CENTRAL ADELAIDE LOCAL HEALTH NETWORK

Sleep Services Options Analysis

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5. SUMMARY11

1. BACKGROUND

The move to the new RAH resulted in sleep services having no overnight sleep monitored beds provided at RAH. As RAH is a Private Public Partnership (PPP), any change to infrastructure can be at a significant cost to the Government, particularly if significant infrastructure changes are required such as moving of walls and services.

Due to concerns expressed by the staff at RAH, Carramar Consulting was requested to identify and outline options for the provision of sleep services within the CALHN. Specifically, Carramar was asked to provide a short paper that outlined the current service situation and summarised service delivery options for the future. Importantly, this report does not provide recommendations as to which service option should be pursued, but is intended to inform CALHN Executive decision making in this regard.

There are four main types of sleep studies:

1. Ambulatory studies. These studies are performed at home and patients present as an outpatient to have set-up, attended to prior to sleeping at home.
2. Elective overnight and day studies. These studies are performed in an overnight facility and are for more complex patients (than those seen at home), or are for testing of different Continuous Positive Airway Pressure (CPAP) options on the patient overnight.
3. Mobile inpatient physiological monitoring. This monitoring is for current inpatients who may require a study. Of note, this may increase at TQEH, in particular with the move of Hampstead patients to TQEH or the current model of moving the patient to the sleep unit.
4. Inpatient studies. This is where the patient is a high risk patient, usually currently admitted patients with respiratory failure investigation and complex management requirements. While there is some overlap with mobile inpatient monitoring, these are the most complex patients that are admitted for other respiratory management rather than as a co-morbidity or complication of another disease.

Each of these areas overlap with each other where inpatients can be seen in an elective overnight area, as is currently done at TQEH, and elective patients can be seen in an inpatient bed if required.

Inpatient service requirements have not been analysed as part of this options review, as it has been agreed by CALHN Executive to provide two fully monitored inpatient beds yet to be enacted. This is in addition to the mobile monitoring - already in place at RAH. In addition ambulatory services are provided extensively by RAH whereas there is minimal use of this modality at TQEH. While further information in relation to the provision of ambulatory studies at each site is provided in the discussion section of this report, this report focusses on elective overnight and day studies and options for these services.

Lastly, no in-depth analysis of CPAP and Bilevel Positive Airway Pressure (BiPAP) machine funding was undertaken as part of this review. This was not in scope, and does not affect infrastructure requirements, as eligibility for machinery is determined from both medical criteria (that can be performed by any qualified clinician) and the economic circumstances of the patient. CALHN is the holder of funding for CPAP and BiPAP machines for both CALHN and Country LHNs. Only certain eligible patients receive this and the majority of funding growth in this area appears to be in Country.

1.2. Purpose of the report

The purpose of this report is to review options for elective overnight sleep services at both RAH and TQEH based on the current configuration of RAH. With the redevelopment of TQEH there may be short term and long term options for sleep services within a single service multi-site framework.

Four future service delivery options are presented as follows:

1. Option 1: Move some current CALHN services to NALHN.
2. Option 2: Provide all services at TQEH.
3. Option 3: Split services between TQEH and RAH.
4. Option 4: Outsource services.

1.3. Current Sleep Services at CALHN

1.3.1. TQEH

Currently there are 6 elective sleep beds at TQEH that are utilised Monday to Friday. In addition to the 6 patients, there is a daytime sleep study provided for 1 patient, once per week. The staffing for this area is 1xRN overnight (10 hours) plus 2 technicians overnight and other technicians during the day for reading.

Ambulatory patients are treated along with inpatients in the 6 beds. When this occurs, inpatients are transferred to the sleep beds and then transferred back the next day. A number of similar services across Australia would provide an EN rather than RN model or a full technician model with close access to RNs from other areas within the hospital, however as the sleep unit is located in the tower block of TQEH it is quite isolated from other areas in the hospital, and therefore an RN is utilised to assist with the inpatients and medications of the other patients who on average have around 5 prescription medicines. This model may be reviewed as part of the hospital redevelopment, but users believe this is the best and safest model in the current facility. Ambulatory services are utilised minimally at TQEH as the model of care is to provide as much service as possible utilising one sleep study which is provided as an elective overnight study. This means that patients who have obvious sleep apnoea are woken and trialled with different masks with a significant selection (over 100 types) available in the unit. The TQEH staff believe that due to this model of care they have both higher compliance rates and lower repeat testing than other models. The RAH however does significant home studies and did not report a problem with repeat testing or compliance. No review of the model of care for each service was performed as this would require clinical review, however it should be noted that the models are substantially different at both sites for similar casemix.

1.3.2. RAH

While previously there were 4 elective sleep beds at the old RAH, there are currently no sleep beds at the new RAH. Ambulatory sleep services are provided to home patients (with technician monitoring), and inpatient services are provided using mobile equipment to the patient beds. Equipment for 7 mobile studies are held by RAH.

As approval has already been given to provide 2 monitored beds in the RAH Thoracic inpatient unit, costs were not reviewed in relation to these beds. An additional 3 beds have been recommended by the Thoracic Department in the day medical area (3E area 2) where 3 treatment spaces are suitable for overnight studies with only power and data requirements to be changed to the rooms.

2. MEETINGS WITH STAFF

2.1. Meeting with RAH staff

A meeting was held with staff and union representatives from RAH. Staff wanted to make clear that they believe that they had been promised a sleep lab in 2010, 2016 and 2017. They believe that the business case made it clear that there were no "money problems" in relation to budget and that the Hospital would not be out of pocket in any way. They advised that there were significant advantages in having a sleep lab at RAH. The staff pointed out that as the RAH is a world class flagship hospital for the State, the sleep service should be an integral part of that.

