Evaluating nurse endoscopist advanced practice roles in a South Australia metropolitan health service

Final Evaluation Report
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Acronyms

ADR – Adenoma detection rate
APNE – Advance Practice Nurse Endoscopist
CAHLN – Central Adelaide Local Health Network
CCRTGE – Conjoint Committee for the Recognition of Training in Gastrointestinal Endoscopy
FOBT – Faecal Occult Blood Test
GESA – Gastroenterological Society of Australia
HREC – Human Research Ethics Committee
ITeMS – Integrated Training e-Management System
KPI – Key Performance Indicator
NAHLN – Northern Adelaide Local Health Network
NBCSP – National Bowel Cancer Screening Program
OR – Operating Room
ORMIS – Operating Room Management Information System
PROVATION – Endoscopic reporting software, ‘database’ – ProVation MD
SETC - State Endoscopy Training Centre
TQEH – The Queen Elizabeth Hospital
UK – United Kingdom
USA – United States of America
Executive Summary

Background
In light of the impending demand on endoscopic services in SA Health, a new initiative was embarked upon by SA Health. This initiative introduced an Advanced Practice Nurse Endoscopist Model of Care. The pilot study focused on three nursing positions in one of the major metropolitan acute care health services, The Queen Elizabeth Hospital (TQEH) that commenced July 2017 and finished end of June 2018.

Following ethics approval, this evaluation was conducted as part of the project implementation plan.

Methods
A broad evaluation framework developed by the Centre for Health Service Development (Thompson, Williams, Morris et al 2014) has been adopted (with permission) for this evaluation. This framework is designed to capture information at three levels – consumers, providers and the system (structures, processes, networks, relationships). Four categories of APNE key performance indicators were developed to guide the evaluation: (1) Efficiency, (2) Proficiency, (3) Access, and (4) Evaluation (Appendix 4). The evaluation employed a range of mixed methods. Data sources included patient and staff surveys, APNE interviews, routine administrative data related to the project key performance indicators (using PROVATION and Operating Room Management Information System (ORMIS) electronic databases and cost consequences. Data was collected at a number of points throughout the 12 month project timeframe.

Results
- Full implementation of the project was achieved. The required number of colonoscopies for each APNE (n=200) was met within the established timeframe of 12 months (See page 7). Out of the original three APNEs who commenced, two completed.
- For efficiency: the mean number of procedures per session per day was 4.0 (APNE 1) and 4.1 (APNE 2 See pages 10-11).
- Patient flow time (the time gap between patients entering and leaving the operating room, (OR) decreased during the trial from 58.8 min in August 2017 to 40.1 min in June 2018; across the whole trial the average flow time for the APNEs was 46.9 min (See page 12).
- For proficiency: Of the 409 procedures that were completed, the caecal intubation rate was 97.3%. The recommended target was a caecal intubation rate of 90% or greater, and this was achieved by the two APNEs - 96.5% and 98.1%, respectively (See pages 13-16).
- The mean colonoscopy withdrawal time was 15.8 min for all procedures, 11.5 min for procedures in which polypectomy was not conducted and 19.7 min for procedures with polypectomy. APNE withdrawal time decreased by 6 min from 16.4 min in August 2017 to 10.4 min in June 2018 (See page 17).
• The adenoma detection rate (ADR) for the two APNEs was 33.8% and 35.6%, respectively (See page 17).
• Of the 409 procedures that were completed, polyps were retrieved in 212 procedures. Data was not collected on the number of polyps retrieved per procedure (See page 18).
• There were 7 complications (1.7%), none of which were directly related to the APNEs actions (knowledge and skills) (See page 18).
• For evaluation: There was a 53% response rate to the consumer feedback survey (n=53), with the majority of responses indicative a positive experience for patients and high levels of satisfaction (See pages 18-23).
• The access KPI data on wait list times was not available, however current waiting list numbers at 30th June 2018 indicate that approximately 16,000 patients are awaiting a colonoscopy across SA Health (SA Health 2018)
• There were 35 responses to a staff survey. The staff survey indicated overall support for the introduction of this role (See pages 23-29).
• Advanced Practice Domains: For Scope of Practice, we documented improvements in all five of the Advanced Practice Domains (Clinical care; Optimising Health systems; Education, Research; Leadership) (See pages 30-34).
• Cost Consequences: The main costs considered were for the training of each nurse and comprised three components: initial training, financial contribution to support the training development component at the hospital site, and interstate project support. For nurses who complete the training and continue in the APNE role (completed only model), an additional 10,672 procedures could be performed over a 5-year period with an average training cost per additional procedure of $49 and would take 2.2 years to redeem all training costs (See pages 40-42).

Conclusion
In light of the impending demand on endoscopic services in SA Health as well as the aims of the Department for Health and Ageing’s Strategic Direction 2016-2018, an Advanced Practice Nurse Endoscopist Model of Care is a safe and acceptable model to introduce into the workforce.

There are costs associated with the education, skills training, medical supervision and the organisational establishment and resources for these roles, however there is no difference in the costs associated with training compared with other health practitioners required to meet the GESA criteria. Upon credentialing, the APNE should be integrated into the multidisciplinary workforce to support the management of the current SA Health colonoscopy waiting list.
Introduction

Advanced Practice Nurse Endoscopist (APNE) roles have been in place internationally for a number of years. They have proven to be safe, effective and acceptable. Victoria and Queensland have commenced implementing such roles into the workforce in Australia. SA Health had gained funding to pilot the implementation of three nursing positions in one of the major metropolitan acute care health services, The Queen Elizabeth Hospital (TQEH) as part of an Advanced Practice APNE Model of Care.

The pilot project provided an opportunity for nurses to work towards an advanced level of practise. This involved education and training to be able to perform low-risk non-complex colonoscopies under the supervision of colorectal surgeons (the ‘Trainers’). The APNE roles were part of a multidisciplinary team. The training program commenced in July 2017 and finished at the end of June 2018.

This evaluation has been developed as part of the project implementation plan. The evaluation examined the impact of this model of care adding to the knowledge about the safety, acceptability, accessibility and the cost consequences of these new roles in South Australia.

Background

Bowel cancer is the second most commonly diagnosed cancer with the majority of cases diagnosed in patients’ aged 50+. However, it can be treated effectively in 90% of cases if detected early. In 2015, 431 South Australians died from bowel cancer and 1264 new cases were diagnosed. Latest estimates indicate that every week, twenty two (22) South Australians are diagnosed with bowel cancer and eight (8) die from this disease.

Bowel cancer can be effectively treated in 90 per cent of cases if detected early (Australian Institute of Health and Welfare 2014). Regular bowel cancer screening using a Faecal Occult Blood Test (FOBT) is expected to reduce the mortality by 15-33% (Australian Institute of Health and Welfare 2014). The National Bowel Cancer Screening Program has introduced biennial screening to cover all Australians aged 50–74 by 2020 (Department of Health 2016). It is estimated that around 2.5 million people will be offered free FOBT screening each year, preventing 300-500 deaths from bowel cancer (Cancer Australia 2016). South Australia is expecting to have an 81% increase in the number of older persons aged 65+ from 262,000 to 473,000 between 2011 and 2041. This will equate to a 563% increase in demand for endoscopic examination across SA Health. A lack of access to endoscopic services results in a large number of people dying from potentially preventable conditions (Cancer Australia 2016).

Waiting times are considered not only an effective measure of patient access to hospital care but also an important indicator of the adequacy of workforce supply. Available waiting list data reported in September 2015 showed that 13,897 patients were on colonoscopy waiting lists across Southern Adelaide Local Health Network, Northern Adelaide Local Health Network and Country Health SA. Of these, 4,270 patients were ‘ready for care’ and 9,627 patients were ‘not ready for care’ awaiting
surveillance colonoscopy at a point in the future. More recent data indicates that of June 2018 approximately 16,000 patients were on the wait list across SA Health (SA Health 2018). The majority of National Bowel Cancer Screening Program (NBCSP) participants in South Australia with a positive FOBT result currently wait more than thirty (30) days for diagnostic screening with only 11.2% receiving colonoscopy within the recommended priority timeframe. Given the impending waiting list increase driven by the NBCSP, it was proposed that SA Health introduced an APNE Model of Care to work in collaboration with existing endoscopy services (Appendix 1).

The introduction of the South Australian APNE model was built on extensive international and national experience from the USA, UK, Netherlands, Canada, China, and Australia (Victoria and Queensland). An abundance of evidence clearly articulated nurses performing endoscopies is safe and efficacious (Hui et al 2015; Thompson, Williams, Morris, Lago, Quinsey, Kobel, Andersen, Eckermann, Gordon and Masso 2014). Thompson et al (2014 pviii) notes that a “recent systematic review of the literature indicates that nurses can achieve similar results for efficacy and safety to those achieved by doctors”. This view was further supported by Dr Stephen Duckett from The Grattan Institute who argued that many studies show that appropriately trained nurses can provide endoscopies to at least the same level of safety, quality and patient satisfaction as doctors and that by engaging nurse endoscopists, specialists can free up time to spend on more complex cases and other procedures (Duckett and Breadon 2014).

Preparation for the APNE model of care project

As identified by Thompson et al (2014) implementation of these roles requires significant organisational resources and financial investment. Sufficient time was required for extensive planning and consultation about the project. Recruitment of trainers, project officer and suitable registered nurses willing to undertake this role also took time to finalise.

A dedicated Project Officer from the Nursing and Midwifery Office coordinated the different aspects of the project. This role was the liaison between the evaluators, project funders (Nursing and Midwifery Office), the health service key stakeholders, colorectal surgeons and the APNEs. In particular this role coordinated access to the relevant data required to measure both the project outcomes as well as the APNEs key performance indicators. One such important piece of data was to monitor and provide feedback to the APNE Community of Practice Committee on the number of colonoscopies the APNE had achieved and the number they were still required to reach during the 12 months.

An APNE Community of Practice Committee was established that included representation from the colorectal surgeons, nursing executive, nursing and midwifery office project team, community, an advanced nurse (endoscopist), the APNEs and the evaluation project lead. An Evaluation subcommittee was also established as part of the project governance arrangements.

Preparation of the APNEs
The role of the APNE for this project was considered an advanced scope of practice where experienced and specially trained nurses work under the supervision of colorectal surgeons to perform colonoscopies for carefully triaged, low-risk cases. This advanced practice role with the relevant training, supervision, delegation, health service policies and procedures was within the scope of the Registered Nurse.

The objective of the SA Health Nurse Endoscopist (NE) Model of Care Pilot Project was:

- to trial an APNE model of care from patient referral/atriage to admission and colonoscopy procedure to post discharge histopathology follow up.
- to train three (3) NE trainees as APNE within a 12-month period - from July 2017 until June 2018.
- for all trainees to achieve a competency standard of ≥3 through Directly Observed Procedural Skills (DOPS) assessment performed by their primary clinical medical supervisors.
- to meet the following quality indicators of performance:
  - Complete a minimum of 200 colonoscopy procedures in total
  - Perform at least 100 unassisted, supervised, complete colonoscopies
  - Perform successful snare polypectomies on a minimum of thirty (30) patients
  - Achieve a caecal intubation rate of >90%
- to develop and implement quality improvement initiatives that will support the efficiency and safety in the delivery and management of patient care.
- report lessons learnt to inform future NE training programs in SA Health.

