pathway Final Draft -anaemia  Plans are being developed to provide additional space for pre assessment in Cardiac OPD which will provide the space for enhanced pre admission; this will align with a plan to utilise the Theatre Admission Unit to support improved pre admission anaemia management
3.	Processes & Patient Path	iway				



	Goal	Method	Outcome	Lead	Timescale	Update
3.1	Day of Surgery Admission (DOSA) and Reduced Pre op Length of Stay (LOS)	Benchmark against     Blackpool Teaching     Hospitals and upper     quartile peer group for pre     assessment, pre admission     and DOSA performance to     enable improved DOSA     levels and improve pre-     operative LOS	<ul> <li>Identify best practice that could be implemented locally</li> <li>Standardised processes within the unit to achieve increase in DOSA; to 10% of elective admissions within 3 months and &gt; to 20% within 6 months</li> </ul>	Senior Matron, Cardiac Surgery	01.11.21	Capacity Planning Meeting has been set up on a Mon and Thu (chaired by Senior Matron or Directorate Mgr.) to support improvement  Working on plan to populate theatre lists 2-3 weeks in advance to support DOSA and reduced pre op LOS; need to work w/ theatres and anaesthetics to support
		Develop action plan for pre admission following benchmark review to include options, costs and benefits of dedicated pre admission service w/ advanced nursing skills to assess and clerk patients and support access to anaesthetic reviews	<ul> <li>Improved pre-operative LOS to upper quartile performance in peer group of 31 units</li> <li>Minimise disruption and improve theatre utilisation</li> </ul>	Senior Matron, Cardiac Surgery	31.11.21	Plans are being developed to provide additional space for pre assessment in Cardiac OPD which will provide the space for enhanced pre admission Initial discussions taken place to agree pre op use of hotel accommodation for Cardiac Surgery to support DOSA  Process agreed to make
		Golden patient identified and listed 1st on priority		Clinical Director ,	Completed	priority patient the golden patient



	Goal	Method	Outcome	Lead	Timescale	Update
		list; 2nd patient to be DOS admission		Cardiothoracic Surgery		
3.2	Discharge Processes	Benchmark against     Basildon and Thurrock     University Hospital, Barts     Health and upper quartile     peer group for post op     length of stay (LOS) to     support improvement in     post op LOS	<ul> <li>Identify best practice that could be implemented locally</li> <li>Reduced post op LOS stay to upper quartile performance in peer group of 31 units through examination of current causes of delay</li> </ul>	Senior Matron, Cardiac Surgery	31.10.11	Clinical Director, Cardiothoracic Surgery to discuss w/ colleagues to agree to remove wires on weekend to support weekend discharge; link in w/ plan for 7 day working for echocardiography to support post removal echo on the weekend
		<ul> <li>Development of patient admission and discharge SOP following benchmark review to include:</li> <li>ERAS pathways</li> <li>Weekend discharge plans</li> <li>Role of daily senior decision maker</li> <li>Options for nurse led discharge</li> <li>Role of board rounds in effective discharge planning</li> </ul>	<ul> <li>Standardised processes adopted within the unit and reduced post op LOS stay to upper quartile performance in peer group of 31 units</li> <li>Implementation of key changes</li> <li>Monitoring via CD/Service Group MD</li> </ul>	Senior Matron, Cardiac Surgery  Senior Matron, Cardiac Surgery  Clinical Director,	31.10.11  14.11.21  Oct 21 onwards	Reissue the SOP for post op care of cardiac surgery patients  Agree inclusion criteria  Ensure weekend plans are fully worked up and discussed in Fri Board Rounds



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		O Utilisation of Estimated Date Discharge	and Directorate/Service Group governance processes	Cardiothoracic Surgery		
3.3	Critical Care LOS  Note: currently the unit has 12 CITU beds and not 20 identified in the GIRFT review. The remaining 8 beds are used to support "green" pathway for non-cardiac elective surgery	Review utilisation of CC capacity to ensure appropriate step-down into lower level beds	Target of no patients discharged home from a designated critical care bed	Senior Matron, Cardiac Surgery	Completed	Utilisation and availability of beds on Dan Danino and Cyril Evans being monitored and DTOC process agreed for CITU/HDU  Daily Cardiac Safety Huddle has been established (chaired by Senior Matron) to support appropriate allocation of beds
3.4	Ratio of Urgent: Elective cases	Demand/capacity exercise to be undertaken for elective and IP work to facilitate meaningful planning	Capacity aligned to service requirements that will support achievement of WHSSC LTA target	Directorate Manager, Cardiac Surgery	Completed	Capacity Planning Meeting has been set up on a Tue and Thu to support improvement
		Benchmark against     University Hospital	<ul> <li>Immediate increase in throughput linked to maximising waiting lists to achieve monthly rate of activity consistent with contracted activity</li> </ul>	Directorate Manager, Cardiac Surgery	Completed	Locum Consultant in post and undertaking additional theatres; job planned for 2x all day theatres p/wk w/ additional backfill as necessary