Staff pointed out that there were linkages with the Universities and the South Australian Health and Medical Research Institute (SAHMRI) and these are critical for Ambulatory Sleep, however in their thinking it is important to not see a single item as a "game breaker". In their opinion, no hospital of a similar service scope as the RAH would be without a sleep laboratory. Staff see the service as 'cheap' and doable at the RAH in the suggested location (at the same price as other locations). RAH is also a leader of movement of elective sleep studies to ambulatory home studies and is National Association of Testing Authorities (NATA) accredited.

Overall, staff felt that elective sleep studies are an essential to an integrated model of care and should be co-located to the same site and same area.

In particular staff felt that there were 4 reasons for an on-site sleep lab:

- Maintain a Safe and efficient care for highly complex and specialised patients at the new RAH including those coming out of ICU and those in cardiac, neurology and spinal wards as well as those presenting to outpatients with complex respiratory and sleep disorders.
- Maintain the high quality training program with Royal Australasian College of Physicians (RACP) requirement for onsite sleep laboratory for both sleep and respiratory advanced physician training.

- Maintain NATA accreditation which underpins the high standards of clinical care and training program that we are nationally known for.
- Maintain access to sleep clinical trials within the network to offer patients cutting edge therapy to optimise their care and provide financial support for education and training.

After the meeting, Carramar representatives toured the proposed sleep area within the day medical unit and the Thoracic ward.

Following the meeting RAH advised that there were 73 patients on the waiting list with the caveat that there is a substantial number of patients requiring in-lab study who have not been referred for study because there is no lab yet.

2.2. Meeting with TQEH staff

A meeting was held with TQEH sleep services staff. Concern was expressed by staff at the start of the meeting that their service was to be considered for privatisation. In response, it was pointed out that there was no discussion of privatisation of their service, that this only applied to elective sleep patients at RAH, and that inpatients at RAH were also to receive sleep studies at RAH not just TQEH. Once this was accepted, discussion regarding a single service model commenced. As part of this discussion, TQEH staff wanted it made clear that they would be happy to receive patients from RAH and look at a single service multi-site model if the governance of elective sleep was under the TQEH. They would not agree to a service that utilised TQEH staff for reading and viewing of patients with RAH medical staff only providing reporting from RAH. They were happy if the RAH medical staff came to their multi-disciplinary meetings and were more part of the team at TQEH. The model of care was also discussed.

After the meeting Carramar representatives toured the TQEH sleep area and the respiratory testing areas including consulting rooms.

The following waiting lists for TQEH were provided following the meeting:

- Overnight study (non-urgent): 4 months (mid December 2018).
- Overnight Urgent (e.g. Category 1): Booked into cancellation spot - within approx. 2 weeks.
- Daytime studies: Over 12 months based on 1 study completed per week (ie one day per week).
- CPAP/ NIV Clinic: 4 months.

3. OTHER INFORMATION REVIEWED

3.1. Previous Requests/Memos / Reports Analysed

A number of reviews have previously been commissioned / performed into the sleep services in CALHN and in particular focussing on RAH. It should be noted that some of these reports are now old (e.g. respiratory-related sleep disorders postcode analysis), however they provide historical context and other than a decrease in services at RAH in the last year there have been minimal changes to patient flows.

Some of these reports and other information reviewed is summarised in the table below.

Table 1 Key Points / Summary of Information Reviewed

Report / Information Reviewed	Key Points / Summary of Information
Internal memo from Dr R Antic to Dr D Panter, dated 10/7/2010.	> Requests 4 to 8 sleep beds as part of the nRAH > Appropriate facilities throughout the hospital to allow 24 hour monitoring.
Report by Dr Nick Antic on behalf of the respiratory / sleep commissioning group, dated 16/11/14	> Moderate - severe symptomatic OSA can be managed by nurses and GPs with appropriate training such as at Noarlunga GP plus supported by Repatriation Hospital > A growth in sleep services - in particular in the North is required > Although the private sector provides some excellent services at Memorial, Ashford, Burnside and Flinders Private, there are a number of services that do not meet best practice guidelines.

Report / Information Reviewed	Key Points / Summary of Information
Professor Naughton visit to CALHN, dated 29/5/15 from visit of 22/5/15	> Support for 4 step down beds for respiratory monitoring and 4 sleep monitored beds and 4 ambulatory home monitoring units at RAH > Support for 6 sleep monitored beds with additional 6 ambulatory home monitoring > Adequate trained respiratory sleep physicians at both RAH and TQEH. > The reasoning for a dual service was: ♦ A sleep lab provides useful physiological insight into heart lung iteration ♦ Registrar training is critical for exposure to sleep medicine ♦ Management of patients with Non-invasive ventilation (NIV) requires a sleep lab to optimise management ♦ A sleep lab is integral to making a correct diagnosis in acute and chronic disease management.
Respiratory-related sleep disorders postcode analysis by Deidre Kinchington, dated 31/1/17	> 39% of CALHN sleep patients were from NALHN > 19% of CALHN sleep patients were from Country Health > 3% of CALHN sleep patients were from SALHN > 19% of SALHN sleep patients were from CALHN in 2014/15 > A significant proportion of patients from NAHLN were seen at CALHN - this was higher than the number from CALHN itself.
Letter from Dr Aeneas Yeo to Jenny Richter, dated 31/7/2017	> Reaffirms the requirement from Professor Naughton for 4 bed unit. > Acute / subacute/ unstable patients to be seen at RAH and chronic / stable patients to be seen at TQEH to allow for a single service multiple site model for Respiratory failure and sleep care across CALHN.
Notes from TQEH Respiratory Meeting, dated 6/9/2017	Notes suggested: > Development of overnight elective sleep to accommodate demand from RAH and TQEH. > Collaborative working arrangements (one integrated service between TQEH and RAH technicians for learning and development.
Proposal to develop RAH sleep and Respiratory failure investigational services, dated January 2018	> Elective Overnight and day studies are suggested to be located in the Medical Day Treatment Unit (MDTU) utilising 3 beds and running 4 nights per week with consideration of 5 nights depending on demand. > Inpatient sleep studies are suggested to be provided from 2 beds in wing 8E2 but not specifically quarantined. > Patients are currently being waitlisted at RAH - at the time 60 patients. > The department would continue to work collaboratively to develop a CALHN-wide model of care.