The SA Health model included a collaborative partnership with The State Endoscopy Training Centre (SETC) - Austin Health, Victoria to facilitate access to training and training resources. SA Health APNE trainees received a comprehensive training program that consisted of three modules with assignments, provided clinical knowledge, skills training and development, and supervised clinical practice modules. The focus during training was almost entirely on colonoscopies, though haemorrhoid banding was included later in the training, which was supported by the colorectal surgeons.

Completion of the education and skills training program resulted in the awarding of a Graduate Certificate from the University of Hull (Appendix 2). Progression of the APNEs through the training program was monitored using metrics based on the requirements of the Conjoint Committee for the Recognition of Training in Gastrointestinal Endoscopy (CCRTGE). The training program was designed to ensure that trainees would meet all of the requirements of the CCRTGE, including the completion of 200 unassisted colonoscopy procedures. The training also involved a structured approach to, mentorship and direct medical supervision by the Trainers (Appendix 3).

With the nursing executive team and colorectal surgeons the APNE’s used existing clinical governance structures within the hospital to ensure safety and quality of the service delivery. The model of care was developed gradually with a number of quality
improvement initiatives being undertaken to improve patient outcomes and accommodate the APNEs role (Appendix 10).

Costing of the APNE model of care

As noted by Stephens et al (2015) from their systematic review, genuine cost-benefit analysis of non–physician endoscopists are scarce. There appears to be differing views in the cost comparison between APNEs and physicians. The economic analyses were very much determined by the scope of practice, experience of the nurse endoscopists and the complexity of patients seen compared with the physicians (Thompson et al 2014; Stephens et al 2015).

Due to the lack of economic analysis, cost consequences were included in the evaluation of this pilot project.

Methodology

Aims
The study evaluated a number of project key performance indicators related to the safety, efficiency, proficiency, acceptability and accessibility of APNE roles. The evaluation included the exploration of advanced nursing practice and a cost consequence of the roles.

Participant site and Participants
The SA Health APNE Model of Care implementation commenced in June 2017 with three nurses located at The Queen Elizabeth Hospital and supervised by a number of colorectal surgeons.

Two APNEs completed the required training quality indicators of performance in June 2018. One APNE withdrew from the training (December 2017). Out of the two remaining APNEs 1 completed the program within the 12 months and the second within 15 months. The data presented will only reflect the two APNEs who completed the project.

Ethics
This research was approved by the Central Adelaide Local Health Network (CAHLN) TQEH (CALHN Ref: Q20170703. HREC/17/TQEH/150. SSA ref: SSA/17/TQEH/203) and the University of Adelaide Human Research Ethics Committee.

Study Design
A broad mixed methods evaluation framework developed by the Centre for Health Service Development (Thompson, Williams, Morris et al 2014 ) was adopted (with permission) for this study. “This framework recognised that programs aim to make an impact at three levels – consumers, providers and the system (structures and processes, networks, relationships)” (Thompson et al 2014 p 8). Data was collected at various points throughout the project’s timeline.
APNE Key Performance Indicators

Four categories of APNE key performance indicators were developed to guide the evaluation: (1) Efficiency, (2) Proficiency, (3) Access, and (4) Evaluation (Appendix 4). Each KPI for each category is presented below.

1. Efficiency, comprising two KPIs:
   1.1. Efficiency – Throughput volume. The reported benchmark based on expert opinion is 14-16 procedures/room/day.

2. Proficiency, comprising seven KPIs:
   2.1. Proficiency – Number of colonoscopies performed per annum. The reported benchmark based on expert opinion is that each medical proceduralist must perform more than 250 procedures per 5 years. The recommended target was to perform a minimum of 200 procedures per year to maintain competency.
   2.2. Proficiency – Caecal intubation rate determined by photo-documentation of caecal landmarks. The reported benchmark based on expert opinion is that the caecal intubation rate for each medical proceduralist is 90% or greater for general patients and 95% or greater for screening patients. The recommended target was to achieve a caecal intubation rate of 90% or greater.
   2.3. Proficiency – Mean colonoscopy withdrawal time (min). The reported benchmark based on expert opinion is that the mean colonoscope withdrawal time from the caecum for each medical proceduralist is 6 minutes or greater for procedures where there is no polypectomy performed.
   2.4. Proficiency – Adenoma detection rate (ADR). The reported benchmark based on expert opinion is at least 25% in eligible patients. “Eligible patients” are 50 years or older, have intact colons, do not have a finding of acute IBD and were intubated to the caecum or terminal ileum. The recommended target is to achieve an ADR >25% in eligible patients (GESA).
   2.5. Proficiency – Polyp retrieval rate. The reported benchmark based on expert opinion is a minimum standard for polyp retrieval rate of > 90% and a target of >95% for experienced endoscopists. The recommended target is for the rate of polyp removal for pathological examination for each proceduralist is >90% (GESA).
   2.6. Proficiency – Percentage of adverse events and complications. A number of reported benchmarks based on expert opinion are included:
      o Colonic perforation caused by colonoscopy is <1 in 1,000 colonoscopy procedures (diagnostic or therapeutic)
      o Post-polypectomy bleeding is <1 in 100 patients who have had a polypectomy from procedure to hospital discharge
      o Abnormal discomfort or pain is < 1 in 100 patients
      o Procedure related death within 30 days is <1 in 10,000 patients
      o Patient complaint about sedation <1 in 100 patients.
The APNE Project Officer accessed the required health service records from PROVATION and Operating Room Management Information System (ORMIS) electronic databases, and exported the data into Excel. Data was also exported from SETC and ITeMS as a comparator to provide to the research team for analysis throughout the 12 month period. An additional risk register was established for the pilot project where the APNEs recorded any identified risks.

2.7. Proficiency – Consumer (patient) feedback. The recommended target is for completion of 50 assessments of consumer (patient) feedback. Data was collected by the research team using a postal survey of patients post colonoscopy. Two paper based surveys occurred over the project from patients who had experienced the APNE model of care, including a colonoscopy by an APNE (Nov 2017, May 2018).

Participants assigned to APNEs who met the inclusion criteria, were given the Participant Information Sheet (Appendix 5); paper survey (Appendix 6) with an attached prepaid addressed envelope (posted back to the researchers address), by the administrative staff as part of the discharge process. The patients were invited to complete the survey and post back in the attached envelope within 24 hours after they were discharged home.

The survey form developed by Thompson et al 2014 was used to measure patient satisfaction, in which four major domains were incorporated including:

- Skills and hospital [setting]
- Pain and discomfort during and after procedure
- Information before colonoscopy
- Information after colonoscopy

Data was analysed using SPSS.

3. Access, comprising one KPI:

3.1. Access – Reduced length of procedure wait times. The reported benchmark based on expert opinion is the UK has achieved improvements of patient waiting lists to two weeks for critical cases and six weeks for all other appropriate referrals. The recommended target is based on the SA Health Colonoscopy Urgency Categorisation and Surveillance Timing Policy Guideline.

De-identified data on waiting times collected from APNE records kept by the healthcare system and the APNE Project Officer. This included numbers of patients per urgency category for 2011-2016 (Baseline data) compared with 2017/2018 (data). APNEs triaged with the colorectal surgeons patients who were non-complex and low-risk to be delegated to their colonoscopy list.

The SA Health Colonoscopy Urgency Categorisation and Surveillance Timing Policy Guideline used to measure the waiting times based on the patients’ urgency Category timeframes within which a patient should receive a required procedure (Operational Strategy SA Health 2014):

- Category 1: Colonoscopy should be provided within 30 days
- Category 2: Colonoscopy should be provided within 90 days
- Category 3: Colonoscopy should be provided within 365 days
- Category 4: Deferred patients, includes surveillance patients who require a surveillance colonoscopy at a specified date in the future, and patients who require a colonoscopy but are not ‘ready for care’

At the commencement of the initiative, the Project Officer with the APNEs established a data sheet in Excel and recorded current waiting time for new patients referred for colonoscopy, particularly for Categories 1 and 2.

The APNE followed tracking dates for each patient:
- Date referral received by the Endoscopy Unit
- Date booking made for procedure
- Date procedure performed by the NE.
- Cancelled procedures were recorded (any reasons why)
- Did Not Attends (DNA) were recorded (any reasons why)
- Data was analysed using Excel.

4. Evaluation, comprising three KPIs:
   4.1. Acceptability to key staff, with data sourced from a survey of other health care professionals.
   Acceptance of the APNE role by the multidisciplinary team, (administrative, nursing, anaesthetists, surgical) was crucial to building the sustainability of the role. Data was collected over a period of one month near the end of the 12 month project (May 2018) using a paper based survey. A number of staff do not have regular access to email accounts so paper copies were the most appropriate. Staff were informed of the survey through staff meeting and notice board via a flyer (Appendix 7). Paper copies of the survey and Participant Information Sheet (Appendix 8) were left in staff tearoom with a sealed box. The sealed box was collected by the Project Officer and provided directly to the research team.

   Survey Tool: The survey was designed to capture staff satisfaction with the implementation process of the APNE roles into the Unit (Appendix 9)

   Staff survey data was entered into SPSS. Quantitative data analysed using descriptive statistic.

   4.2. Scope of practice. The reported benchmark based on expert opinion is the use of the Australian Advanced practice Nursing Self-Appraisal Tool (Gardener et al 2017) as a benchmark to evaluate the development of the professional role of the nurse endoscopist over the 12 moth pilot period. The development of the APNEs to become advanced practitioners was important for the sustainability of this role. A self-reflection report was undertaken by each APNE. A member of the research team conducted an interview with each of the NE 6 monthly to reflect on the development of their role using the self-reflection tool. (Appendices: Appendix 10 – APNE Participant consent form, Appendix 11 - Interview questions, Appendix 12 - APNE Information Sheet).
A de-identified analysis of the APNE experience of using the tool and reflection on their experience of progress as a developing advanced practitioner was undertaken and summarised qualitatively.

4.3. Economic analysis. The recommended target is patient level resource use and cost data will be extracted from hospital data systems for patients who underwent an endoscopy (between June 2017 and July 2018); 12 months. A cost-consequence approach was used to assess the costs and outcomes for this model of care. The main costs considered were for the training of each nurse and comprised three components: initial training, financial contribution to support the training development component at the hospital site, and interstate project support. The main outcome was the number of additional procedures performed over a 5-year period.

KPI Data collection systems

The following de-identified quantitative data was collected regularly by the research team from administrative records kept by the healthcare system and the APNEs. The APNE Project Officer accessed the required health service records from PROVATION and Operating Room Management Information System (ORMIS) electronic databases, and exported the data into Excel. Data was also exported from SETC and ITeMS as a comparator. The research team were regularly provided this data for analysis throughout the evaluation period (12 months).

This data was analysed for each APNE. As mentioned above, the expected key performance indicators as outlined in the funded project business case are:

- Perform a minimum of 200 procedures per year to maintain competency
- Achieve a caecal intubation rate of 90 percent or greater
- Achieve an adenoma detection rate of >10 percent
- Achieve a polyp retrieval rate of 90 percent or greater
- Mean colonoscopy withdrawal time as clinically indicated.