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		Southampton Cardiology unit to understand their zero tolerance approach to cancellations	Explore feasibility of pooling non-elective cases ready for next available theatre and next available appropriate surgeon	Clinical Director, Cardiothoracic Surgery	14.10.21	Discussion has taken place and plan is supported; implementation plan currently being worked up
3.5	Weekend Operating Lists	Keep under review – not required currently – focus on delivering full available capacity during core hours	Monitor requirements –     If all core capacity is fully     utilised and additional     capacity is still required     this will be reviewed	Directorate Manager, Cardiac Services	Completed	With the availability of 8x 3 session operating days per week there is capacity to deliver activity of 13-15 cases per week; there is not the demand to justify weekend working in addition to this; Further review of demand/capacity being completed to determine if LTA target is realistic  Capacity meeting on Mon &
3.6	Timeframe to get back to core pre COVID activity – Elective/Emergency Surgery	Identify constraints and work through solutions:  Bed capacity Pre/Post admission	Pre-core activity re- established for 2019/20 on monthly rate	Directorate Manager, Cardiac Services	Completed	Capacity meeting on Mon & Thu being used to closely monitor and maximise the amount of surgical activity; there are constraints w/



	Goal	Method	Outcome	Lead	Timescale	Update
		<ul> <li>Green/Amber Pathway theatre capacity</li> <li>Staffing resources</li> </ul>	Activity increased to deliver WHSSC contracted activity	Directorate Manager, Cardiac Services	01.11.21	theatre scrub staff, anaesthetics and critical care capacity that will become more problematic as capacity further increases
3.7	Implementation of Component Wait for Cardiac Surgery	Waiting times report created similar to TAVI to allow transparency of the Cardiac Surgery waiting time element of the pathway	Transparent Cardiac     Surgery component     waiting time to monitor     performance and     bottlenecks	Directorate Manager, Cardiac Services	31.03.22	SBUHB has been trialling a new aggregate report as an interim measure until a patient level MDS is created to support component waiting times; plan in place to shadow report with a view to formally reporting from 01.04.22
4.	Governance and Assurar	nce				



	Goal	Method	Outcome	Lead	Timescale	Update
4.1	Clinical Outcomes Data	Establish a formal Standard     Operating Procedure on     cardiothoracic data     validation, risk adjustment,     outlier identification,     escalation plans and     reporting for GIRFT metrics	Improve quality and safety within the service	Deputy Group Medical Director, Morriston Hospital	01.10. 21 In line w/ dates of Audit and Board mtgs.	Format of quality metrics report being worked through following discussions with IM&T colleagues
		<ul> <li>Development of module within HB PATS – Discuss with Informatics colleague</li> <li>Review and discussed at monthly clinical audit; Increase collaboration between clinical cardiothoracic team and coders by including coders in MDT meetings and morbidity and mortality meetings</li> </ul>	Transparent monthly outputs - any concerns with the performance of the service will be clearly visible/monitored and discussed in the various fora	Consultant Cardiothoracic Surgeon		
		Publish outcome and improvements via bi- monthly Cardiac Surgical Board	Transparency regarding clinical outcomes	Clinical Director, Cardiothoracic Surgery	In line w/ dates of Audit and Board mtgs.	



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4.2	Reporting and Escalation Framework	Publish outcome and improvements via Morriston Service Delivery Group's Quality & Safety Group	Report to be completed and discussed in Morriston Service Delivery Group's Quality & Safety Group	Clinical Director, Cardiothoracic surgery	Completed	Consultant Surgeon & Audit Lead for cardiac surgery attending Morriston SG Q&S Group and providing updates on cardiac surgery outcomes as part of the governance report
4.3	Development of Clinical Outcomes Dashboard	Refine annual NICOR data to provide more granularity on a range of outcome measures	Will enable a comparison with internal and GIRFT data to sense check and monitor for accuracy	Clinical Director, Cardiothoracic Surgery	Completed	
		Discuss with informatics colleagues options for live dashboard with ability to monitor clinical outcomes in real-time	Dashboard developed for regular use within the service to allow for a monitoring mechanism to inform quality and activity improvements and report quality measures	Deputy Group Medical Director, Morriston Hospital	01.11.21	
4.4	Data Submissions to NICOR	Review current process for submitting data via clinical team and clinical audit coordinator to ensure sufficient capacity in place	Unified approach and clinical consensus/educational requirements addressed	Clinical Director, Cardiothoracic Surgery	Completed	



	Goal	Me	thod		Outcome	Lead	Timescale	Update
			audit r provision to rrent resource is	•	Resource requirement to cover the current single handed audit coordinator to be identified	Directorate Manager, Cardiac Surgery	Completed	A workload review has been concluded and discussions taking place on the resources required moving forward; benchmarking against units of a similar size is also underway to support the process
4.5	Develop clear and robust governance framework to ensure Directorate and Service Group are sighted on key performance and outcome metrics (including morbidity as well as mortality)	discussed a directorate and action to address  Service Gromonthly su outcome di Group Q&S oversight o	e M&M meeting plans developed variance oup to receive immary of ata for Service	•	Ownership of outcomes (morbidity as well as mortality) by clinicians  Develop culture of constant improvement	Clinical Director, Cardiothoracic Surgery  Group Medical Director, Morriston Hospital	Completed 01.11.21	Weekly Triumvirate (CD. DM & SM) Meeting established to provide operational oversight of the implementation of the GIRFT Gold Action Plan  Project management structure has been agreed in line w/ Gold/Silver/Bronze Command and Control Structure  Audit Lead for cardiac surgery attending Morriston SG Q&S Group and providing updates on cardiac surgery outcomes as part of the governance report