The ASA/NATA standard for sleep disorders service was reviewed and a summary report of this was reviewed.

The Referral and Diagnosis of Obstructive Sleep Apnoea in Adults Policy Guideline - SA Health was reviewed.

3.2. Comparisons with Other States

A review of information from interstate hospitals was undertaken. Due to similar population levels in Adelaide with Perth and Brisbane (than Sydney and Melbourne), services from these locations were reviewed.

3.2.1. Brisbane

> The Princess Alexandra Hospital provides the main public service to the Metro South Hospital and Health Service. This is provided with 6 beds. The service is staffed with 2 technicians and 1 RN overnight. Mater Public provide 6 studies per week to assist with backlog waiting lists in Metro South. These studies are performed in the paediatric sleep unit on 2 days per week. The total catchment population for the equivalent of 7 beds is 1,087,000 plus some additional for the tertiary nature of the service.

- The Prince Charles and Royal Brisbane and Women's Hospitals provide public services to the Metro North Hospital and Health Service. The Prince Charles Hospital has 6 beds with 2 technicians and an RN overnight. The Royal Brisbane and Women's Hospital has 4 beds with either a technician or EN, or 2 technicians overnight, with RN support closely available. The total catchment population for the 10 beds is 957,000 plus some additional for the tertiary nature of the service.

3.2.2. Perth

- Royal Perth Hospital does not provide a service. This was moved to Fiona Stanley as part of the move to centralise tertiary services to Fiona Stanley where possible.
- Fiona Stanley has 6 beds servicing a base population of 630,000 within the catchment, but also provides services to other catchments due to the tertiary nature of the service.

3.2.3. CALHN and NALHN Catchment Pop

The current catchment of CALHN is 460,000 and NALHN is 395,000. In comparison to the Brisbane and Perth catchments a total public elective sleep bed benchmark of between 6 and 9 beds would be reasonable for CALHN and NALHN combined and less than 6 beds for CALHN only.

3.3. Staffing Requirements

Across Australia the NATA accreditation requirements are generally used to identify staffing requirements. The NATA accreditation requirements advise the following in relation to staffing:

- "In a freestanding service (i.e. a laboratory located away from a hospital that has emergency back-up), two (2) staff trained in emergency procedures should be in attendance for the duration of the study to ensure safety and security of patients and staff"

In addition:

- “Technical staff must be in attendance throughout the study”. Short absences from the site (e.g. toilet breaks taken away from the laboratory) during a routine diagnostic or CPAP titration study may be covered by staff who have limited technical expertise in sleep studies but nevertheless are able to attend to the needs of the patient and are trained in emergency procedures. More prolonged absences from the site (e.g. meal breaks), or short absences during complex studies (e.g. NIV trials), should be covered by other technical staff."

Finally:

- "Adequate staff time must be allowed for preparation of the patient, data collection and analysis:
  - In an adult service, at least 45 minutes for the preparation of each patient prior to study, an hour for completion of duties following termination of the study
  - in general, a ratio of no less than one (1) technologist to three (3) patients overnight; and an average of at least two (2) hours analysis must be allowed for each study."

Therefore any increase in a current service would require around 1 staff for 3 additional patients whereas a new 3 patient stand-alone unit would require 2 staff present overnight with access to relief.

3.4. Revenue Received

Elective overnight sleep study patients are not admitted but treated as outpatients. For this reason, there is no outpatient casemix payment for sleep studies. Revenue is therefore created using Rights of Private Practice (ROPP). As part of the ROPP scheme in SA, the majority of total ROPP revenue is either provided to the Consultant or to Equipment Trust Funds, with some administrative funding provided as part of this arrangement.

Consequently, revenue was not analysed as part of this review as the offset is minimal and is utilised to collect the ROPP. Revenue is received from outpatient appointments, however this was also not reviewed as it was considered that outpatients would still be seen at the base service in any model, and the patient would subsequently be seen or transferred for the elective sleep study only.

There is no contribution from ROPP earnings to offset the cost of this service and no casemix revenue.

3.5. Costs Reviewed

Although costs and budget were provided and reviewed at both TQEH and RAH, this review is focussing on elective sleep beds only. Therefore costs presented are at the variable level only. Costs were obtained from historic information converted to required FTE, and overheads were not included in the variable costs. Variable costs utilised were $95,000 for technician / scientist (1FTE) overnight and $56,000 per enrolled nurse (1FTE) overnight.

The January 2018 proposal for RAH sleep beds included the inpatient unit in a combined proposal. The proposal also compared previous year's budget for the total services with the current year but did not review revenue to cost or show variable cost of the new service.

There was no cost shown for medical staff in the proposal and the proposal also was not consistent in variable costs to the staff requirements. As the cost were not consistent and variable costs were not provided in the proposal, it has been used to obtain FFE and capital costs only. The capital costs were obtained from very high level estimates and may have changed since that time.

A focus on the costing for this paper is therefore limited to variable staffing costs and capital costs and a comparison between the models. The focus of the report is on advantages and disadvantages of each model which includes an analysis of the variable cost of each model.

4. OPTIONS ANALYSIS

4.1. Option 1 - Move Services to NALHN

4.1.1. Background

A meeting was held with the Chief Operating Officer (COO) of the NALHN - Mr Scott McMullen. Scott advised that although having a sleep service was not the number one priority, it was in the top 10 priorities for the NALHN. A number of reasons were provided to start a service. One was that NALHN has difficulty recruiting to Respiratory Registrar positions as only one year training can be provided without sleep services. As a consequence, NALHN has difficulty in attracting and retaining respiratory physicians and other staff. Another was that NALHN residents have limited access to sleep services presently as there are no public or private option in the LHN

Due to the lack of infrastructure within the Lyell McEwin Hospital (LMH), the preferred model for NALHN would be to be separately commission for the provision of a sleep service. NALHN would then take the accountability and responsibility to ensure contestable, efficient, equitable and accessible service is provided for people whom live in the north and north east.