Results

1.1 Efficiency – Throughput volume

The average number of procedures per session per day over the study period was 4.0 (APNE 1) and 4.1 (APNE 2). Table 1 shows the average number of procedures for each session for each month of the study period. Figure 1 demonstrates how the APNEs steadily increased in their average throughput volume over the course of the study.
### Table 1 Average number of procedures per session

<table>
<thead>
<tr>
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<th>Month</th>
<th>APNE1</th>
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<td>4.5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>Mar</td>
<td>3</td>
<td>4</td>
<td>4.5</td>
<td>5</td>
<td>4.3</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Apr</td>
<td>4.3</td>
<td>4</td>
<td>4</td>
<td>4.8</td>
<td>4.2</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>May</td>
<td>4</td>
<td>4.7</td>
<td>4.6</td>
<td>4.7</td>
<td>4.5</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td>Jun</td>
<td>4.7</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4.8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>3.8</td>
<td>3.9</td>
<td>4.1</td>
<td>4.2</td>
<td>4.0</td>
<td>4.1</td>
</tr>
</tbody>
</table>

**Figure 1 Average number of APNE/NET procedures per session**
1.2 Efficiency – Patient flow time (minutes)

The patient flow time reported in this report refers to the time in which the patient entered the OR until the time they left the OR. The total average flow time for the APNEs was 46.9 min (Table 2). The overall APNE flow time reduced over the study period from 58.8 min in August 2017 to 40.1 min in June 2018 (Table 2, Figure 2).

Table 2 Average flow time (min.sec) for APNEs

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>APNEs (min.sec)</th>
<th>APNE 1 (min.sec)</th>
<th>APNE 2 (min.sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Aug</td>
<td>58.84</td>
<td>55.78</td>
<td>61.06</td>
</tr>
<tr>
<td></td>
<td>Sep</td>
<td>54.08</td>
<td>57.86</td>
<td>48.80</td>
</tr>
<tr>
<td></td>
<td>Oct</td>
<td>48.43</td>
<td>57.00</td>
<td>40.94</td>
</tr>
<tr>
<td></td>
<td>Nov</td>
<td>51.66</td>
<td>53.47</td>
<td>49.00</td>
</tr>
<tr>
<td></td>
<td>Dec</td>
<td>46.61</td>
<td>45.80</td>
<td>46.83</td>
</tr>
<tr>
<td>2018</td>
<td>Jan</td>
<td>49.80</td>
<td>57.00</td>
<td>42.60</td>
</tr>
<tr>
<td></td>
<td>Feb</td>
<td>46.68</td>
<td>54.00</td>
<td>40.36</td>
</tr>
<tr>
<td></td>
<td>Mar</td>
<td>46.29</td>
<td>47.04</td>
<td>45.50</td>
</tr>
<tr>
<td></td>
<td>Apr</td>
<td>44.04</td>
<td>48.52</td>
<td>39.20</td>
</tr>
<tr>
<td></td>
<td>May</td>
<td>42.07</td>
<td>43.72</td>
<td>40.58</td>
</tr>
<tr>
<td></td>
<td>Jun</td>
<td>40.13</td>
<td>44.75</td>
<td>36.44</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>46.94</td>
<td>50.41</td>
<td>43.76</td>
</tr>
</tbody>
</table>
2.1 Proficiency – Number of colonoscopies performed per annum

During the study period (7/8/17 - 28/6/18) 438 procedures were scheduled. Of these 438 procedures, the APNEs completed 409. The recommended target was 200 procedures per year to maintain competency and this was reached by both APNEs - APNE 1 = 201 and APNE 2 = 208 (Table 3). See pa2 In total there were 29 cancelled procedures (APNE 1 = 15; APNE 2 = 14) and Table 4 outlines the reasons why.
### Table 3 Number of APNE colonoscopies performed per annum

<table>
<thead>
<tr>
<th>APNE</th>
<th>Number scheduled</th>
<th>Number cancelled</th>
<th>Number of procedures completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>216</td>
<td>15</td>
<td>201</td>
</tr>
<tr>
<td>2</td>
<td>222</td>
<td>14</td>
<td>208</td>
</tr>
<tr>
<td>Total</td>
<td>438</td>
<td>29</td>
<td>409</td>
</tr>
</tbody>
</table>

### Table 4 Reasons for procedure cancellation

<table>
<thead>
<tr>
<th>Reason for cancellation</th>
<th>APNE 1</th>
<th>APNE 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Unfit for surgery</td>
<td>1</td>
<td>6.7%</td>
<td>4</td>
</tr>
<tr>
<td>Incomplete pre-op</td>
<td>3</td>
<td>20%</td>
<td>1</td>
</tr>
<tr>
<td>Cancelled by patient</td>
<td>8</td>
<td>53.3%</td>
<td>3</td>
</tr>
<tr>
<td>Session over run</td>
<td>3</td>
<td>20%</td>
<td>0</td>
</tr>
<tr>
<td>Surgeon unavailable</td>
<td>0</td>
<td>0%</td>
<td>5</td>
</tr>
<tr>
<td>Unsuitable for APNE</td>
<td>0</td>
<td>0%</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>51.7%</td>
<td>14</td>
</tr>
</tbody>
</table>

### 2.2 Proficiency – Caecal intubation rate determined by photo-documentation of caecal landmarks

Of the 409 procedures that were completed, the caecal intubation rate was 97.3% (Table 5). The recommended target was a caecal intubation rate of 90% or greater, and this was achieved by the two APNEs - 96.5% and 98.1%, respectively.

### Table 5 Caecal intubation rate

<table>
<thead>
<tr>
<th>APNE</th>
<th>Number of procedures</th>
<th>Caecal intubation</th>
<th>Caecal intubation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>201</td>
<td>194</td>
<td>96.5%</td>
</tr>
<tr>
<td>2</td>
<td>208</td>
<td>204</td>
<td>98.1%</td>
</tr>
<tr>
<td>Total</td>
<td>409</td>
<td>398</td>
<td>97.3%</td>
</tr>
</tbody>
</table>
2.3 Proficiency – Mean colonoscopy withdrawal time

Of the 409 procedures that were completed, the mean withdrawal time was 15.8 mins (Table 6). Per APNE, the mean withdrawal time was 14.5 mins and 16.8 mins, respectively (Table 6). The mean withdrawal times were about 8 minutes shorter for procedures in which polypectomy was not performed (11.5 min) compared to when polypectomy was performed (19.7 min) (Table 6).

<table>
<thead>
<tr>
<th>Without polypectomy</th>
<th>With polypectomy</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APNE</strong></td>
<td><strong>n</strong></td>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>1</td>
<td>89</td>
<td>11.6</td>
</tr>
<tr>
<td>2</td>
<td>97</td>
<td>11.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>186</td>
<td>11.5</td>
</tr>
</tbody>
</table>

*Table 6 Mean colonoscopy withdrawal time, including standard deviation (SD) for procedures without polypectomy, with polypectomy and combined.*

*Figure 3 Mean withdrawal time (min) for endoscopies in which polypectomy was not performed from August 2017 until June 2018 for two APNEs/NETs. Labels refer to the number of procedures that were performed per month.*
The mean withdrawal time tended to decrease for both APNEs during the study, especially after the first month (August 2017) (Figure 3 and Figure 4).

For procedures in which polypectomy was not conducted (n=186), the mean withdrawal time across both APNEs decreased by 6 min from 16.4 min in August 2017 to 10.4 min in June 2018 (Figure 3). The reported benchmark based on expert opinion is that the mean colonoscopy withdrawal time from the caecum for each medical proceduralist is 6 minutes or greater for procedures where there is no polypectomy performed (Appendix 4). The data from the two APNEs indicates that this benchmark is being met.

![Figure 4 Mean withdrawal time (min) for endoscopies in which polypectomy was performed from August 2017 until June 2018 for two NETs. Labels refer to the number of procedures that were performed per month.](image)

For procedures in which polypectomy was conducted (n=202) the mean withdrawal time across both APNEs decreased by 9.5 min from 25.6 min in August 2017 to 16.1 min in June 2018 (Figure 4).

2.4 Proficiency – Adenoma detection rate

Of the 212 procedures where polyps were retrieved, adenomas were detected in 142 (Table 7). The adenoma detection rate for the two APNEs was 33.8% and 35.6%, respectively (Table 7). The recommended target was an adenoma detection rate of...
greater than 25% in eligible patients (those over 50 years old) and this was achieved by both APNEs (30.9% and 30.3%, respectively).

**Table 7 Polyp retrieval and adenoma detection**

<table>
<thead>
<tr>
<th>APNE</th>
<th>Number of procedures</th>
<th>Polyps retrieved</th>
<th>Polyps detected</th>
<th>Adenoma detection rate</th>
<th>Adenoma detected ≥50</th>
<th>Adenoma detection rate ≥50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>201</td>
<td>101</td>
<td>50.3%</td>
<td>68</td>
<td>33.8%</td>
<td>62</td>
</tr>
<tr>
<td>2</td>
<td>208</td>
<td>111</td>
<td>53.4%</td>
<td>74</td>
<td>35.6%</td>
<td>63</td>
</tr>
<tr>
<td>Total</td>
<td>409</td>
<td>212</td>
<td>51.8%</td>
<td>142</td>
<td>34.7%</td>
<td>125</td>
</tr>
</tbody>
</table>

**2.5 Proficiency – Polyp retrieval**

Of the 409 procedures that were completed, polyps were retrieved in 212 procedures. This data can be seen above in Table 7.

**2.6 Proficiency – Percentage of adverse events and complications**

Of the 409 procedures that were completed, there were complications in 7 (1.7%). None of these complications were due to adverse events. Of the seven complications, one was due to a double booking, three were due to anaesthetic complications and three were due to pathology review.

**2.7 Proficiency – Consumer (patient) feedback**

Of 100 patients who were provided ‘Patient experience and satisfaction survey on the Nurse Endoscopist role’ (Appendix 6) between October 2017 – July 2018, 53 participants (27 males, 26 females) responded (53% response rate). Of the 53 participants, 96.2% completed the survey on their own, 1.9% had a relative or carer assist them (1.9% did not respond).

Participants ranged between 30 – 74 years old (M = 56.2, SD = 9.7) and Table 8 shows that 50.9% of participants had a previous colonoscopy. 90.6% of participants knew how long they were on the wait list, and the wait list time ranged from 2 weeks to 104 weeks (M = 12.8, SD = 16.1).

Finally, 49.1% of participants knew they were being treated as part of the Nurse Endoscopist Model of Care prior to their consultation. 20.8% reported knowing during their consultation, 3.8% after the consultation, and 17.0% reported that they did not know. 7.6% reported not knowing, and 1.9% did not respond.
Table 8 Responses to questions 26-28

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous colonoscopy</td>
<td>Yes</td>
<td>27</td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>25</td>
<td>47.2%</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>1</td>
<td>1.9%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>53</td>
<td>100%</td>
</tr>
</tbody>
</table>

| 27. Aware how long on wait list | Yes | 48 | 90.6% |
| | No | 2 | 3.8% |
| | No response | 3 | 5.7% |
| | Total | 53 | 100% |

| 28. Aware they were part of the NE Model of Care | Yes (prior to consult) | 26 | 49% |
| | Yes (during the consult) | 11 | 20.8% |
| | Yes (after the consult) | 2 | 3.8% |
| | No | 9 | 17% |
| | Don’t know | 4 | 7.5% |
| | No response | 1 | 1.9% |
| | Total | 53 | 100% |

The survey can be broken down into four sections – (i) information, explanation and skills, (ii) pain and discomfort, (iii) follow up and (iv) overall satisfaction.

