

# Thoracic Surgery Single Site Consultant Workforce Model- Consultation 07.06.19

## Context

The Joint Committee of Welsh Health Specialised Services Committee (a committee of all the health board chief executives and 3 independent members) considered in November 2018 the recommendations that thoracic surgery should move to a single site model and that single site should be located at Morriston Hospital, Swansea. The committee supported this recommendation but asked for a number of assurances regarding the future model and specifically asked for a workforce plan, within 6 months, which described how thoracic surgical cover would be provided to the Major Trauma Centre at UHW, Cardiff.

In May 2019 a proposal regarding the workforce model was submitted by the two provider (Swansea Bay and Cardiff and Vale University Health Board) medical directors to the Joint Committee however the committee deferred a decision and requested that Dr Sian Lewis (and the WHSS Team) bring a WHSSC workforce assessment back to the Joint Committee by the end of June 2019. They asked that this assessment take into consideration a number of matters and some uncertainties raised in the paper and during the meeting.

This paper summarises this initial assessment of the optimal consultant work force model. There are a number of assumptions in this modelling work and this paper is therefore being circulated for comments which will be incorporated into the final submission to the Joint Committee. In addition the WHSS team is establishing a panel of expert external advisors who will also provide feedback.

The timescale for this consultation process is extremely challenging; we apologise for this but we are working within the requirements of the Joint Committee. To help with this rapid turn-around it is important that your comments are returned on the attached template and reference the relevant line within the paper. Also it is important that you provide wherever possible independent evidence rather than opinion to substantiate your comments.

## Background

The following assessment is based on;

- a number of points made in the RCS Invited Review 2016,
- the WHSSC Service Specification for Thoracic Surgery
- NHS England Service Specification for Thoracic Surgery
- The current activity levels of the two units plus 20% additional workload

The Thoracic Surgery Implementation Group is working to define the service model so this assessment is also based on a number of assumptions. These assumptions come from comparators with other thoracic surgery centres, presentations made by two consultants (MK and PK) at the recent thoracic clinical summits in March and May 2019.

The RCS Invited Review (2016) stated that;

1 "In line with units of a similar size it was considered that five consultant thoracic  
2 surgeons were required to service a population of 2.4 million people safely. This  
3 would provide adequate emergency on-call cover as well as other services to  
4 ensure adequate patient throughput. RCS Invited Review 2016".

5 Additionally the "review team concluded that there were too many separate MDT  
6 meetings per week and considered that it would be appropriate to merge  
7 meetings. This would place fewer burdens on consultant surgeons attending  
8 multiple MDT meetings".

9 The RCS also recommended that;

10 Five consultant thoracic surgeons should be employed to meet service demands.  
11 Each of the consultants' job plans should include:

- 12 • one in five on-call duty which includes weekend cover
- 13 • At least one specified operating day
- 14 • Fair distribution of MDTs with adequate cross-over cover
- 15 • Attendance at out-patient clinic

16 It is acknowledged that at this point the location of the MTC had not been  
17 determined.

18 The independent panel and the final recommendation from Joint Committee  
19 including further mitigations required by Health Boards means that there are  
20 other fixed points;

- 21 • A commitment to 6 consultant on the basis that this would allow 9.00am  
22 to 5.00pm onsite cover at the UHW site and an additional 20% workload  
23 (based on outturn + 20%).
- 24 • A commitment to the development of the skills of the trauma team to  
25 manage immediate thoracic trauma.
- 26 • That there will be an on-call thoracic surgery rota which also provides  
27 cover to the MTC, and will be in the form of remote advice to the trauma  
28 team 24/7 plus attending the MTC in the rare event that their specialist  
29 surgical intervention skills are required to support the trauma team;
- 30 • There will be a thoracic surgery presence on the University Hospital of  
31 Wales site 5 days a week for advice and support for major trauma and  
32 other clinical services as required.
- 33 • That we will obtain and act upon advice from the Wales Cancer Network to  
34 improve the way our multi-disciplinary teams work, ensuring that  
35 wherever possible care is delivered closer to home.

36 Further advice provided to WHSSC at the time of the consultation noted that the  
37 Intercollegiate Surgical Curriculum Programme has recently been updated (16th  
38 November 2017) to include the requirement that surgeons trained in trauma will  
39 allow them to practice independently for injuries to the thorax.

