

Title of report:	MANAGEMENT OF MEDICAL DEVICES QUARTERLY SUMMARY REPORT JANUARY 2020 - JUNE 2020
Presented to:	MEDICAL EQUIPMENT MANAGEMENT GROUP
On:	17th JUNE 2021
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Executive summary

This report is submitted to inform the Medical Equipment Management Group on the performance of the services provided by the Medical Electronics department in relation to the maintenance and repair of medical devices in the period from January 2021 to June 2021.

This summary report focuses on the two main KPIs (Key Performances Indicators) that form part of the core processes internally managed by the Trust's Medical Electronics Dept. such as the Periodic Maintenance (PM) and the Repair (Corrective Maintenance).

1. MED Database Report

There were no major issues with the Medusa database during the period under review.

Impact of Covid on departmental performance

Two core responsibilities – which are to carry out;

- Repairs - on both simple and complex medical equip throughout the Trust
- PM Service (Period preventive maintenance) to all medical equipment in use on patients

However, with the onset of the Covid-19 Pandemic our ability as MED department to meet the set KPIs were somewhat affected as a result.

Summary

- A recovery plan to improve the slump in KPI figures
- Database Growth
- Department of Health and Social Care (DHSC) – Previously issued medical equipment to support the Covid patients has now transferred Ownership to WWL
- Equipment storage unit challenges - MED and Leigh's Storage unit
- Additional staff to support the huge growth in Medusa database and service activity
- Refurbish the old and derelict MED Workshop Portakabin to accommodate more technicians

Main issues

Medical Equipment - Looked for But Not Found

- We had continued to experience difficulties in finding the location of most of the Medium-risk devices since some of these devices were being redeployed to help support Covid crisis without notifying the MED workshop.
- The situation was exacerbated by sudden ward reconfigurations that was happening in a drive to manage the 2nd Covid wave.
- Key medical equipment such Tympanic Thermometers, Vital Signs monitors etc, has moved around between wards and across sites – without our knowledge and in certain cases even the Asset owner have been oblivious to these movements.

Database Growth

Database Inventory Growth rate

Jan 2021: **29696**

June 2021: **30850**

	Period:	Jan to June 2021									
	Acceptance Tests			Inventory Growth							
					Growth			Recession (Scrapped)			
	New	Normal	Covid-19		Jan-21	1906		381			
		1492	103		Jun-21	869					
					Jan - June	1154	3.74%				
	Loan	16	1		Cumulative Growth:		3.74% (1154)				
		National Stock Allocations			Decline (Scrapped):		381				
		12			i.e. 1154:381		Growth index:		3.03		

The growth in the database whilst it a positive activity however this growth is not in tandem with the numbers of technician required to maintain the service – this has brought on further service / cost pressures on the department.

Whether this is a Risk or not (an Issue) by definition – what other EBME Trusts have been doing is, requesting for additional WTE B6 EBME technicians to support this additional workload brought on by the Covid pandemic.

As a running modest example,

- *Given and Equipment population of 1252 High Risk devices in Trust,*
- *Assigning 2x Technicians to undertake a PM service Annually*
- *2 Hours for PM Service Job and 2 Hours for a Repair Job = 4 Hours*

We have an **Equipment population** (High Risk) to **Technician** ratio of,
1252 / 2 = 626 (Devices per Technician)

This equates to **2504** hours of both **Repairs** and **PM Service** jobs (i.e., 626 x 4)
This means it would take 16 Technician work months to complete the work – with no chance of spending time on any other jobs.

If the above were True, it would then mean a backlog would start to develop in time.

2. Missing Medical Equipment

There was no medical equipment reported as **Missing for over 2 Years**, between Jan 2021 and June 2021, however 35x items could not be located for PM service or repairs (Looked For but Not Found) - see table below.