2.7.1 Information, explanation and skills
Most patients reported that prior to their colonoscopy they had plenty of opportunity to ask questions (88.7%) with only a few reporting they had a little (7.6%) and only 1 reporting they had none (1.9%) (question 3, Table 9).

Table 9 outlines the other 7 questions relating to information, explanation and skills and Figure 5 presents patient responses. Across all questions, the largest percentage
of responses were positive (ie information was very easy to understand, very useful and skills were very good).

Table 9 Patient survey questions 1 - 8

<table>
<thead>
<tr>
<th>Patient Survey Questions Relating to Information, Explanation and Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How easy to understand was the information that was sent to you before your endoscopy?</td>
</tr>
<tr>
<td>2. Was the information sent to you before your endoscopy appointment useful in answering your questions?</td>
</tr>
<tr>
<td>3. Before you had your endoscopy, how much opportunity did you have to ask questions about the endoscopy procedure?</td>
</tr>
<tr>
<td>4. How easy to understand was the explanation given to you before your endoscopy?</td>
</tr>
<tr>
<td>5. Was the explanation given to you before your endoscopy useful in answering your questions?</td>
</tr>
<tr>
<td>6. How would you rate the communication skills (e.g. courtesy, respect, sensitivity, friendliness) of the person who performed your endoscopy?</td>
</tr>
<tr>
<td>7. How would you rate the technical skills (e.g. thoroughness, carefulness, competence) of the person who performed your endoscopy?</td>
</tr>
<tr>
<td>8. How would you rate the communication skills (e.g. courtesy, respect, sensitivity, friendliness) of the other staff in the endoscopy unit?</td>
</tr>
</tbody>
</table>

Figure 5 Percentage of responses for Questions 1 - 8

* Rating scale – (1) very easy, (2) easy, (3) fair, (4) difficult, (5) very difficult
** Rating scale – (1) very useful, (2) useful, (3) fair, (4) not very useful, (5) not at all useful
*** Rating scale – (1) very good, (2) good, (3) fair, (4) poor, (5) very poor

2.7.2 Pain and discomfort
Table 10 outlines the 4 questions relating to pain and discomfort and Figure 6 presents patient responses. It is to clear to see from Figure 6 that the majority of respondents experienced no pain or discomfort during or after their colonoscopy.

**Table 10 Patient survey questions 9 - 12**

**Patient Survey Questions Relating to Pain and Discomfort**

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>How much discomfort did you experience during your endoscopy?</td>
</tr>
<tr>
<td>10.</td>
<td>How much pain did you experience during your endoscopy?</td>
</tr>
<tr>
<td>11.</td>
<td>How much discomfort did you experience after your endoscopy?</td>
</tr>
<tr>
<td>12.</td>
<td>How much pain did you experience after your endoscopy?</td>
</tr>
</tbody>
</table>

![Figure 6 Percentage of responses for Questions 9 – 12]

**2.7.3 Follow up**

Questions 13 – 17 related to patient experience of follow up. These questions can be seen in Table 11 and the findings reported below.
Most patients reported that after their colonoscopy they had plenty of opportunity to ask questions about the findings (81.1%) with only a few reporting they had a little (9.4%) and only 4 reporting they had none (7.6%) (Figure 7).

Further, most patients reported that after their colonoscopy they received about the right amount of explanation of the findings (92.5%) with only 4 reporting they did not receive enough (7.6%).

In relation to the explanation they received, 42 patients reported they received the explanation from the person who performed their procedure (79.3%) with 9 reporting it was not from this person (17%).

Patients reported that this explanation was very easy \((n = 35, 66\%)\) and easy \((n = 14, 26.4\%)\) to understand. Only 3 reported it was fair \((5.7\%)\) and none reported it was difficult or very difficult.

Finally, patients reported that this explanation was very useful \((n = 30, 56.6\%)\) and useful \((n = 19, 35.9\%)\). Only 2 reported it was fair \((3.8\%)\) and none reported it was not very useful or not at all useful (Figure 7).
2.7.4 Overall satisfaction
Table 12 outlines the questions relating to overall satisfaction and Figure 8 presents patient responses. Across all questions, the largest percentage of responses were very positive.

Table 12 Questions relating to overall satisfaction

<table>
<thead>
<tr>
<th>Patient Survey Questions Relating to Overall Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. How would you rate the comfort of the recovery area in the endoscopy suite?</td>
</tr>
<tr>
<td>19. Overall, how satisfied are you with your endoscopy?</td>
</tr>
<tr>
<td>20. If, in the future, you have another endoscopy, how satisfied would you be to have it done by the same person?</td>
</tr>
<tr>
<td>21. How would you rate the overall reputation of the hospital?</td>
</tr>
</tbody>
</table>
Figure 8 Percent responses to 4 questions related to overall satisfaction

* Rating scale – (1) very good, (2) good, (3) fair, (4) poor, (5) very poor

** Rating scale – (1) very satisfied, (2) satisfied, (3) neither satisfied nor dissatisfied, (4) dissatisfied, (5) very dissatisfied

3.1 Access – Reduced length of procedure wait times.

The access KPI data on wait list times was incomplete.

4.1 Evaluation – Acceptability key staff

Surveys were provided to the hospital for a variety of staff to complete in order to determine the acceptability of the role by other health care professionals. There were 35 staff at the QEH who completed the ‘Staff experience and satisfaction survey on the nurse endoscopist role’ (Appendix 9) between 16.4.18 and 3.5.18.

Table 13 presents the demographic information of the 35 staff participants. The participants were relatively evenly distributed between the ages 20-60+ with the most being in the age bracket of 45-59 (37.1%). Most of the participants were nurses (68.6%) with 8-12 years’ experience in their current role (40%) and 3-7 years’ experience in their area of speciality (28.6%).
Table 13 Demographics of 35 respondents to the Staff survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Age group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>7</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>30-44</td>
<td>11</td>
<td>31.4%</td>
<td></td>
</tr>
<tr>
<td>45-59</td>
<td>13</td>
<td>37.1%</td>
<td></td>
</tr>
<tr>
<td>60+</td>
<td>4</td>
<td>11.4%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>2. Role in hospital</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td>24</td>
<td>68.6%</td>
<td></td>
</tr>
<tr>
<td>Admin/clerical</td>
<td>3</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td>Allied health</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Technician</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Medical staff</td>
<td>8</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>Scientist/research</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>3. Years in current position</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>3</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td>1-2 years</td>
<td>7</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>3-7 years</td>
<td>5</td>
<td>14.3%</td>
<td></td>
</tr>
<tr>
<td>8-12 years</td>
<td>14</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>13-20 years</td>
<td>3</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td>20+ years</td>
<td>3</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>4. Years in area of speciality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>5</td>
<td>14.3%</td>
<td></td>
</tr>
<tr>
<td>1-2 years</td>
<td>6</td>
<td>17.1%</td>
<td></td>
</tr>
<tr>
<td>3-7 years</td>
<td>10</td>
<td>28.6%</td>
<td></td>
</tr>
<tr>
<td>8-12 years</td>
<td>8</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>13-20 years</td>
<td>5</td>
<td>14.3%</td>
<td></td>
</tr>
<tr>
<td>20+ years</td>
<td>1</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
In relation to the participants’ involvement with the APNEs, Table 14 demonstrates that most of the participants only had contact with the APNEs sometimes (62.9%) (i.e. weekly) and that more than half were not involved in their training (54.3%).

**Table 14 Staff survey respondents’ involvement with APNEs**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5. Contact with APNEs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nevev</td>
<td>2</td>
<td>5.7%</td>
<td></td>
</tr>
<tr>
<td>Occasionally (i.e. monthly)</td>
<td>3</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td>Sometimes (i.e. weekly)</td>
<td>22</td>
<td>62.9%</td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>8</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>35</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>6. Involved in APNE training</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>42.9%</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>54.3%</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>35</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

The questions relating to participants’ experiences and satisfaction of the NE role are included in Table 15 and the responses in Figure 9. The staff survey indicated overall support for the introduction of the NE role. The majority of staff agreed that the NE positions in the unit would improve patient access.

- While 80% (highest level of agreement: Question 12) of respondents indicated I have a good understanding of how a nurse endoscopist differs from nurses assisting with colonoscopy, and
- 91% (highest level of agreement: Question 23) Medical specialists are the most appropriate personnel to supervise nurse endoscopists in the pilot model
- Only 31% (lowest level of agreement: Question 18) of respondents indicated - I do not understand how the nurse endoscopist will function in this Colonoscopy Unit, and
- Only 17% (lowest level of agreement: Question 14) indicated Nurse endoscopists do not have the skills and knowledge to perform selected procedures safely and accurately for their patient

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25 | Page
These results indicated that more information to staff is required to inform them about the level of preparation required, the pathway of care and the scope of the role. The participants understood the difference between this role and that of the gastroenterology nurses. The participants had noted that colonoscopies were taking a bit longer, which sometimes impacted on session time. The participants further acknowledged that once the patient flowthrough increased then this role would make the colonoscopy unit more effective.
<table>
<thead>
<tr>
<th><strong>Staff questions</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>7. I have a good understanding of the nurse endoscopist role</td>
</tr>
<tr>
<td>8. Patients do not have a good understanding of the nurse endoscopist role</td>
</tr>
<tr>
<td>9. I have a good understanding of which patients are suitable for management by a nurse endoscopist</td>
</tr>
<tr>
<td>10. I have a good understanding of the scope of practice of nurse endoscopists</td>
</tr>
<tr>
<td>11. I acknowledge the professional skills and expertise of nurse endoscopists</td>
</tr>
<tr>
<td>12. I have a good understanding of how a nurse endoscopist differs from nurses assisting with colonoscopy</td>
</tr>
<tr>
<td>13. I have a good understanding of the educational preparation required to become a nurse endoscopist</td>
</tr>
<tr>
<td>14. Nurse endoscopists do not have the skills and knowledge to perform selected procedures safely and accurately for their patient</td>
</tr>
<tr>
<td>15. Nurse endoscopists have the skills and knowledge to provide appropriate information to specific patient groups</td>
</tr>
<tr>
<td>16. Nurse endoscopists have the skills and knowledge to appropriately refer specific patient groups to outpatients and specialty clinics</td>
</tr>
<tr>
<td>17. I feel confident of nurse endoscopists dealing with patients in their expanded role</td>
</tr>
<tr>
<td>18. I do not understand how the nurse endoscopist will function in this Colonoscopy Unit</td>
</tr>
<tr>
<td>19. Nurse endoscopists will make the Colonoscopy Unit more effective</td>
</tr>
<tr>
<td>20. Nurse endoscopists will improve access to colonoscopies</td>
</tr>
<tr>
<td>21. Nurse endoscopists will not improve quality of care for specific patient groups</td>
</tr>
<tr>
<td>22. I am comfortable with being approached by a nurse endoscopist for advice regarding patient management</td>
</tr>
<tr>
<td>23. Medical specialists are the most appropriate personnel to supervise nurse endoscopists</td>
</tr>
</tbody>
</table>
Questions have been reverse scored such that agreement indicates a positive result.