40 The extant Thoracic Surgery Service Specification Version: 1.0 notes the  
41 following key points

With regard to minimum volumes (these are based on the NHS England Service specification)

- The thoracic surgery unit should undertake a minimum of 150 primary lung resections per year.
- The thoracic surgery unit should have a minimum of 3 full time general thoracic surgeons.

Regarding emergency cover and on-call arrangements

- Providers are required to have 24/7 emergency cover by general thoracic surgical consultants with or without mixed-practice cardiothoracic surgical colleagues.
- The surgeons on the rota should be able to deal with the full range of thoracic surgical emergencies.
- Cross cover of rotas from consultants with a purely cardiac practice or from consultants from other specialities is unacceptable.
- A sustainable on call rota should not be more frequent than 1 in 4.

## Assessment

### Demand Analysis

This demand analysis is based on an estimated population of 2.2 million people.

The table below shows the activity outturn for all procedures over the last 3 years

**Table 1 Thoracic Surgery Outturn by Centre**

	SBUHB	CVUHB	Total
2016/17	421	615	1036
2017/18	474	646	1120
2018/19	422	672	1094

Source: Provider contract monitoring returns to WHSSC

This shows a fairly static position of approximately 1100 cases per year. For planning purposes this would mean approximately 1300 cases based on outturn plus 20%.

Table 2 shows the casemix for the two centres combined as reported to the Society for Cardiothoracic Surgery in 2017/18.

**Table 2 Casemix for Morriston/UHW Combined 2017/18**

Procedure	Number of Cases
Lung resections – primary malignant	458
Lung Resection – others	101
Mesothelioma Surgery	16
Pleural procedures	170
Chest wall/diaphragmatic	97
Mediastinal	57

Other	10
Endoscopic	62
<b>Total</b>	<b>971</b>

**Table 3 Number of primary lung resections**

<b>Year and Source</b>	<b>SBUHB</b>	<b>CVUHB</b>	<b>Combined</b>
2016/17 SCTS*	159	194	353
2017/18 SCTS*	162	279	441
2018/19 WHSSC	168	273	441**

\*excludes exploratory procedures with no resection

\*\* forecast from M11

Surgical resection is currently the only curative option for lung cancer, therefore long term survival rates are closely related the number of resections carried out at a centre. The table below shows the resection rate for patients across south Wales based on the hospital of referral. This shows a significant variance in lung resection rates from 27% to 13%. The best resection rate across the UK is reported from Papworth Hospital at 28%. The aim with a single centre is to consistently increase the resection rate to be amongst the best in the UK and to do this across the region.

**Table 4 Lung Cancer Audit 2018 (2017 data)**

	<b>Resection rate</b>	<b>Total cases</b>	<b>Number resected</b>
Bronglais General Hospital	15.40%	56	9
Prince Philip Hospital	18.40%	188	35
Withybush General Hospital	15.10%	97	15
Princess of Wales Hospital	27.00%	106	29
Morrison Hospital	22.90%	294	67
University Hospital Llandough	17.10%	290	50
The Royal Glamorgan Hospital	23.10%	152	35
Prince Charles Hospital Site	18.30%	133	24
Nevill Hall Hospital	13.10%	106	14
Royal Gwent Hospital	18.80%	268	50
<b>South Wales</b>	<b>19.40%</b>	<b>1690</b>	<b>328</b>
<b>Wales</b>	<b>18.30%</b>	<b>2179</b>	<b>399</b>

## Proposed Activity Requirements

### MDTs

At the recent clinical summit meetings the two clinical leads suggested the following MDT configuration based on six surgeons with two surgeons covering each MDT to ensure that there is always a surgical presence at the MDT and to improve consistency of decision making.