4.1.2. Cost Benefit

A detailed cost could not be calculated at this stage due to the partial outsourced nature of this service. Although there would be no cost to CALHN, the cost to the system as a whole for a 3 bed unit would be the cost of the rental of the beds (estimated at around $100,000 per annum) plus technical and medical staff. A detailed costing has not been performed as this would be part of the Business Case for NALHN.

From review of the overall cost / benefits at TQEH and RAH it is unlikely to be cost beneficial due to the funding source being predominantly ROPP funds (although there would be an increase in revenue from outpatients).

Costs and revenue were therefore not reviewed but would be the subject of a full Business Case for NALHN.

4.1.3. Advantages

The following advantages for this option were identified:

> There would be a significant decrease in demand on CALHN facilities. At this stage around 40% of the demand for services at TQEH and RAH are from NALHN patients. Based on other services around Australia, between 3 and 6 beds would be required for the catchment of CALHN only so no additional CALHN beds from those currently supplied would be required.

- Higher risk patients from NALHN could be allocated to the best facility for their requirements and closest to their home. Some higher risk patients may be required to be seen in CALHN in the short term in particular until skills were increased.
- This model would allow a slow ramp up of services in NALHN. The service could be started as a one night per week outreach service from RAH or TQEH expanding in the future to a full 4 or 5 night service.

4.1.4. Disadvantages

The following disadvantages for this option were identified:

- As there is no ability to expand the service within the current LMH footprint a separately commissioned arrangement is required to open a service in NALHN. Implementation would be expected to take around 2 years by the time a provider is available to provide services for NALHN.
- A NALHN business case may not be justified without direct government funding as both RAH and TQEH current models show a loss as the outpatient revenue is not sufficient to cover costs, and any additional revenue generated contributes to the ROPP.

4.2. Option 2 - All Services at TQEH

Three options exist for a service at TQEH.

a. Add patients from RAH to the current TQEH waitlist and increase the service to a 6 day service to decrease the waitlist

b. add 3 beds to the current service and

c. Reduce activity undertaken by both the RAH and TQEH sleep services to align with commissioned activity - all overnight services would be undertaken at TQEH for both RAH and TQEH sleep services.

For the additional beds, an additional three beds have been identified as the requirement as this would be the most cost effective number from a recurrent cost point of view with a patient staff ratio of 1 technician to 3 patients. A ramp up of service could occur with initially adding to the waitlist while capital infrastructure costs are finalised, then a service started for 1 or 2 days per week and increasing to 4 days per week if required from a waitlist perspective.

For a 6 day service 3 additional staff for one additional night have been added to allow for an additional 6 patients per week. With current RAH waiting lists, this would take 10 to 15 weeks to clear the backlog.

4.2.2. Cost Benefit

Table 2 Costs for Option 2a: All Services at TQEH with additional days

Cost Type	Cost	Comment
Capital - Infrastructure	$0	Estimate based on $50,000 per bed. Rooms are closely adjacent that could be utilised but may need some additional infrastructure other than power and data.
Capital - FFE	$0	Based on the same FFE as RAH business case.
Recurrent Staffing costs	$85,500	2 technicians and 1 RN overnight for 1 night. A multiplier of 1.5 has been used over the base cost rates to allow for Saturday / Sunday rates
Recurrent Other	$5,000	Cleaning and portering should remain within current staffing levels due to the minimal increase. Some cost of Linen, meals etc.
Total year 1	$90,500	
Total Recurrent	$90,500	Excluding equipment and FFE re-purchase

Table 3 Costs for Option 2b: All Services at TQEH with 3 extra beds

Cost Type	Cost	Comment
Capital - Infrastructure	$150,000	Estimate based on $50,000 per bed. Rooms are closely adjacent that could be utilised but may need some additional infrastructure other than power and data.
Capital - FFE	$123,980	Based on the same FFE as RAH business case.
Recurrent Staffing costs	$95,000	1 technician overnight. May require slightly more than this at the start of the night but requires further investigation
Recurrent Other	$10,000	Cleaning and portering should remain within current staffing levels due to the minimal increase. Some cost of Linen, meals etc.
Total year 1	$373,980	
Total Recurrent	$105,000	Excluding equipment and FFE re-purchase

No cost analysis of option 2c was performed as there would be no cost increase from the current base. Some efficiencies may be gained over time from a combined service but these have not been quantified.

4.2.3. Advantages

The following advantages for this option were identified:

- Ramp up of the service could occur over time with additional beds or a trial of a shared service with RAH at 2 nights per week or 3 nights each service.
- Closer relationships and moving to a single service multi-site option could be realised.
- RAH could become the centre of excellence for ambulatory studies and TQEH the centre of excellence for elective overnight studies.
- As a single service multi-site model of care, patients would be provided the best service at the best location for their acuity.
- This would be cheaper than option 3 from a recurrent funding point of view. The cheapest option is the provision of additional night on Saturday or Sunday.
- Learning from both sites may result in a shared model of care with more TQEH patients being provided ambulatory home studies which would decrease waiting lists at both sites.
- If a shared registrar and shared trials model were utilised with inpatients still being treated at RAH, the 4 requirements for a split service from the Naughton report would be met (see table 1).
- Day studies would continue to be performed at TQEH and could also be increased in numbers of days provided to decrease the waiting list.
- TQEH can be seen as a shared facility with core support staff that run the unit to support the referring clinicians.