*Figure 9 Responses to questions 7 - 23 of the staff survey*
4.2 Evaluation – Scope of Practice: Advanced Practice Development:

The purpose of this section within the evaluation design was to determine the extent the APNEs’ role developed within an Advanced Practice Framework. The Australian Advanced Practice Nursing Self-Assessment Tool (Gardner, Duffield, Gardner & Batch 2017) was used to guide the reflection process at three points in time at commencement of the pilot, 6 months and 11 months.

Each of the five Advanced Practice Domains (Clinical care; Optimising Health systems; Education, Research; Leadership) are presented with both the 6 and 11 months reflection, self-scores by the APNEs and a summary.

The APNEs self-reflection scores that reflect their perception of their development within the Advanced Practice Framework are at 2, 6 and 11 months.

**Domain 1. Clinical Care**

This domain comprised general clinical care activities related to current nursing practice. Examples of clinical activities listed for this domain included: conducting clinical assessment, interpretation of data, provision of physical care, counselling, care co-ordination, care delivery and guidance and direction of others related to a specific patient population.

**Six Months Reflection**

The APNEs identified a variety of activities that added to their development in the clinical care domain. These activities were encompassed in three themes: Scope of Practice, Continuity of Care and Confidence and Respect.

The theme scope of practice encompassed a range of activities. The APNEs stated that there was evidence of their expanding skills and knowledge, which had been achieved through a comprehensive training program through Hull University and the Austin Hospital. This was supplemented through the support and supervision provided by their colleagues. The APNEs considered that their scope of practice was now different from the gastroenterology nurses, because they have moved from observing and assisting with procedures to actually undertaking the procedures. “Moved from observer to doer”. Additionally, with training and supervision they had broadened their clinical scope to include haemorrhoid banding and injections.

Providing continuity of care was demonstrated through the development of a comprehensive approach to streamline the patient’s pathway. This included their engagement with patients in outpatients through to the patients discharge after the procedure. This involved patient assessment and education to ensure that the patients have a clear understanding of the risks involved in undertaking the procedure and afterwards. The APNEs provided follow-up for the patients, such as referral letters and reports to relevant health practitioners as required.

The APNEs considered that there was growing confidence and respect by other members of the inter-professional team, as their ability to perform
colonoscopies safely and effectively was demonstrated. The APNEs confidence in their practise had increased as they applied the learnings from their studies and reflected on the trainers’ feedback specifically related to their skill with the colonoscopy procedure. In particular there had been improvement in their use of equipment with remote hand eye coordination. The trainers increased confidence was shown through their location within the colonoscopy room. The trainers have moved from being at the patient’s side (direct supervision) to now standing towards the back of the room (indirect supervision). The manipulation/dexterity in using the colonoscopy equipment was an area identified by the APNEs for continued improvement.

Eleven Months Reflection
Scope of Practice: Through the applied practice and the comprehensive training program, the APNEs continued to report that they have improved both their procedural skills. More recently they had identified improvements in their clinical decision making ability. This was supported by feedback from the clinical assessors from Austin Hospital.

The APNEs identified that they were more confident in initiating appropriate investigations for patients, even though they could not order the tests themselves during their training program.

Examples are

- Increased proficiency in undertaking colonoscopies which had resulted in a decrease in procedure time
- Increased confidence to question the trainers’ recommendations for a procedure based on the APNE’s own increased knowledge, experience and clinical decision making ability
- Initiating investigations for the patients. An example was initiating a blood test for a patient who was very pale on presentation for the colonoscopy and was found to have a low haemoglobin. The APNE, in discussion with a Medical Officer, organised the patient to have an iron infusion in the hospital setting rather than going straight home. This enabled a better health outcome for the patient. Further follow-up from a gastroenterologist was also organised prior to discharge.

Continuity of Care: The two APNEs reported working closely together to enable continuity of care for the patients. Their aim was to ensure that the patients and their families knew both of the APNEs so no matter who undertook the pre admission assessment, procedure or post procedure follow-up, the patient felt supported. Through developing a professional relationship with the patient and their family the APNEs considered that the patients demonstrated that they trusted and had confidence in the APNEs advice and to undertake the colonoscopy.

- Through close review of the patient’s history they were able to gain earlier recognition of patients’ symptoms that indicated they required a colonoscopy.
- Identification of efficiencies in the patient journey to make the process less convoluted and more timely.
- Engaged with the patients in the outpatient clinic to highlight the importance of bowel preparation to prevent colonoscopies from needing to be redone or to prevent good observation of the bowel during the procedure.
- Meeting the patient and family in the waiting room before the procedure to answer questions and provide reassurance.

Respecting the cultural diversity of the patient group that the APNEs cared for was highlighted. They demonstrated their understanding of this by customising the care within the cultural context of the individual. This respectful behaviour was a tenet of their practice with all patients.

- Awareness of cultural diversity in patients. For example Muslim patients fasting during Ramadan therefore rescheduling the bowel preparation protocol and colonoscopy appointment.
- When the patient did not speak English the APNEs' involved the hospital translator service and the family, where appropriate, especially related to education and information about after care and repeating the colonoscopy based on the pathology.

Confidence: The APNEs conveyed that their confidence in ‘running the room’ had increased significantly. This was demonstrated by increased positive feedback to them by their trainers, the anaesthetists and other staff in the operating suite.

Summary
This was the strongest domain within the Advanced Practice Framework for development as there was significant breadth and depth of the APNEs’ scope of practice. This correlated with their increased knowledge, skills and clinical confidence. In particular they noted an increase in their clinical decision making capability. This was supported through feedback received from trainers and assessors.

The APNEs have advocated for improved continuity of care for patients by clearly mapping the patients’ journey and streamlining the process. This contact with the patients throughout the journey enabled the APNEs to provide support, and information to the patient and their family. The APNEs were very keen to ensure that the patients made informed decisions regarding their colonoscopy.

Acknowledging and respecting cultural diversity when engaged with patients from different cultural backgrounds, to plan their care, was important to the APNEs.
Domain 1 Scores – Clinical care

<table>
<thead>
<tr>
<th>Month</th>
<th>Domain Scores (56) NE1</th>
<th>Domain scores (56) NE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2017</td>
<td>32 (57%)</td>
<td>20 (36%)</td>
</tr>
<tr>
<td>February 2018</td>
<td>45 (80%)</td>
<td>52 (93%)</td>
</tr>
<tr>
<td>June 2018</td>
<td>55 (98%)</td>
<td>55 (98%)</td>
</tr>
</tbody>
</table>

**Domain 2. Optimising Health Systems**

This domain included activities that contributed to effective functioning of health systems and the institutional nursing service. This included the role of advocacy, promotion of innovative patient care, and facilitating equitable, patient-centred health systems.

**Six Months Reflection**

The APNEs identified a range of quality service improvement activities that reflected this domain. These activities were captured in two themes: customised the system and better patient outcomes.

Customised the system demonstrated a range of health system improvements undertaken by the APNEs since commencing in the role. These initiatives were in collaboration with the appropriate staff and the colorectal surgeons.

Through trying to understand the patient journey, the APNEs mapped the process within the unit from the point of receiving the patients’ referral for a colonoscopy to discharge back to the General Practitioner for care or onto another specialist. The APNEs identified a number of areas where the system did not flow well or there was duplication of activities (Appendix 13). They also used this opportunity to embed their role into the system.

The activities included:

- Worked with the relevant staff and colorectal surgical team to refine the patient booking system.
- Reviewed the histopathology protocol.
- Reviewed and rewrote the bowel preparation protocol.
- Explored referral options for patients where other medical conditions were identified or they referred to another medical specialty.

The second theme: better patient outcomes demonstrated that the system and practice improvement initiatives all led to delivering better patient outcomes:

- Stopped double booking of patients and identified patients who were not required to have a colonoscopy, but had for some reason been put on the waiting list. Thereby reducing unnecessary intervention for patients and reducing costs to the health service.
- Reduced risk of histopathology reports being missed or misplaced.
• Helped patients navigate the health service for follow-up after the colonoscopy.

Eleven Months Reflection:
Customised the system: The latter part of the year involved working with the relevant staff and colorectal surgical team refining and stabilising the structures and processes of the system improvements developed to incorporate and support the APNEs' model of care.

Better patient outcomes: There was more of a focus on helping patients navigate the health system and prevent or reduce inappropriate use of health care services.

• An example was given regarding the management of haemorrhoids. Discussing with patients the option of conservative treatment such as improving their diet, increased fluids and not straining when using their bowels, or if more serious referral to the PR bleeding clinic. Also ensuring referral to the right medical or surgical gastroenterologist.
• The APNEs’ also focused on ensuring the patients’ were well informed about the risks, but at the same time reassuring them through listening to their concerns and taking the time to answer any queries.
• Discussing with patients their options for the most appropriate follow-up for their gastroenterology issues.

Summary
The APNEs have provided evidence on how they have influenced the system through implementing improvements to a range of processes and protocols. The APNEs described undertaking these quality improvement activities collaboratively. This involved communicating with the key nursing administration and administrative staff and colorectal surgical team members.

As their confidence has grown with more experience gained and the systems have developed the APNEs have been able to focus very much more on delivering patient centred care. They advocated for and interacted with patients and their families through discussion and joint decision-making as well as providing patients with clear information both written and verbal.

Domain 2 Scores – Optimising Health Systems

<table>
<thead>
<tr>
<th>Month</th>
<th>Domain scores (36) NE1</th>
<th>Domain scores (36) NE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2017</td>
<td>32 (89%)</td>
<td>4 (11%)</td>
</tr>
<tr>
<td>February 2018</td>
<td>32 (89%)</td>
<td>32 (89%)</td>
</tr>
<tr>
<td>June 2018</td>
<td>34 (94%)</td>
<td>36 (100%)</td>
</tr>
</tbody>
</table>
Domain 3. Education
This domain included activities that involved aiding patients and their families to manage illness and promote wellness, and informal and formal staff development presentations.

Six Months Reflection
The APNEs identified a few activities related to this domain. These included informal teaching of nurses, formal presentations to staff and at conferences and patient education.

Teaching nurses: The first theme identified both the informal and formal aspects of the role that the APNEs have demonstrated in sharing their own specialised knowledge with other nurses. The informal teaching by the APNEs occurred in the gastroenterological unit and in the colonoscopy area where the APNEs encouraged nurses to ask them questions about their role or about the procedure. While conducting the colonoscopy the APNEs spoke about what they were doing and why with the other nurses in the operating room.

The APNEs have been invited to and presented formally at forums and conferences regarding their role.

Patient education: In developing this role the APNEs have identified points of care where it was appropriate to provide patients with both verbal and written health promotion information.

- They provided this information in the Outpatient Clinic through encouraging patients to ask questions and discuss any queries that they may have about the procedure or their bowel care.
- On discharge they included post colonoscopy information such as complications to be aware of and managing haemorrhoids post-banding.

Eleven Months Reflection
Teaching nurses: The last few months have been very much focused on passing their own exams and obtaining the number of procedures required to achieve competency. Therefore there has been less emphasis on providing direct training or presentations to others. However, informal opportunities to teach nurses had continued in the gastroenterology unit.