Location	Eq. no.	Device type	WO no.	Model	Completed	Issued	Fin. Completed
TLC ; MEDICINE ; PAED OPD	030928	BP MONITOR & PULSE OXIM	092592	VS 900	15/01/2021	02/08/2018	15/01/2021
WRIGHTINGTON ; SPECIALIST SERVICES ; OUTPATIENTS WRIGHTINGTON	031476	BP MONITOR & PULSE OXIM	094301	VS 900	14/04/2021	02/10/2018	14/04/2021
WRIGHTINGTON ; SPECIALIST SERVICES ; OUTPATIENTS WRIGHTINGTON	031476	BP MONITOR & PULSE OXIM	094793	VS 900	14/04/2021	16/10/2018	14/04/2021
ELS ; ESTATES & FACILITIES ; RAEI	030158	BP MONITOR & PULSE OXIM	093278	VS 900	18/03/2021	02/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030159	BP MONITOR & PULSE OXIM	093279	VS 900	18/03/2021	02/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030177	BP MONITOR & PULSE OXIM	093280	VS 900	18/03/2021	02/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030161	BP MONITOR & PULSE OXIM	093281	VS 900	18/03/2021	02/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	B86 20	BP MONITOR & PULSE OXIM	094087	VS 800	18/03/2021	26/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030167	BP MONITOR & PULSE OXIM	094882	VS 900	18/03/2021	19/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030181	BP MONITOR & PULSE OXIM	095192	VS 900	18/03/2021	02/11/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030176	BP MONITOR & PULSE OXIM	095193	VS 900	18/03/2021	02/11/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030173	BP MONITOR & PULSE OXIM	095194	VS 900	18/03/2021	02/11/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030183	BP MONITOR & PULSE OXIM	095195	VS 900	18/03/2021	02/11/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	030167	BP MONITOR & PULSE OXIM	095196	VS 900	18/03/2021	02/11/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	017938	ECG RECORDER	093273	MAC 5500	18/03/2021	01/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	A101 61	MATTRESS (PRESSURE RELIEVING)	092368	QUATTRO PLUS	18/03/2021	25/07/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	020018	MATTRESS (PUMP)	094551	QUATTRO PLUS	18/03/2021	09/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	A101 11	MATTRESS (PUMP)	094552	QUATTRO PLUS	18/03/2021	09/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	020038	MATTRESS (PUMP)	095197	QUATTRO PLUS	18/03/2021	02/11/2018	18/03/2021
LEIGH ; MEDICINE ; PHYSIOTHERAPY	MB 07	MEGAPULSE	092014	3/85/37A	18/03/2021	13/07/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	032857	PATIENT MONITOR	092741	MP5	18/03/2021	09/08/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	017992	PATIENT MONITOR	094476	MP5	18/03/2021	05/10/2018	18/03/2021
LEIGH ; MEDICINE ; PHYSIOTHERAPY	014544	PSU/CHARGER	094480	P5571812UV12	18/03/2021	05/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	010626	PSU/CHARGER	094563	P5571812UV12	18/03/2021	09/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	P19 07	PULSE OXIMETER	094089	520A	18/03/2021	26/09/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	P28 04	PULSE OXIMETER	095078	515B	18/03/2021	26/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	P54 27	PULSE OXIMETER	095455	515C	18/03/2021	11/11/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	S72 03	SUCTION UNIT	095089	FSE500	18/03/2021	27/10/2018	18/03/2021
X-RAY MRI SCANNER ; SPECIALIST SERVICES ; RAEI	S116 36	SUCTION UNIT PORTABLE	092039	PETITE ELITE	16/03/2021	14/07/2018	16/03/2021
RAEI ; SURGERY ; THEATRE 1	036834	SYRINGE PUMP	091665	ALARIS PK PLUS	27/04/2021	02/07/2018	27/04/2021
ELS ; ESTATES & FACILITIES ; RAEI	019776	SYRINGE PUMP	094735	ALARIS GH PLUS	18/03/2021	14/10/2018	18/03/2021
ELS ; ESTATES & FACILITIES ; RAEI	020112	SYRINGE PUMP	095792	ALARIS GH PLUS	18/03/2021	23/11/2018	18/03/2021
LEIGH ; SPECIALIST SERVICES ; X-RAY LEIGH	020629	ULTRASOUND SCANNER	095569	SSA 780A (APLIO MX)	18/03/2021	15/11/2018	18/03/2021
LEIGH ; SPECIALIST SERVICES ; X-RAY LEIGH	032787	ULTRASOUND SCANNER	095570	AFFINITY 70G	18/03/2021	15/11/2018	18/03/2021
LEIGH ; MEDICINE ; PHYSIOTHERAPY	038521	ULTRASOUND THERAPY UNIT	092016	TD12D1A	18/03/2021	13/07/2018	18/03/2021