4.2.4. Disadvantages

The following disadvantages for this option were identified:

- Staff at TQEH have made it clear that a shared service would need to be under their governance. This may cause issues with the patients being referred from the RAH although a split governance depending on the night of the week could be considered as a starting point.
- Staff at RAH believe it is critical they also have an elective overnight area to meet model of care requirements.
- There would be significant change management requirements with a shared model of care due to the lack of interaction between staff at both sites (both technician and medical staff).

- Due to the lack of interaction between the staff at both sites a split training position and integrated clinical trials across the sites may be difficult to obtain in the short term.
- The staff have advised if a service is not provided at RAH they may further their cause in the industrial and political spheres.

4.3. Option 3 - Split Service

To provide a split service would require the development of a 3 bed unit at RAH. The new 3 bed unit would be created within the Day Medical area and a proposal to run the service 4 days per week was provided to the Executive.

4.3.1. Cost Benefit

The recurrent cost of the new service is 1 technician 4 nights per week, 1 part time technician at 2.5 hours per day and 1 EN 4 nights per week to run a 4 day service. It is expected that there would be no increase in medical or clerical staff to cover this service. It would also be expected that all patients would have received an outpatient appointment already, so there would be no change to the revenue expected for outpatients.

As noted previously, revenue is not included in the below table due to the ROPP income not being used to support the service.

Table 4 Costs for Option 3: Split Service

Cost Type	Cost	Comment
Capital - Infrastructure	$48,000	Based on Business Case information (this would need to be validated).
Capital - FFE	$123,980	Based on Business Case information.
Recurrent Staffing costs	$179,500	1 EN and 1.3 technician overnight.
Recurrent Other	$27,600	Increase in cost to PPP provider for equipment movement, estimate outsource cost.
Total year 1	$379,080	
Total recurrent	$207,100	Excluding equipment and FFE re-purchase

4.3.2. Advantages

The following advantages for this option were identified:

- A service would be provided at both CALHN sites meaning that staff would support the option.
- Staff at RAH would support this option, as it aligns with their belief that there were previous promises made to provide a service from RAH, and that having a sleep service is in keeping with the tertiary-level service capability of the RAH.
- All requirements of the Naughton Report would be met as would all requirements of the RAH staff.

4.3.3. Disadvantages

The following disadvantages for this option were identified:

- There is a risk that no further Integration between TQEH and RAH would occur.
- Duplication of services at the two hospitals would continue into the foreseeable future as the 3 beds at RAH would not support both services
- There would be a higher recurrent cost than provision of services by either a private provider in the short term, or from TQEH longer term.
- There are safety and quality risks in the ambulatory area around space, day time studies and storage of consumables and masks. This may impact on the service's ability to meet accreditation requirements for RAH.

- Due to the risks mentioned above the staff may see this as a temporary solution and would want a significant capital investment in RAH in the near future to meet storage and other requirements

4.4. Option 4 - Outsource Services

Three hospitals within CALHN catchment have been mentioned in previous reports as providing high level services for sleep in the private sector. These are Burnside, Memorial and Ashford. Flinders Private was not investigated as it is not within the CALHN area.

Services are being moved to ambulatory home services in the private sector as no hospital fee is required for those patients without health insurance. In addition, many patients in the private sector are lower risk so the patient type is more suited to ambulatory home studies.

The three private hospitals mentioned were contacted. Ashford no longer do elective studies, Memorial only now do elective studies on paediatric patients and Burnside Hospital provides 6 elective beds.

The 6 Burnside elective beds are being utilised 5 to 6 nights per week for private patients This means additional capacity is limited and would be at a higher price as most likely be at a weekend rate.. Burnside have 2 technicians overnight with a further technician coming in to assist at the start of the night. Nursing staff are from the ward and come when called or once per night to check on any medications or other requirements. This service would therefore meet NATA requirements for staffing. Burnside advised of limited capacity to outsource at present.

4.4.1. Cost Benefit

Being a fully variable service the cost is per patient or 3 or 6 beds could be purchased one day per week. A number of options exist from a governance and operational point of view from a fully outsourced model where the service would provide reading and reporting to a partial model where the facility and technical staff are from the private hospital and the reading is performed by the public physicians. Compared to 6 beds per week being utilised at TQEH this option for 6 patients per week would be less cost effective in the long run.

Table 5 Costs for Option 4: Outsource Services

Cost Type	Cost	Comment
Cost per night	$600 per night	Depends on operational model and the number of beds purchased. A single bed variable cost would be higher than a bulk purchase of beds. An estimate of $600 has been used as a conservative estimate of short term outsourcing

4.4.2. Advantages

The following advantages for this option were identified:

- All services could be performed on a variable basis and could be utilised in the short term with a medical model allowing the physicians to continue to collect ROPP payments.
- Physicians would read the studies provided at Burnside and any patients that could not be seen at TQEH or RAH as either ambulatory, elective or inpatients could be referred to Burnside for urgent ambulatory services.

4.4.3. Disadvantages

The following disadvantages for this option were identified:

- In the longer term cost would be higher than an insourced service for a large number of patients.
- Would not satisfy the requirements of RAH to have an on-site service.

5. SUMMARY

Carramar Consulting was requested to review options for elective overnight sleep studies at the Royal Adelaide Hospital (RAH).

Four options for elective sleep studies at RAH have been reviewed by Carramar with advantages and disadvantages of each being identified. The options and a summary of the advantages and disadvantages are provided below. Due to the underlying reluctance of the two services at RAH and TQEH to work collaboratively together, this needs to be addressed before the decision to move to a particular model is considered.

1. Option 1: Move some current CALHN services to the Northern Adelaide Local Health Network (NALHN).

   This option would decrease the Central Adelaide Local Health Network (CALHN) waitlist and enable a single service model to easily be achieved with 6 beds at the Queen Elizabeth Hospital (TQEH) (benchmarked on other public service provision in WA and QLD) but may take some time to implement. This would be a suitable long term solution to allow TQEH to redevelop only 6 beds on site for stage 3 redevelopment.