The APNEs have started to consider succession planning and how best to support and mentor nurses into this advanced practice role.

- Developing an orientation package for nurses who may be embarking on the same advanced practice pathway

Their own professional development has also continued, with new learning needs identified.

- Inflammatory Bowel Disease
• Opportunity to attend theatre to observe bowel resections, hemicolecotomy. Purpose to really understand the anatomy of the bowel and the impact of surgery on the patient.

Summary
The activities in this domain were developing appropriately given the high demand on their time for their own professional development and clinical practice requirements. They demonstrated informal education of other nurses and provided appropriate patient education.

Additionally, awareness of their ongoing professional development needs is essential in an advanced practice role.

Domain 3 Scores - Education

<table>
<thead>
<tr>
<th>Month</th>
<th>Domain scores (24) NE1</th>
<th>Domain scores (24) NE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2017</td>
<td>16 (67%)</td>
<td>6 (25%)</td>
</tr>
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<td>February 2018</td>
<td>19 (79%)</td>
<td>23 (96%)</td>
</tr>
<tr>
<td>June 2018</td>
<td>23 (96%)</td>
<td>24 (100%)</td>
</tr>
</tbody>
</table>

Domain 4. Research
This domain required evidence of a culture of practice that challenged the norm, and sought better patient care through scientific inquiry. This included participation in conducting clinical research, identifying funding sources and using evidence to guide practice and policy.

Six Months Reflection
The APNEs identified that their activities in this domain were limited at this stage of their development as an advanced practitioner. However, they have demonstrated through their study, that they applied research evidence to their practice.

• Reviewed from the literature the latest approach to the management of haemorrhoids.

The APNEs have applied international standards/protocols to their system improvement initiatives.

• Referred to the latest national guidelines/protocols to change or update guidelines/protocols, such as bowel preparation.
Eleven Months Reflection
The APNEs continued to use evidence based practice to inform their decision making and quality improvement initiatives. This included continuing to access peer reviewed journals and national and international standards to analyse the evidence for both policy and practice development.

Information systems were being used by the APNEs to generate data to inform the clinical application and compliance of their role.

The APNEs have identified a few research topics and were starting to think about discussing collaborative research ideas with the colorectal surgeons.

- Whether or not to discontinue Aspirin prior to a colonoscopy was one such idea mentioned for exploration through a research.

Summary
There was evidence that the APNEs had incorporated some aspects of this domain into their practice.

It was not relevant in this short space of time of the pilot project for APNEs to initiate and conduct clinical trials as mentioned in the Advanced Practice Framework Research Domain. Undertaking research requires time and a particular knowledge and skill. It may not be appropriate for advanced nurses to generate research, without the relevant theoretical research background, however as demonstrated, they definitely have contributed to and applied research into practice.

Domain 4 Scores - Research

<table>
<thead>
<tr>
<th>Month</th>
<th>Domain scores (24) NE1</th>
<th>Domain scores (24) NE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2017</td>
<td>2 (8%)</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>February 2018</td>
<td>8 (33%)</td>
<td>17 (71%)</td>
</tr>
<tr>
<td>June 2018</td>
<td>10 (42%)</td>
<td>20 (83%)</td>
</tr>
</tbody>
</table>

Domain 5. Leadership
This domain included the activity of disseminating knowledge beyond the individuals' organisation, contributing to professional organisations and acting as a consultant to individuals and groups. The direct leadership activities included role modelling, influencing change and optimising patient outcomes.

Six Months Reflection
The interview themes included being part of the inter-professional team; managing the colonoscopy room and inspiring and motivating.

Being part of the inter-professional team meant that they were invited and expected to attend meetings and to contribute to the discussions about both
patient care and system improvements. The APNEs noticed that their involvement in the inter-professional team had gradually happened. This occurred as their skill and knowledge in ‘scoping’ and their confidence increased. Their role had been gradually absorbed into and was now part of the inter-professional team.

Managing the colonoscopy room: One of the important transitions the APNEs mentioned was the move from being an observer within the role of a gastroenterology nurse to being an Advanced Practitioner who was active in ensuring that the standards and culture in the colonoscopy room were set and maintained. They have introduced routines that ensured the correct processes within the colonoscopy room were followed and fostered open communication with all members.

- As the trainers became more confident in the APNEs’ skill and knowledge they slowly moved from being at the table to further back in the room.

Inspiring and motivating included role modelling of good practice, open communication and a patient centred approach by the APNEs to the other nurses.

- Encouraged the nurses to understand what was required for an advanced practice role.
- Wanted to encourage growth in the knowledge and skill level of the nurses in the unit.

Eleven Months Reflection
The theme inspiring and motivating continued to be strong. As the APNEs developed their own knowledge and skills, they shaped and influenced the role accordingly. With the support of nursing executive and their trainers the profile of advanced practice nurse in this area had been lifted. This was evidenced by the APNEs through an increase in the number of nursing colleagues who consulted with them on professional and patient matters as well as discussing future roles and study options.

Managing the colonoscopy room became easier over the months as they gained more experience and confidence in their ability to undertake independent clinical decision making while ‘scoping’. The trainers were present and supported the APNEs by enabling them to take the lead in running the colonoscopy room and in making key decisions related to the procedure.

Summary
The APNEs’ have advanced in this domain. They feel that they are respected for their contribution to the inter-professional team. Their contributions, in collaboration with their colleagues, have shaped policy and systems change adding value as a resource to the team.
They have taken the lead to shape the role and model of care for this hospital. This was done within their scope of practice, always with patients at the centre of the care.

Domain 5 Scores - Leadership

<table>
<thead>
<tr>
<th>Month</th>
<th>Domain scores (24) NE1</th>
<th>Domain scores (24) NE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2017</td>
<td>5 (21%)</td>
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</tr>
<tr>
<td>February 2018</td>
<td>10 (42%)</td>
<td>22 (92%)</td>
</tr>
<tr>
<td>June 2018</td>
<td>12 (50%)</td>
<td>24 (100%)</td>
</tr>
</tbody>
</table>

**Final Summary and Scores**

The process of intensive education, experience and clinical support from the trainers, nursing executive and colleagues has enabled the APNEs to demonstrate their development into an advanced practice role. This is evidenced through their own reflection and scoring over the last 12 months.

This role is appropriately stronger in the clinical care domain, however without their leadership skills they would not have influenced the system changes necessary to develop the APNE model of care.

The advances in their ability to clinically manage the requirements of the role have been supported through their trainers, the colorectal surgeons, being comfortable enough in the APNEs’ knowledge and skill to delegate appropriate patients into their care. In the procedure room trainers have moved from direct supervision (by the bedside) to indirect supervision (being in the room).

The APNEs are acutely aware of their boundaries of their scope of practice and their delegated responsibilities from the colorectal surgeons within this role. The patient’s safety, comfort and trust in the APNE is at the centre of this model of advanced practice.

**Total Domain Scores**

<table>
<thead>
<tr>
<th>Month</th>
<th>Domain scores (162) NE1</th>
<th>Domain scores (162) NE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2017</td>
<td>87 (54%)</td>
<td>32 (20%)</td>
</tr>
<tr>
<td>February 2018</td>
<td>114 (70%)</td>
<td>137 (85%)</td>
</tr>
<tr>
<td>June 2018</td>
<td>134 (83%)</td>
<td>159 (98%)</td>
</tr>
</tbody>
</table>
4.3 Cost Consequences for the skills training development of APNE

A cost-consequence approach was used to assess the costs and outcomes for the skills training of the APNEs to deliver this new model of care. The main costs considered were for the training of each nurse and comprised three components: initial training, financial contribution to support the training development component at the hospital site, and interstate project support (Table 16). The operational (colonoscopy) cost component of the financial contribution at the hospital site was excluded from the main costs, as this was agreed activity funding that has been allocated to the local health network to support additional activity for management of the colonoscopy waiting list and not as additional costs.

The main outcome was the projected number of additional procedures performed over a 5-year period. For the cost analysis, the average training cost per additional procedure was calculated to estimate the potential annual cost savings. The 2018 standardised annual cost savings were adjusted and discounted to 2017 values, and 5- and 10-year projections estimated. A discount rate of 5% was applied (Pharmaceutical Benefits Advisory Committee 2016). All costs are reported in Australian dollars.

Table 17 presents the inputs and outputs for the analysis of the full cost model and two scenarios for the completed only, cost model. The projected number of additional procedures per year over a 5-year period (2018-2022) was estimated based on an additional four, 4-hour sessions per APNE per week; this was then used to calculate the average training cost per additional procedure. Given the current average of 4 procedures per session, the projection of 5 procedures per session for the first year and 6 procedures per session for years 2-5 was based on the expected increase as a result of the APNE transitioning from novice to expert over time. For the two Nurse Endoscopist trainees who completed the training, an additional 1,840 procedures per year (5 procedures per session) and 2,208 procedures per year (6 procedures per session) could be performed. Thus, over a 5-year period, an additional 10,672 procedures could be performed by two nurses.

Based on the total training development cost of $648,869 for the three nurses (full model) and an additional 10,672 procedures performed over a 5-year period, the average training cost per additional procedure would be $61. Two comparators were considered as part of this analysis to aid in the interpretation of the impact of this model of care. If the current model of care continued at its current capacity, no additional procedures would be performed with increases in the number and time spent on the waiting list. Alternatively, the employment of two APNEs instead of two additional Consultants to perform the procedures would result in a cost saving of $105 per procedure (difference in salaries per hour multiplied by a 4-hour session and divided by 6 procedures per session). Over a 5-year period, the total potential cost saving would be $1.01 million (approximately $200,000 cost saving per year) based on a difference in salary
alone. Given this estimated cost saving, it would take 2.9 years to cover the total training development costs, based upon the three APNE’s.

The two scenarios for the completed only model, illustrate the change in outputs when the training costs for APNE 3 are excluded and the number of procedures per 4-hour session changes (scenarios 1 and 2 in Table 17). For nurses who complete the training and continue in the APNE role (completed only model), the average training cost per additional procedure decreases to $49 and the time required to cover the training costs decreases to 2.3 years (Table 17, Scenario 1). If the calculations were based on 6 procedures per session over the 5-year period, the average training cost per additional procedure decreases to $47 and the time required to cover the training costs decreases to 2.2 years (Table 17, Scenario 2).

For the initial investment in two nurses totalling $519,095, the total potential cost savings were estimated to be $1.8 million over 10 years. Thus, for every dollar invested the average return is 25%. However, the true return is likely to be higher, as this cost analysis is limited by the availability of data. The impact of reducing the number of patients and time spent on the waiting list are key unmeasured factors that would potentially influence the analysis in favour of this APNE model of care. The APNE would reduce the number of low risk, non-complex colonoscopy cases on the waiting list, thereby enabling the Consultants to focus on the high risk, complex cases. Consequently, this would reduce the time spent on the waiting list for all colonoscopy procedures, which could potentially impact on reducing bowel cancer mortality. Both factors are difficult to quantify given the expected increases in colonoscopy demand and bowel cancer incidence due to expansion of the program.