3. Decontamination Issues

There were no decontamination issues to report on for the period under review i.e. Jan and June 2021.

4. Defects and Failures

- None report during the period under review.

5. Externally managed equipment

This aspect of work is managed by the clinical divisions, in liaison with the procurement department via external contracts.

The data associated with external contracts is not always made available to the MEM and as such accurate data cannot be supplied at this time.

Actions: An action plan to address the current shortfall is presently being looked at via a Task and Finish group that was appointed to review the performance of maintenance contracts Trust wide.

6. Internally Managed Equipment

These are groups of medical equipment (multifaceted and highly complex) undertaken by the department which account for a ratio of 60% to the total population of the medical equipment registered on the Trust medical equipment database.

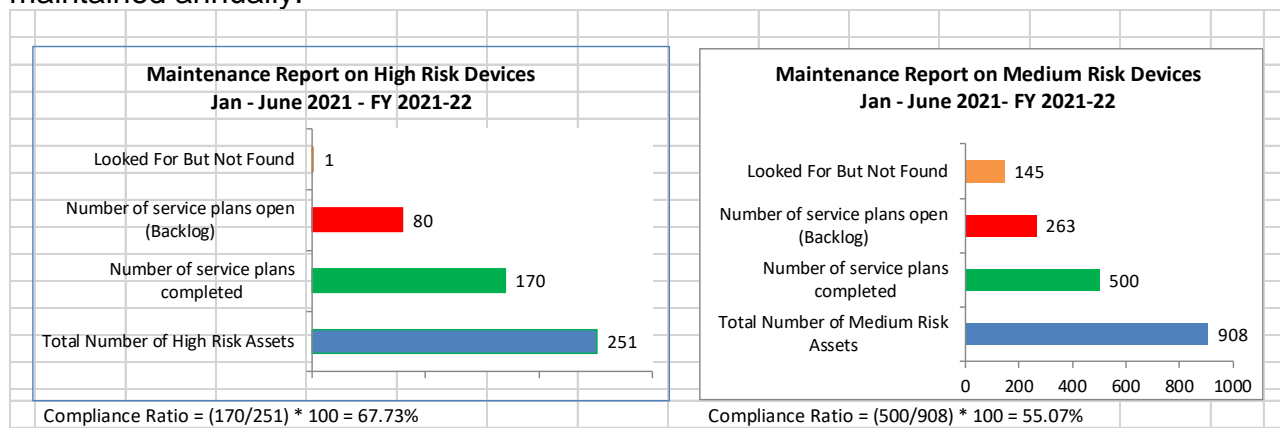
The other 40% consists of medical equipment (which is multifaceted, multidisciplinary and highly complex) is managed via external service contracts set up by the Trust's procurement team.

Key Performance Indicators (KPIs)

The performance of both the Repairs and PPM Service processes are explained in the KPIs below.

Q1 & Q2 (April- Sept 2020) - Key Performance Indicators (KPIs)