2. Option 2: Provide all services at TQEH.

   This option would provide the most cost effective long term solution for CALHN as a whole and enable differing (ambulatory vs elective overnight) centres of excellence across both sites. This option also allows an option to reduce waiting lists in the short term and a shared governance depending on the night of week. TQEH could be seen as a shared facility with core support staff that run the unit to support the referring clinicians. It should be noted that staff from RAH have indicated a sincere desire for this option not to be pursued and staff at TQEH have advised all elective sleep studies performed there would need to be under their governance so there would be change management requirements for both services.

3. Option 3: Split services between TQEH and RAH.

   This option is less cost effective than a single service model at TQEH and duplicates services but will satisfy the staff at RAH and TQEH. The area being targeted at RAH for overnight elective studies will present problems with storage and other issues.

4. Option 4: Outsource services.

   This option will assist with patient waitlists in the short term but does not meet the long term requirements of the staff at RAH or provide a longer term solution. Long term this solution would be a more expensive model than an on-site model at TQEH.

Consultation Paper

Sleep Services
Central Adelaide Local Health Network

December 2018

19 December 2018

Government of South Australia
SA Health

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1. Introduction

Central Adelaide Local Health Network (CALHN) covers central, western and eastern suburbs of metropolitan Adelaide, serving a community of over 466,000 people.

CALHN has an annual budget of over $2 billion and is a large, multi-site organisation with a workforce of over 13,000 staff. It encompasses four hospitals; the Royal Adelaide Hospital (RAH) as a major tertiary facility, The Queen Elizabeth Hospital (TQEH) as a general hospital, and rehabilitation hospitals Hampstead Rehabilitation Centre (HRC) and St Margaret's Hospital (SMH) and a significant number of mental health and primary health care services.

CALHN also governs a number of state-wide services including Glenside Mental Health Services, SA Dental Service (SADS), SA Prison Health Service (SAPHS), SA Cancer Service (SACS), Breast Screen SA (BSSA), Donate Life SA (DLSA), and State-wide Clinical Support Services incorporating SA Pathology, SA Medical Imaging and SA Pharmacy.

CALHN is committed to the delivery of quality and sustainable healthcare to ensure we provide integrated, respectful and safe patient centred service to our diverse communities.

This document outlines the proposed direction for the provision of elective overnight Sleep Studies across the CALHN.

2. Background

Sleep studies can be undertaken using a variety of modalities:

1. Ambulatory studies: These studies are for less complex patients and are undertaken at home. Patients present as an outpatient to have set-up attended to prior to sleeping at home. This service is currently provided at both RAH and TQEH.

2. Elective overnight and day studies: These studies are undertaken in an overnight facility and are for more complex patients, or where testing of different Continuous Positive Airway Pressure (CPAP) options is required on the patient overnight. This service is currently provided only at TQEH.

3. Mobile inpatient physiological monitoring: Mobile monitoring is undertaken in the ward environment for current inpatients who require a sleep study. This is available at TQEH and RAH.

4. Inpatient studies: This is for high-risk patients, usually those with respiratory failure requiring investigation and complex management. While there is some overlap with mobile inpatient monitoring, these are the most complex patients admitted for respiratory management rather than as a co-morbidity or complication of another disease, this is currently available at TQEH.

CALHN provides Sleep Services at both TQEH and RAH. Section 4.2 details the types and numbers of Sleep Services currently undertaken by each service.

The RAH Sleep Service has been unable to undertake elective overnight sleep studies since the move to the new RAH as dedicated overnight sleep monitored beds were not

planned for the RAH.

This has implications for the treatment of more complex patients, or for when testing of different Continuous Positive Airway Pressure (CPAP) options on the patient overnight are indicated. Concerns have also been raised by the RAH Sleep Service about the impact on training requirements for Sleep and Respiratory Advanced Trainees, and the ability of this service to undertake sleep clinical trials.

Carramar Consulting were engaged to identify and outline options for the provision of elective overnight sleep services across CALHN. An Options Paper was developed that outlines the current service situation, and future elective overnight and day sleep study service delivery options (see Attachment 1).

Four future service delivery options were identified as follows:

- Option 1: Move some current CALHN services to NALHN
- Option 2: Provide all services at TQEH
- Option 3: Split services between TQEH and RAH
- Option 4: Outsource services

3. Purpose

This consultation paper has been prepared as a means to appropriately inform and seek feedback from in-scope staff and the relevant unions about:

- the proposed option for delivering elective overnight and day sleep studies across CALHN; and
- options for the operationalization of the service.

4. Current State

4.1 Model of Care

The Sleep Study models of care differ between the RAH and TQEH. Ambulatory Services are provided extensively by the RAH Sleep Service, whereas whilst the service is available at TQEH there is minimal use of this modality at TQEH.

TQEH has access to 6 elective beds in the Sleep Unit that are utilised Monday to Friday for overnight studies, with the ability to undertake one daytime study per week. One bed per night at TQEH Sleep Unit may be utilised for in-patients requiring Sleep Studies, with approximately 75-100 studies undertaken for this patient cohort per year.

TQEH Sleep Unit has the capacity for 1380 overnight sleep studies to be undertaken per year, based on full utilisation of six beds, Monday to Friday, over 46 weeks.

The RAH Sleep Service has the capacity to undertake up to 1104 Ambulatory Studies per year, based on 6 studies per night, Monday to Thursday, over 46 weeks.

It is noted that CALHN provides Sleep Services for patients living in NALHN and in Country areas, with the RAH Sleep Service largely being responsible for undertaking the Country activity.

Medicare guidelines for Sleep Studies now require patients to be reviewed by an accredited Consultant prior to the Sleep Study to ensure appropriateness for this service. Pre study reviews and post study follow up are undertaken by Consultants in

CALHN OPD Clinics, or by specialists external to CALHN, either in other Local Health Networks (LHNs) or in Private Practice.