Table 16 Skills Training Development costs ($) per nurse endoscopist

<table>
<thead>
<tr>
<th>Cost component</th>
<th>Description</th>
<th>APNE 1</th>
<th>APNE 2</th>
<th>APNE 3*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial training</td>
<td>Course fees and travel, accommodation and meal allowance costs</td>
<td>28,348</td>
<td>28,348</td>
<td>14,174</td>
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<tr>
<td>Financial contribution to support training at the hospital site (training development component only)</td>
<td>E-logbook (iTMS) costs, equipment costs, salary, professional service fees for external clinical assessors and service contribution</td>
<td>228,696</td>
<td>228,696</td>
<td>114,348</td>
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<td>Interstate project support</td>
<td>On-site training fees, travel and accommodation costs</td>
<td>2,503</td>
<td>2,503</td>
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<tr>
<td><strong>Total training costs</strong></td>
<td></td>
<td>259,548</td>
<td>259,548</td>
<td>129,774</td>
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</tbody>
</table>

All costs in Australian dollars. APNE, Advanced Practice Nurse Endoscopist.

*Costs for APNE 3 reflect completion of half of the training.
### Table 17 Parameters for the analysis of the full and completed only models

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Full model (includes APNE 1, 2 and 3)</th>
<th>Completed only model (excludes APNE 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scenario 1</td>
<td>Scenario 2</td>
</tr>
<tr>
<td><strong>Inputs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training cost</td>
<td>$648,869</td>
<td>$519,095</td>
</tr>
<tr>
<td>Development cost</td>
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<td>$519,095</td>
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<tr>
<td>Salaries per hour</td>
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<tr>
<td>APNE (RN Level 4.1)</td>
<td>$65</td>
<td>$65</td>
</tr>
<tr>
<td>Consultant (MD029)</td>
<td>$222</td>
<td>$222</td>
</tr>
<tr>
<td>Session duration</td>
<td>4 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>Additional sessions per week per APNE</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Procedures per session per APNE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Years 2-5</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional procedures per year per APNE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of weeks in a year</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Year 1</td>
<td>920</td>
<td>920</td>
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<tr>
<td>Years 2-5</td>
<td>1,104</td>
<td>1,104</td>
</tr>
<tr>
<td>Training cost per additional procedure over 5 years</td>
<td>$61</td>
<td>$49</td>
</tr>
<tr>
<td>Cost saving per procedure*</td>
<td>$105</td>
<td>$105</td>
</tr>
<tr>
<td>Time required to cover training costs</td>
<td>2.9 years</td>
<td>2.3 years</td>
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</table>

All costs in Australian dollars. Scenarios 1 and 2 illustrate the change in outputs when the training costs for APNE 3 are excluded and the number of procedures per session in Year 1 changes from 5 to 6. The numbers highlighted in blue indicate change from the full model.

APNE, Advanced Practice Nurse Endoscopist.

*Based on the cost per procedure with 6 procedures per session performed by an APNE instead of a Consultant, i.e. the difference in salary alone.
Discussion

This study of the APNE role is an example of workforce innovation, whereby health professionals work at full scope of practice in an inter-professional environment that combines varying talents. The role reaches beyond the provision of a technical procedure, the breadth of which is intended to augment the current workforce, improve endoscopy services, and most importantly, improve patient outcomes.

The purpose of this study was to evaluate the impact of this model of care adding to the knowledge about the safety, acceptability, accessibility and the cost consequences of the APNE roles. A broad mixed methods framework evaluated an impact at three levels – system (structures and processes, networks, relationships) consumers and providers (Thompson et al 2014). In addition to this the nurses’ development of their scope of practice into advanced practice was explored, as well as the cost consequences of implementing the roles.

Full implementation of the project was achieved. The required number of colonoscopies for each APNE (n=200) was met within the established timeframe of 12 months. However, there was some additional time (3 months) required by one APNE to complete the assessment to the prerequisite level. Out of the original three APNEs who commenced, two completed. This is a realistic scenario that acknowledges that some nurses may choose not to continue or may take longer to complete the entire assessment components of the course. Individuals’ will vary in their ability to master a complex procedure, within a specific time and to the level required by the assessment standards. This should be considered in any future planning and costing of extending the number of APNEs.

Stephens et al (2015 p5057) outlines the components of a competent endoscopy recognising that the procedure requires both manual and dexterity skills as well as cognitive aspects. “The procedural skills refer to the ability of endoscopists to insert/withdraw the endoscope, navigate the alimentary tract with acceptable views and perform further actions such as biopsy, polypectomy. The challenge is to undertake these actions in a timely manner that exposes the patient to acceptable risk of complications. These skills are measured against accepted key performance indicators such as overall procedural time, caecal intubation time, caecal intubation rate, polyp/adenoma detection rate, depth of insertion, adequacy of views on review of video footage, rate of complications and patient satisfaction.

System Impact

A series of key performance indicators were used to measure the impact and quality of the APNE model of care. These included measures of activity such as the number of procedures per session per day; Patient flow times and number of colonoscopies performed per annum. The two APNEs completed their training by having performed 200 colonoscopies, and a minimum of 100 unassisted colonoscopies per APNE (APNE 1=201; APNE 2=208). This was a significant achievement given the number of challenges such as cancellations, scheduling procedures and the availability of anaesthetists and medical trainers. Thompson et al (2014) study reported that it took
15 months for their first nurse endoscopist to reach over 200 unassisted colonoscopies.

Another key activity that had an impact on the system was the patient flow time from when the patient entered the operating theatre until the time they left the operating theatre. As the APNE’s experience and confidence grew the patient flow time reduced significantly. As evidenced by the patient flow time recorded August 2017 (APNE 1=56min: APNE 2=61min) and eight months later April 2018 (APNE 1 =49min: APNE 2=39min). The APNE patient flow time, should continue to reduce as they gain more experience and improve their dexterity in managing the procedure. Staff through the survey noted this additional length of time required by the APNEs in the operating room, which occasional crossed over into the next booked session. Delays were due to a range of clinical demands such as medical emergencies that staff do not have control over.

The overall throughput volume, total number of procedures, was 3 to 4 per session and increased to 5 patients per session at completion of the program. This was also an activity the APNE’s did not have control over. However, with a faster patient flow time and regular patient scheduled sessions it was noted in the future that this will increase to 5-6 patients per session, with the goal of up to 1000 colonoscopies per year. This is where the APNE may have the biggest impact on the systems waiting list, but noting that there would be a cost of this increased through-put on the system. One of the other challenges would be aligning the APNE procedures to that of one of the colorectal surgeons. Indirect supervision by medical specialists was supported by Hui et al (2015) where they acknowledged that adequate supervision of nurse endoscopists was achieved through a parallel procedure room design.

The proficiency measures of the APNE included caecal intubation rates, mean withdrawal time, adenoma detection rates and polyp retrieval. The APNE each achieved higher caecal intubation rates than the recommended target of 90% (APNE 1= 97% and APNE 2=98%).

For both APNE the mean withdrawal time was approximately 16 minutes. Withdrawal time is secondary to adenoma detection rates as a quality measure. There is increased detection rate of significant neoplastic lesions in colonoscopic examinations in which the average time is ≥6 minutes (Day 2015). The APNE Adenoma detection rate was APNE 1=34% and APNE 2=36%. The benchmark is ≥25% for eligible patients. Eligible patients” are 50 years or older, have intact colons, do not have a finding of acute Inflammatory Bowel Disease and were intubated to the caecum or terminal ileum (Gastroenterological Society of Australia Adult Colonoscopy Criteria 2018). Both of the APNEs achieved this benchmark with (APNE 1=31% and APNE 2=30%) for patients over the age of 50%. The APNEs have performed polypectomies unassisted.

This information is evidence of their procedural skills that refer to their ability to insert/withdraw the endoscope, navigate the alimentary tract with acceptable views and perform further actions such as a polypectomy. These activities occurred without any adverse events directly related to the actions (knowledge and skills) of the APNEs. As noted by the APNEs through the interviews and reflection on the development of their role, the advances in their ability to clinically manage the requirements have been
supported through their trainers, the colorectal surgeons, being comfortable in the APNEs’ knowledge and skill to delegate appropriate patients into their care. In the procedure room trainers have moved from direct supervision (by the bedside) to indirect supervision (being in the room). Once credentialed the APNEs will be embedded within the colorectal team with indirect supervision from a medical proceduralist in a room near-by (parallel room design).

The non-technical (cognitive) skills required of endoscopists in a broader sense are identified by Stephens et al (2015 p5057) as “recognising and interpreting gross pathology; interpreting the patient’s clinical picture in relation to endoscopic findings; understanding the patient’s current clinical risk and how this could change with/without further endoscopic treatment; knowledge of any viable alternatives to endoscopic procedures that could better serve the patient; recommending treatments/further investigations appropriate to the severity of pathology seen; and understanding the indications and contraindications for the proposed procedure”. These are not as easily measurable as Stephens et al (2015) identifies. However, the model of care developed by the APNE with nursing executive and the colorectal surgeons has embedded into the clinical governance of their role the structures, process, policies and procedures that provided the checks and balances required to ensure that the APNE is working within their delegated scope of practice. This then enables the APNE to undertake the non-technical skills as outlined by Stephens et al (2015) which has set this particular role apart from other current models where the nurse endoscopists main focus is the procedure.

The Consumers

The APNE model of care brings the APNE into contact with the patient in the outpatient setting. This opportunity enabled the nurses to engage with the patients/family, answer any questions, gain consent and to assess for additional risks, consulting with the anaesthetist as required. The next point of patient contact was in the room prior to the colonoscopy being undertaken. The APNEs make the time to meet with the patient, answer any further questions and provide reassurance about the procedure. Once the colonoscopy was completed the APNEs once again have a discussion with the patient/family about the outcome and further discharge information. This approach was supported by Nasiri, Kheiri et al (2016) study where they explain that care management is crucial to patient satisfaction which embraces multiple factors including post-intervention visits, pain control, friendliness of the theatre room staff and information provided throughout the procedure.

This interaction with the APNEs was very satisfactory from the patients’ viewpoint as evidenced in the positive responses from the patient survey data. Not only were they satisfied with the amount of information they received, but they were also very satisfied overall with the colonoscopy and would have their next one booked with the APNE. Importantly the majority of respondents experienced no pain or discomfort during or after their colonoscopy.

This positive experience was also reported by Thompson et al (2014 p7) study where they reported that the patients were satisfied with the “personal manner and technical
skills of the nurse endoscopist”. Very few patients refused to have their endoscopy performed by a nurse in their study (Thompson et al 2014). This was a similar experience for this study.

The Providers
APNE scope of practice involved a comprehensive pathway of care. A process of delegated responsibilities from the colorectal surgeons to the APNEs was mapped through the pathway. This commenced from the time the referral was received to the discharge of patients back to their General Practitioner. The discharge arrangements included discussion of the procedure outcome with the patient (and family), review of pathology results and at times referral for additional follow-up at relevant clinics. This different approach highlights the importance of the inter-professional collaboration between the APNE the colorectal surgeons, anaesthetists and the ward staff of the gastroenterology unit.

The acceptability of the role to consultants/medical officers and other nursing staff within the unit was important for the sustainability of these positions. In the interviews with the APNEs they recognised that as their knowledge, skills and clinical confidence increased so had the respect they felt they received from their colleagues.