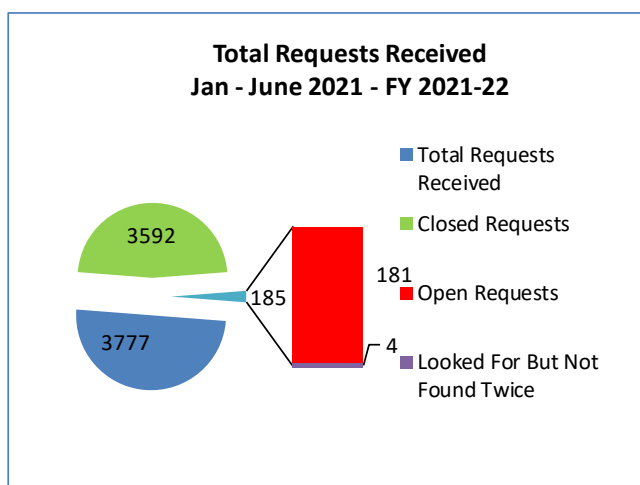
KPI 1: 90% of the Trust's high risk medical equipment identified within Medusa to be maintained annually.



Comment: Target Compliance - 90%

The above graph shows a PPM achievement ratio for the period between Jan and June 2021 – it was **67.73%** for **High-Risk devices** and **55.07%** for **Medium-Risk devices**. This was a moderate achievement given that most of our human resources were targeted at addressing the service pressures brought on by the Coronavirus pandemic.

KPI 2: Subject to the availability of spares, all equipment reported as breakdowns (In-house Repairs) via the correct procedure will be repaired within 7 working days.



Compliance Ratio = $(3592/3777) * 100 = 95.1\%$

Comment: The above graph shows volume of reactive jobs that were reported via the MED helpdesk for the period between Jan and June 2021.
The graph shows a compliance ratio of **95.1% for Repairs reported via Helpdesk** – the majority of which comprised of equipment brought into the Trust (i.e., Acceptance tested (New or On-Loan)) in order to manage the Covid-19 pandemic during the 1st and 2nd wave).

7. Apprenticeships

Update as of June 2021

Arrangements are progressing smoothly for the Apprentices to start their respective courses in September 2021.

Meanwhile since the last meeting update the apprentice have been busy familiarising with a range of Low-risk medical equipment and attended a number of manufacturer's courses online, on site and externally attended a 10 Day residential course in Biomedical Equipment Maintenance Practice at the Eastwood Park in Gloucestershire.

Three (3x) WTE AfC Band 4 medical engineering technicians were nominated as trainees.

As at time of this report only 2 out of 3 WTE AfC Band 4 medical engineering technicians have decided to start the Apprenticeship training in September 2021 the third technician has deferred until further notice.

Identified Apprenticeship Pathway

- Maintenance and Operations Engineering Technician (MOET) – NHS Medical Pathway
1x Candidate – Level 3 entry point
- BEng (Hons) Electrical / Electronic Engineering Degree apprenticeship
2x Candidates - Level 5 entry point
- The Apprenticeship will help bridge identified gaps in candidate's core knowledge of medical engineering concepts and the application of engineering principles and design concepts to medicine and biology for healthcare purposes and this will,
 - form part of their continuous professional development (CPD or our local PDR process)
 - offers a formalised means to achieving higher levels professional qualification

Course attended by the new Technicians, so far this FY 2021-22, include the following

- Mindray BP monitor technical training - Online course
- Electrical Safety Test course – On site (Under Covid secure conditions)
- Philips Biomed Technical Training course - IntelliVue MX Monitoring (All models) – On site
- Eastwood Park (Biomedical Equipment Maintenance Practice course) – 10 Day Residential course

8. New Risks

There was one risk reported during the period under review in relation to the end-of life notification against the Alaris GH Syringe pumps, with serial number range manufactured between 1999 and 2011.

DIVISION (OWNER)	DEPARTMENT (OWNER)	QTY
ESTATES & FACILITIES		46
	ELS	45
	MED WORKSHOP	1
MEDICAL DIRECTOR		1
	CLINICAL SKILLS & SIMULATION	1
MEDICINE		8
	CARDIOLOGY	2
	CCU	6
SPECIALIST SERVICES		1
	THEATRE 1-4 OLD & 9	1
	SURGERY	18
	ICU	19
Grand Total		75

The Alaris GH Syringe pumps are manufactured and distributed by BD UK.

The Notification stated that BD will no longer support these devices effective **31st December 2020** – which immediately became a huge source of concern for the Trust.