Lung Cancer MDT	New Cases/Year (NLCA) 2015)	Surgeon Responsible	Surgeon Cover
SBU HB Morriston MDT (Singleton, Morriston, Neath)	311	Surgeon 1	Surgeon 4
Hywel Dda MDT GGH (GGH, BGH, WGH, PPH)	311	Surgeon 2	Surgeon 5
CTM HB MDT POW	108	Surgeon 3	Surgeon 6
Prince Charles MDT	126	Surgeon 4	Surgeon 1
ABUHB NHH, Gwent	257	Surgeon 5	Surgeon 2
Royal Glamorgan & C&V MDT	407	Surgeon 6	Surgeon 3

With the advent of the new Cwm Taf Morgannwg Univeristy Health Board it could be feasible that PoW, Prince Charles and Royal Glamorgan join as one MDT but for planning purposes the arrangement suggested by the Clinical Summit have been used. It will however be important that any agreed final model reflects the input of the All Wales Cancer Network and the output of their peer review programme.

As suggested also by the two clinical leads, if six surgeons were in post this would provide each surgeon with the following new cases.

<b>Lung cancer MDTs</b>	<b>Total New Cases (NLCA 2015)</b>
Surgeon 1	311 + 126 = 437
Surgeon 2	311 + 257 = 568
Surgeon 3	108 + 407 = 515
Surgeon 4	126 + 311 = 437
Surgeon 5	257 + 311 = 568
Surgeon 6	407 + 108 = 515

### **Outpatient and Pre-assessment Clinics**

The 2018/19 contract monitoring returns for the two centres for outpatient activity is as follows

#### **Cardiff & the Vale University Health Board**

New outpatients: 521

Follow Up: 1085

#### **Swansea Bay (inc Bridgend)**

New outpatients: 313

Follow Up: 616

Based on the information from other centres in England pre-assessment/outpatient clinics need to run daily and this is usually at the thoracic centre so in this case Morriston. Additionally the two clinical leads further proposed the need for clinics in the peripheral hospitals for cases identified at the MDT. The suggestion is therefore that in addition to the daily clinics in Morriston there are:

- two clinics/week in Cardiff
- one each in the other Health Board areas which could rotate around the hospitals within the Health Board. This would need to be confirmed once the implementation group have finalised their work on the service model.

### **Pre-habilitation**

It is proposed that this occurs at all hospitals but is not consultant led.

### **Operating Lists**

1 The RCS recommended that each surgeon should have at least one operating list  
2 per week. Information from the surgeons at both UHW and Morriston suggest  
3 that the most efficient way is to run a long list, essentially equivalent to 3  
4 consultant session days. Advice from both centres also suggests that around 4  
5 cases per long day is an appropriate number.

6  
7 The planned activity is around 1300 cases/ year, although it is likely to be less  
8 than this at the outset based on current figures. So for 4 cases per 3 session list  
9 = 325lists/year = 6.25 lists/week.

## 10 11 **On call**

12 The RCS report suggested a one in five on-call duty which includes weekend  
13 cover for five surgeons so it is proposed that this is a one in six for six surgeons  
14 which with prospective cover would equate to around 1 in 5.

## 15 **Major Trauma Centre**

16 The concerns about cover for the major trauma are acknowledged and it is  
17 understood that the "go live" date of April 2020 is a key driver for the urgency  
18 required in agreeing the consultant workforce configuration.

19 Advice provided by the Major Trauma Network Clinical Lead suggests that a  
20 thoracic surgeon would need to attend the MTC to deal with an emergency 3 to 8  
21 times per year.

22 Advice from the two thoracic centres varies one centre stating that they are  
23 rarely called in out of hours and the other suggesting that they are called 1 to 2  
24 times per month.

25 Should there only be one on call rota covering the thoracic surgical centre and  
26 the MTC the concern is clearly that the surgeon will be required in both places at  
27 the same time. The analysis below is based on the NCEPOD Report from 2003  
28 which carried out a comprehensive review of non-elective surgery. The analysis  
29 is based on the figures quoted in that report which are for combined  
30 cardiothoracic surgery. We have taken advice from the President of the Society  
31 of Cardiothoracic Surgeons regarding the relevance of this analysis to current  
32 clinical practice and whilst there have been some changes, including increasing  
33 use of rib fixation, it was felt that there was unlikely to be a material difference  
34 in the frequency of clinical emergencies. These figures, because they include  
35 cardiac emergencies are therefore likely to overestimate of the thoracic surgery  
36 emergency workload.