4.2 CALHN Sleep Study Activity 2016-17 and 2017-18

Table 1 below details the number and type of sleep studies undertaken across CALHN for 2016-17 and 2017-18.

	Sleep Study Activity across CALHN			
Service Type	RAH		TQEH	
	2016-17	2017-18	2016-17	2017-18
In-lab Overnight Sleep Studies - outpatients	680	129*	933	935
In-lab Overnight Sleep Studies - inpatients	Nil****	Nil	28	19
Day time In-lab Studies	56	15*	Included in in-lab overnight numbers	
Mobile In-Patient Studies	7	44**	Nil	Nil
Ambulatory Home Studies - Metropolitan	68	497***	Not available	17
Ambulatory Home Studies - Country	520	409	Nil	Nil
Total	**1331**	**1094**	**961**	**971**

* In-lab studies were only available prior to move to nRAH

** Increase in mobile inpatient studies is reflective of change of MOC post move to the nRAH for patients requiring Sleep Studies who were unable to be managed in an in-home setting

*** Denotes change to Ambulatory Model of Care following move to nRAH

**** Inpatients referred for sleep studies during current episode of care

4.3 Current Workforce Profile

Table 2 below details the current workforce profile that supports the RAH Sleep Service and associated costs.

Sleep Services workforce - RAH			
Discipline	**Classification**	**FTE**	**TOTAL COST (including 21.5% on costs)**
Nursing	EN	1.51	112,061.28
	RN01	0.4	42,792.31
	RN2	0.4	46,309.48
	RN3	0.1	13,702.53
Scientist	MES4	0.2	29,685.61
	MES3	0.67	83,436.87
	MES2	0.63	62,270.89
	MES1	1.16	103,665.09
Sleep Technician	TGO1	0.26	16,252.69
			510,176.75

Table 3 below details the current workforce profile that supports TQEH Sleep Service and the associated costs.

Sleep Services workforce - TQEH			
Discipline	**Classification**	**FTE**	**TOTAL COST (including 21.5% on costs)**
Nursing	RN01	1.31	136,076.00
	RN2	0.57	63,349.00
Senior Scientist	MES4	0.5	74,214.02
Sleep Technician	TGO1	1.28	79,836.19
Senior Sleep Technician	TGO2	2.52	225,844.49
Sleep Laboratory Manager	TGO3	2	199,053.46
Admin	ASO2	0.53	37,351.03
			815,724.19

Note: Medical FTE associated with Sleep Services has not been included in these costings as it is recognised that these clinicians work across all areas of the Respiratory Service, including in-patient and outpatient services.

4.4 Commissioned Activity and Funding

The commissioned **activity** target for sleep disorders includes the clinic consults, but not the sleep studies. Commissioned **funding** attached to the sleep disorder consults is intended to include an element of funding for the clinical measurement aspect (i.e. studies).

The cost of clinic consults exceeds the amount of activity-based funding generated for this activity through Casemix, therefore the sleep study component represents an entirely unfunded cost pressure for CALHN.

Additional revenue is generated through bulk billing; however, this is almost entirely retained by the medical specialists through Rights of Private Practice arrangements. Note: for up to 40% of patients receiving Sleep Studies at both the RAH and TQEH, there is no evidence of a corresponding clinic consult in CALHN.

4.5 Cost vs Revenue Analysis:

Table 4 below details the total costs associated with providing CALHN Sleep Services.

CALHN Sleep Services Actual Costings 2017-18				
Site	**Workforce**	**Goods & services**	**Corporate Overhead* (15%)**	**Total costs**
RAH	$510,176.75	$501,460.00	$151,745.50	$1,163,382.25
TQEH	$815,724.19	$166,041.00	$147,264.80	$1,129,030.00
Total costs to provide the Sleep Service				**$2,292,412.25**

Note: RAH activity and costs include those associated with providing a service (including goods and services) to Country patients.

*Corporate overhead costs are attributed to all services and need to be taken into consideration (e.g. ICT, electrical, depreciation)

Table 5 details the total costs of providing the CALHN Sleep Services versus the revenue.

Table 5	CALHN Sleep Services Cost vs Revenue Analysis 2017-18		
Site	**Total Revenue for actual activity**	**Cost to CALHN in providing service**	**Net Loss**
RAH	$545,270.00	$1,163,382.25	$618,112.25
TQEH	$483,040.00	$1,129,030.00	$645,990.00
Total	**$1,028,310.00**	**$2,292,412.25**	**$1,264,102.25**

Note: There are inconsistencies in the way that revenue is generated by each of the Sleep Services due to different models of care and Tier 2 code allocation. The implementation of a CALHN wide Sleep Service presents as an opportunity to resolve these inconsistencies.

5. Rationale for Change

The following are key factors that were considered in determining the delivery option for the provision of elective overnight and day sleep services across CALHN:

Patient Care:
Currently elective in-lab overnight Sleep Studies are not available for more complex patients under the care of the RAH Sleep Service.

Economic:
In the current economic climate, CALHN is in a financial position where it needs to be particularly careful in committing to unplanned capital works, or supporting an increase in costs associated with furniture, fittings and equipment (FFE) or FTE.

In addition to this, service delivery must be considered in the context of:

- an agreed activity level in accordance with available funding,
- revenue generated by the service and,
- the cost of delivering the service.

Services must be delivered where possible, within existing facilities, and with no cost pressures.

Additional considerations:

- Training requirements:
  The RAH is currently unable to meet all the training requirements for both Sleep and Respiratory Advanced Physician Trainees due to lack of access to in-lab sleep study testing.

  Similar concerns have been raised by TQEH Respiratory Advanced Physician Trainees, due to limited access to training opportunities within other medical specialty areas at TQEH.