The RA EF ME 066 was completed and taken to DQEC for review and direction on how the pumps could be funded.

Risk rating taking into account existing controls: (see Risk Score Model Matrix at Appendix 1, page 9-11 of the Risk Management Process TW10-002 SOP1)						
Likelihood:	3	x	Consequence:	3	=	Risk Rating: 9

Date of next review: **Quarterly via MEMG**

9. CME (Capital Medical Equipment) Budget Update 2021-22 FY

The table below shows a list of schemes (New & Replacement) as bids at the May 2021 meeting from each Division.

The total amount allocated to CME for the 2021-22 financial is £2m with the probability that it would subsequently be revised down.

The table was prepared and presented at the CME group by the Trust Capital Accountant.

CME Fund - New & Replacement								Spend Actual
Scheme	Scheme Code	PO Number	Lead	Department	Capital Approved in minutes £	Orders Raised incl VAT	Orders not yet received	Apr21-May21
OPG Dental	X8526			RAEI - Dental	96,270	-	-	-
Ultrasound room 2				RAEI	93,600	-	-	-
Window XP system					30,000	-	-	-
Phototherapy - parts					9,180	-	-	-
Emergency nurse call system				Wrightington	21,500	-	-	-
Marquet operating table					48,000	-	-	-
Poster printer				Medical Photography	5,866	-	-	-
Replacement of cameras - medical photography				Medical Photography	15,000	-	-	-
				Specialist Services Total	259,416	-	-	-
2 x insufflators				Theatre 5&6	29,919	-	-	-
Field Machine analyser				Ophthalmology	34,003	-	-	-
TOE Probe				ICU	15,123	-	-	-
				Surgery Total	79,045	-	-	-
				Medicine Total	-	-	-	-
ECG machine				Ward	11,352	-	-	-
Workshop test equipment				Medical Electronics workshop	12,000	-	-	-
				Medical Electronics Total	23,352	-	-	-
Cardiogram machine				Community	56,593	-	-	-
				Community Total	56,593	-	-	-
				CME Committed Fund Total	418,406	-	-	-
				CME Capital (New and Replacement Fund) Allocation	2,000,000			
				Remaining New & Replacement Capital Allocation	1,581,594			

Capital Projects

The projects undertaken, completed or yet to be completed include the following

- Upgrade of the 11x Bedside Philips Patient monitors on CCU
Status: Complete
- Installation of the Medical Gas system on the 26x Bed CAU (Community Assessment Unit)
Status: Complete
- Installation of 6x Bay Wall mounted Philips Patient monitors on the A&E iSAT unit
Status: Complete
- Installation of the 9x Philips Patient monitors on A&E i.e.,
 - 4x on A&E Resus Asymptomatic (3x on roll stands and 1x Wall mounted)
 - 5x on A&E Majors - Wall mounted**Status:** Complete
- TIA / Stroke unit (ASU on Billinge) – Philips Telemetry system (Stand Alone) - 8x Transceivers with 2x Battery Charging Bays
Status: On going
- ICU / HDU – Central station unit with 11 Bedside Philips Patient monitors
Status: On going

10. CONCLUSIONS / FUTURE CHALLENGES

- **Achievement of KPIs during period between January – June 2021**

- **PM** – achievement hampered by onset of the Coronavirus pandemic which has disrupted most of our planned maintenance schedules and thereby affecting our set KPIs

The report recommends that the MEMG considers revising downwards,

- The KPI Target for this period under review and up until we come out the coronavirus pandemic which has made completion of scheduled PM service very difficult
- **Repairs** – compliance met, above target. Majority of jobs comprised of;
 - acceptance testing (both capital and revenue items),
 - minor breakdown repairs as well as
 - undertaking 1st line maintenance on externally contracted equipment
 - supervising external service contractors who came on site to service / repair medical equipment

- **Evidence Based Maintenance**

This would be a long-term project to help the department utilise its resources more effectively rather than following manufacturer's guidelines on the frequency of planned maintenance. The service intervals would be based on the reliability likelihood and effect of the device failing.