37 From this analysis, the probability of a thoracic surgery emergency and an MTC  
38 emergency arising on the same day is 1 in every 429 days.

39 The probability of this occurrence in the same hour i.e. at exactly the same time  
40 is 1 in every 6,857 days i.e. once every 18.8 years.

Calculation of Thoracic Surgery On Call Probability						
<b>NCEPOD 2003 Non Elective Surgery in the NHS</b>						
<b>Percentage of Non-elective operating</b>						
Cardiothoracic surgery	17.10%					
<b>Operating Time of Day</b>						
	Weekday 08:00 to 17:59	Weekday 18:00 to 23:59	Weekend 08:00 to 17:59	Weekend 18:00 to 23:59	Night 00:00 to 07:59	Total
Cardiothoracic (n)	120	21	13	2	9	165
Percentages	72.7%	12.7%	7.9%	1.2%	5.5%	100.0%
Total Percentage On call window	27.3%					
South Wales Thoracic Surgery total	1,100					
Non elective @17.1% based on cardiothoracic average NEL	188					
Estimated allocation to time of day	137	24	15	2	10	188
Total in on call window	51					
Probability per day of thoracic case on call	0.1397					
<b>Major Trauma Thoracic Surgery Activity</b>						
Weekend	8 per annum					
Weekday	2.3 per annum					
Weekday out of hours	5.7 per annum					
Total major trauma estimated for weekend and out of hours	3.8 per annum					
Probability per day of major trauma thoracic case on call	0.0167					
Cumulative probability of thoracic case on call and major trauma thoracic case same day	0.0023					
Estimated frequency of occurrence same day - 1 in every	429 days					
Estimated frequency of occurrence same hour (day * 16 hours) - 1 in every	6,857 days					
<b>Assumptions</b>						
1. Thoracic non elective rate equivalent to average across cardiothoracic surgery - in practice cardiac likely to be higher						
2. Assumes all cases performed by surgeon visiting on site and not by advice						
3. Both of these assumptions likely to overstate frequency of occurrence						

On this basis and given the commitment to the development of the skills of the trauma team to manage immediate thoracic trauma the likelihood of the surgeon being required to be in both centres at the same time during the night or on weekends ie when there is no surgeon on site at UHW is extremely low. It is therefore suggested that both the MTC and the thoracic surgical centre can be covered by one on call rota once the surgical centre is established.

### Required Consultant Workload Total number of Sessions/week

The following table takes all the analysis above and provides a breakdown across the activities of the number of consultant sessions required per week.

Activity	Per Week	Total sessions Per week
Theatre sessions	6.25 X 3 session lists	18.75
Pre-assessment and Outpatient clinics	Morriston daily Cardiff 2/week Glangwili/PPH (alternate weeks) Gwent/NHH (alternate weeks)	10



	PoW/PCH/RGH (1 every 3 weeks)	
MDT	6 (not full sessions)	3
On call	Intensity Payment	Intensity Payment
Travel	5 estimate	5
Ward Rounds M-F	5	5
Admin	5	5
<b>Total</b>		<b>46.75</b>

Admin and SPAs will need to be added to the above depending upon the number of surgeons.

### **Specimen Job Plan – 10.5 sessions 7.5:3 split**

Theatre 3.0

OPD/pre-assessment 1.0

MDT 0.5

Admin 1.0

Ward Round 1.0

Travel 1.0

SPA 3.0

Based on the above split then 6.2 consultants would be required.

On an 8.5 session DCC with 2 SPAs

Theatre 3.0

OPD 2.0

MDT 0.5

Admin 1.0

Ward Round 1.0

Travel 1.0

SPA 2.0

Based on the above then 5.5 consultants would be required.

We do not know the number of sessions included in the current establishment of thoracic surgeons but we do know that the Welsh average is over 10 and the average number of SPAs is less than 3.

### **Covering the MTC from April 2020**

As stated the planned go live date for the MTC is April 2020. It is not expected that the thoracic surgical centre will be established for around 2 years as capital infrastructure is required.