- Clinical Trials:
  Access to in-lab studies is required to support Sleep Clinical Trials across CALHN

In summary:

1. CALHN is not in a financial position to support new capital works, FFE, or FTE
2. Elective overnight Sleep Studies can only be provided at one site
3. Activity should be undertaken within agreed activity levels
4. Workforce profiles need to reflect agreed activity levels
5. An integrated trainee medical staff training program across both sites needs to be established before February

6. Proposed option for delivering elective In-lab overnight and day sleep studies across CALHN

Based on the information provided in the Carramar, CALHN Sleep Services Options Analysis Paper (Attachment 1), and considering the aforementioned considerations, the proposed option to support the delivery of elective overnight sleep studies across CALHN is:

Option 2c: All overnight and day sleep studies at TQEH – Streamline activity undertaken by both the RAH and TQEH sleep services to align with commissioned activity

While both the RAH and TQEH will continue to provide Sleep Services, it is proposed that overnight and day sleep studies will be undertaken at TQEH Sleep Unit as a shared facility. TQEH Sleep Unit has the capacity for 1380 overnight sleep studies per year (based on full utilisation of 6 beds, Monday to Friday, over 46 weeks).

Given that there has been a significant shift for RAH Sleep Services to predominantly use the Ambulatory model of care, and that the current RAH waitlist for In-lab

Overnight Sleep Studies is approximately 95 patients, it is expected that there will be sufficient capacity in TQEH Sleep Unit to manage the demand for elective overnight sleep studies from both the RAH and TQEH Sleep Services.

6.1 Benefits of the proposed service delivery option

- Provides the RAH Sleep Service with access to in-lab sleep studies, with only the technical component of the service delivered off-site.
- No new infrastructure costs and no additional recurring costs.
- No impact on RAH status as a leader of movement of elective sleep studies to ambulatory home studies and National Association of Testing Authorities (NATA) accreditation.
- Ensures access to sleep clinical trials within the network

6.2 Implications for not undertaking the change

- No access to in-lab elective overnight sleep studies for the RAH Sleep Service patient cohort. This will require a collaborative and integrated approach between TQEH and RAH Sleep Service.

6.3 Operationalisation of the Proposed Service Delivery Option

This consultation paper proposes two options to support the operationalisation of undertaking all overnight and day in-lab sleep studies at TQEH for staff to consider:

Option A:
RAH and TQEH Sleep services to have access to TQEH Sleep Unit on designated days of the week:

- TQEH Sleep Service to have access to 6 beds, 4 nights per week
- RAH Sleep Service to have access to 6 beds, 1 night per week

Sleep Unit to be staffed in the following way:

Core team of Nurses / Technicians / Scientists / Administration established to support the Sleep Unit:

- Each site will have clinical responsibility for their patients, including reading and reporting.
- There will be no change to current outpatient appointment processes pre and post sleep study.
- There will be no change to the current model of care for ambulatory or in-patient studies at each site.
- Governance of TQEH Sleep Unit and associated Sleep Unit staff will be provided by TQEH Sleep Service but clinical responsibility for individual patients will remain with the referring medical teams.

Option B:
Sleep studies for patients requiring in-lab Sleep Studies, based on level of complexity, will be undertaken at TQEH regardless of referring Specialist, and Sleep Studies for patients with lower levels of complexity that can be managed in an Ambulatory Setting, will be undertaken by the RAH Sleep Service.

A team of Scientists, Technicians, Administrative and Nursing staff will support both in-lab and Ambulatory Services. There is an opportunity to establish rotational positions

for these roles to ensure that these staffing cohorts develop the skills to manage patients with varying levels of complexity using different methods of service delivery.

The referring Consultant will have clinical responsibility for their patients, including reporting.

6.4 Agreed Activity

There will be an expectation that each site will manage their patient waitlist within agreed activity levels in accordance with available funding using established OPD waitlist principles.

6.5 Cost Analysis

There are opportunities for reducing cost pressures associated with delivering Sleep Studies based on model of care (ambulatory vs overnight studies), review of CPAP/BiPAP Costs, and alignment in activity to agreed levels in accordance with available funding.

6.6 Other Considerations

- Progressive establishment of 2 monitored beds within existing RAH Respiratory in-patient location to support Sleep Studies for in-patients - further consideration is required to determine if these will be attended vs unattended studies.
- Establishment of rotational Advanced Trainee Positions across the RAH and TQEH to meet the Royal Australasian College of Physicians (RACP) training requirements for both the RAH and TQEH Sleep and Respiratory Advanced Physician Trainees. Endorsement required by the College.
- TQEH working towards National Association of Testing Authorities, Australia (NATA) accreditation
- Agreed eligibility criteria to be developed for determining Sleep Study type (in-lab versus Ambulatory) and level of urgency, with transparent waitlist management to ensure equity of access for both in-lab and Ambulatory Sleep Studies.
- Establishment of consistent rules for capturing activity across CALHN
- Establishment of consistent IT systems

7. Consultation Process

We appreciate and understand that these matters have been considered for some time and staff are keen to reach resolution. CALHN recognises the importance of consultation and is committed to genuine discussion and feedback.

Distribution of this consultation paper signals the commencement of the consultation process related to this proposal.

7.1 Impact on Workforce

The future workforce profile will be determined once the service delivery option has been confirmed, and the activity mix of ambulatory vs overnight sleep studies based on agreed activity levels has been established

7.2 Feedback

Feedback can be provided via survey monkey at:

https://www.surveymonkey.com/r/RR7ZYQF

Given the Christmas / New Year period, we have opened feedback for a full month. Employees and stakeholders are welcome to send through feedback any time between now and close of business **21 January 2019** via the methods outlined above.

CALHN will continue to keep staff informed of the progress throughout this process.

As part of the consultation process a copy of this paper has been provided to employee association bodies, including the South Australian Salaried Medical Officers Association, Australian Nursing and Midwifery Federation (SA Branch), Public Service Association, Health Services Union, and Professionals Australia. A representative from these employee associations are welcome to attend the information sessions if they wish.