There is a clear level of anxiety about how the thoracic work will be covered at the MTC from April 2020 especially given that the trauma teams and the resuscitative surgeons may not be experienced in working in an MTC. Additionally the majority of work for thoracic surgeons in an MTC is rib fixations. It is suggested that similar to other centres, rib fixations can be undertaken by

1 orthopaedic surgeons. However it is recognised that this will take some time to  
2 become practice at the MTC and that thoracic surgeons are likely to be required  
3 to undertake the rib fixations in the short term.

4 Given all this the recommendation is that an additional locum thoracic surgeon is  
5 appointed at UHW for between 6 and 12 months in the first instance, to provide  
6 additional support from April 2020 and that the two thoracic consultant teams  
7 develop plans to work together. During this time where there are regular reviews  
8 of the emergency activity levels.

9 The advantage of this recommendation is that the MTC is better supported and  
10 that during the period that the locum is in place some of the assumptions in this  
11 paper can be tested especially regarding the need for a thoracic surgeon to  
12 attend the MTC in an emergency. It will also allow the thoracic surgery  
13 implementation group to complete its work on the model and will then allow a  
14 further discussion at Joint Committee on the long term model including  
15 consultant workforce when the implementation business case is presented.

16 Cost of additional locum – this is estimated to be in the order of £150,000  
17 including on-costs, travel, intensity allowance etc.

## 19 **Recommendation**

21 To note the analysis and that this would draw the conclusion that the number of  
22 thoracic consultant surgeons required for the workload is around 5.5 to 6.2 wte  
23 consultants required depending upon exact job plan and DCC/SPA split.

24 To note that the amount of operating time is the crucial driver and that for the  
25 predicted activity (outturn plus 20%) 6.25 lists will be required every week. To  
26 enable every surgeon to have one full operating list this means that around 6  
27 surgeons will be required.

28 Given the low probability of the surgeon being required to attend the MTC and  
29 the thoracic surgery centre at exactly the same time that there should be one  
30 call rota.

31 In recognition of the concerns regarding support to the MTC when it opens in  
32 April 2020 that a short term locum consultant is appointed in UHW. This will not  
33 impact on the total recommended numbers of consultants but will enable  
34 support for the MTC and to test and build confidence in the system whilst the  
35 final service model is being determined. Also that during this time the two  
36 thoracic centres develop plans to work together.

## The Liverpool Thoracic Centre Model (presented at Clinical Summit May 2019)

Information from the Liverpool thoracic centre was presented at the Clinical Summit in May 2019. It was noted at this meeting that for a population of around 2.8 million people Liverpool have

5.5 wte thoracic surgeons working on a team based approach

They operate on a hub and spoke model which supports 10 peripheral hospitals

Weekly Clinics with attendance in person by thoracic surgeon.

- All new patients travel to LHCH.

Weekly Lung MDTs:

- 4 major MDTs with direct attendance & cross cover.
- Others by VC.

- **MDTs:** High Risk cases MDT, Lung cancer MDTs and Specialist MDTs.

## Trauma support

- Trauma centre is 7 miles away.
  - Self-sufficient and independent.
- Chest trauma cases -
  - Phone Thoracic Consultants directly.
  - Thoracic Surgeons only contacted after local decision to open chest has been made.
  - Occasionally have to go to site.
  - Clinic every Thursday am. Patients seen by MS.
- Rib Fractures delt by Orthopaedic Surgeons who are now self-sufficient.

1   **Golden Jubilee Hospital Clydebank**

2   This centre covers a population of around 2.2m people. They are currently  
3   advertising for a consultant thoracic surgeon to join their team.

4   They have 4 full time thoracic surgeons + 1 mixed practice. (their current advert  
5   is for a vacancy in their full time establishment)

6   They cover 9 MDTs

7   1:4 on call with prospective cover & part of trauma team with MTC in Glasgow

8

DRAFT

1    **Addendum Following Consultation**

2    To note that surgery is not the only cure for lung cancer as there are radiotherapy techniques that  
3    are also curative but recognising that surgery has the best 5 year survival rates.

4    Clarity that the proposal, subject to fully being agreed via the implementation group, is that each  
5    MDT is supported by 2 surgeons.

6    The MDT numbers for Aneurin Bevan are not correct.

7    **Other Changes Recommended Following Consultation**

8    The locum consultant should be appointed for 12 months and not 6 to 12 months.

9

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