The staff survey indicated overall support for the introduction of this role. The majority of staff considered that the APNE’s do have the knowledge and skills to provide patients with information and refer patients appropriately. The staff participant responses indicated that there were some participants who did not fully understand the high level of preparation, education and training required, the extent of the scope of the role and where the role fitted within the unit. However, the majority agreed that the positions in the unit would improve patient access. These results indicated that more information to staff is required to inform them about the level of preparation required, the pathway of care and the scope of the role. The participants understood the difference between this role and that of the gastroenterology nurses. They also very strongly agreed that the medical specialists were the most appropriate trainers and supervisors for these positions. The participants noted that colonoscopies were taking longer which impacted on session time. The participants further acknowledged that once the patient flowthrough increased then this role may make an impact upon colonoscopy waiting lists.

The APNE role must include the core education and skills training, medical monitoring and supervision and support by Nursing Executive. The use of dedicated resources such as access to anaesthetists, procedure room and equipment must be factored into the role.

The Costs
There are significant costs associated with the skills training and establishment of these roles however the costs can be recovered over-time. For a projected additional 10,672 procedures over a 5-year period, the average training cost per additional procedure would be $61 and $49 for the full model and for nurses who complete the training, respectively. The employment of two APNEs instead of two additional
consultants to perform the procedures would result in a cost saving of $105 per procedure (approximately $200,000 cost saving per year) and would take 2.3 years to recover the training development costs for nurses who continue in the APNE role (Table 17, p 41). For the initial investment in two nurses totalling $519,095, the total potential cost savings were estimated to be $1.8 million over 10 years. Thus, for every dollar invested the average return is 25%. To achieve this the health service executive must enable a planned list of colonoscopies with access to procedure rooms and anaesthetists. This needs to be in parallel with medical availability. Therefore the APNE must commit to remaining within the department for a period of time to enable the training costs to be realised, up to 2.2 years. This should be made very clear as part of their contract at interview stage.

**Limitations**

This study was limited to two APNEs located in one health service in South Australia. Data related to length of waiting times was incomplete due to system limitations.

**Conclusion**

In light of the impending demand on endoscopic services in SA Health as well as the aims of the Department for Health and Wellbeing’s Strategic Direction 2016-2018, an Advanced Practice Nurse Endoscopist Model of Care is a safe and acceptable model to introduce into the workforce.

The APNE role must include the core education and skills training, clinical competency assessment, medical supervision and support by Nursing Executive. The use of dedicated health service resources such as access to anaesthetists, procedure room and equipment must be factored into the role. Skills training is resource-intensive and requires sufficient critical mass of medical proceduralists to support the process. The training timeline should be flexible to accommodate differences in learning competencies and time requirements of each APNE as well as time to overcome the challenges in achieving the required number of colonoscopy procedures.

The comprehensive pathway of care developed for this pilot project brings benefits to system improvements, effective coordination and continuity of care and delivers on patient satisfaction with evidence of some enhancements to better health outcomes for patients. A move away from a comprehensive model of care provided by the APNEs to only undertake colonoscopies, as occurred in other jurisdictions of Australia, would be a retrograde step in the effectiveness and efficiency this role.

There are costs associated with the education, skills training, medical supervision and the organisational establishment and resources for these roles, however there is no difference in the costs associated with training compared with other health practitioners required to meet the GESA criteria. Upon credentialing, the APNE should be integrated into the multidisciplinary workforce to support the management of the current SA Health colonoscopy waiting list.
References


NewsRx, Gastroenterology; Research from Swansea University Reveals New Findings on Gastroenterology [Development and validation of the Gastrointestinal Endoscopy Satisfaction Questionnaire (GESQ)]. Clinical Trials Week, 2016.


Appendix 1. SA Health Nurse Endoscopist Model of Care

**NURSE ENDOSCOPY MODEL OF CARE**

- **Interprofessional Collaboration:**
  - Meetings: clinical, administrative
  - Presentation: meetings, conference
  - Consultation and referral

- **Nurse Endoscopy list:**
  - Manage and perform nurse-led colonoscopy list
  - Provide reports on endoscopy procedures
  - Maintain procedural log book
  - Follow up histology

- **Nurse Pre-Assessment Clinic:**
  - Assess GP referral patient in clinic and consider for endoscopy procedure
  - Pre procedure assessment for patients from the National Bowel Cancer Screening Program

- **Nurse Post-Endoscopy Review Clinic:**
  - Review patients after endoscopy in clinic
  - Review histology reports
  - Onward referral to other services

- **Patient Education:**
  - Provide pre-and post-operative supportive care
  - Develop and update patient education materials
  - Health promotion and health education of National Bowel Cancer Screening patients
  - Facilitate onward referrals
  - Provide assistance to gastroenterology patients with general queries

- **Training:**
  - Provide education to staff
  - Provide resources such as patient information pamphlets at request
  - Support and guidance for Nurse Endoscopist trainees
  - Participate in professional development

- **Monitoring and Evaluation:**
  - Develop and maintain bowel cancer screening and follow-up patients
  - Translating evidence into practice
Appendix 2.  APNE skills training pathway

TRAINING MODULE

1a. Theoretical Advanced Endoscopy
(20 Credits at level 7)

1b. Investigation & Initial Management of GI Disease II (20 Credits at level 7)

1c. The Practice of Colonoscopy

2a. Skill Development Workshop 1
(three days, including interactive theory sessions, clinical observation and practical simulation training

2b. Skill Development Workshop 2
(three days, including interactive theory sessions and a hands-on workshop with actual patients)

2c. Skill Development Workshop 3
(three days, including interactive theory sessions, observational and hands-on supervised training)

MODULE 2: SKILL TRAINING & DEVELOPMENT

Supervised clinical practice in Colonoscopy (at least 12 months)
- Minimum of 2 training lists*/week
- Access to ad hoc training lists

END OF TRAINING

ASSESSMENT

Assessment as determined by The University of Hull

Assessment as determined by The University of Hull

Assessment as determined by The University of Hull

E-learning Package On-line Examination

Colonoscopy Tip Control Competence Assessment

Colonoscope Insertion Competence Assessment

Formal Formative DOPS Assessment

2 cases, 1 DOPS for baseline

Quarterly formal Formative Directly Observed Procedural Skills (DOPS) Assessment

Opportunistic DOPS Assessment for snare

Quarterly Interim Professional Development Review, including assessment of Skills for Health endoscopist-related competencies

Final End of Program DOPS Assessment - minimum of two independent, expert assessors

2 cases, 4 DOPS

Requirements
1. Perform a minimum of 109 unassisted, unsupervised, complete colonoscopies
2. Aim to complete 200 colonoscopy procedures in total
3. Perform successful snare polypectomies on > 30 patients
4. Achieve at least 90% caecal intubation rate by the completion of training
Appendix 3. APNE Trainee Role Description

Central Adelaide Local Health Network (CALHN)

ROLE DESCRIPTION

<table>
<thead>
<tr>
<th>Role Title:</th>
<th>Nurse Consultant (Nurse Endoscopist Trainee)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification Code:</td>
<td>Registered Nurse/Midwife Level 3</td>
</tr>
<tr>
<td>LHN/ HN/ SAAS/ DHA:</td>
<td>CALHN</td>
</tr>
<tr>
<td>Hospital/ Service/ Cluster</td>
<td>The Queen Elizabeth Hospital (TQEH) / Surgical / Nursing</td>
</tr>
<tr>
<td>Division:</td>
<td>Surgical Directorate</td>
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<tr>
<td>Department/Section / Unit/ Ward:</td>
<td>Gastroenterology Unit (GEU)</td>
</tr>
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<td>Role reports to:</td>
<td>Operationally: Nursing Director Perioperative services TQEH</td>
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<tr>
<td>Role Created/ Reviewed Date:</td>
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<tr>
<td>Criminal History Clearance Requirements:</td>
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</table>

ROLE CONTEXT

Primary Objective(s) of role

The SA Health Advanced Practice Nurse Endoscopist Model of Care pilot project provides an opportunity for nurse clinicians to work towards the advanced level and involves the education and training of three nurses to be able to perform low-risk non-complex colonoscopies as part of a multidisciplinary team.

Working in a multi-disciplinary team to embed the new advanced practice model of care, the Nurse Consultant (Nurse Endoscopy trainee) will be responsible for:

- Providing clinical nursing expertise and leadership.
- Establishing a safe working environment in which patients receive a high standard of care.
- Performing endoscopic surveillance colonoscopy procedures and reporting findings appropriately and effectively.
- Conducting pre and post procedure clinics to assess the patient, reviewing findings and undertake health education.
- Contribute to policy and process development and clinical protocol to ensure an efficient and effective service.

The Nurse Consultant (Nurse Endoscopist trainee) will be required to:

- Undertake and successfully complete the endoscopy education and training competency program, under the guidance of the program’s medical supervisors.
- Undertake and successfully complete a Graduate Certificate for the theoretical component of the training program.
Direct Reports
The Nurse Consultant (Endoscopist Trainee) reports:
- Operationally to: Nursing Director Perioperative services TQEH
- Professionally to: Nursing Director Perioperative services TQEH

Key Relationships/Interactions

Internal
- Maintains cooperative and productive working relationships with the Nurse Endoscopy Training program’s medical supervisors, project team, nurses, medical and administrative staff, as well as the, broader members of the health care team.
- Responds promptly to conflict resolution adopting a consultative approach to problem solving.

External
- Maintains cooperative and productive working relationships with the Nurse Endoscopy Training program education provider, patients/clients and relevant government and non-government organisations as required for meeting the needs of the client group.

Challenges associated with Role
Major challenges currently associated with the role include:
- Balancing competing priorities and delivering a high quality service.
- Undertaking and successfully completing the endoscopy training and competency program thereby providing independently conducted flexible colonoscopy.
- Undertaking and successfully completing the Graduate Certificate program for the theoretical component of the program.

Delegations
Whilst the incumbent will not hold finance or HR delegations they are required to comply with relevant delegation policies and procedures.

Resilience
SA Health employees persevere to achieve goals, stay calm under pressure and are open to feedback.

Performance Development
The incumbent will be required to participate in the organisation’s Performance Review & Development Program which will include a regular review of the incumbent’s performance against the responsibilities and key result areas associated with their position and a requirement to demonstrate appropriate behaviours which reflect a commitment to SA Health values and strategic directions.

General Requirements
Managers and staff are required to work in accordance with the Code of Ethics for South Australian Public Sector, Policies and Procedures and legislative requirements including but not limited to:
- Work Health and Safety Act 2012 (SA) and when relevant WHS Defined Officers must meet due diligence requirements.
- Return to Work Act 2014 (SA), facilitating the recovery, maintenance or early return to work of employees with work related injury / illness.
- Meet immunisation requirements as outlined by the Immunisation Guidelines for Health Care Workers in South Australia 2014.
- Equal Employment Opportunities (including prevention of bullying, harassment and intimidation).
- Children’s Protection Act 1993 (Cth) – ‘Notification of Abuse or Neglect’.
- Disability Discrimination.
• Information Privacy Principals Instruction – Premier and Cabinet Circular 12.
• Relevant Awards, Enterprise Agreements, Public Sector Act 2009, Health Care Act 2008,
• Relevant Australian Standards.
• Duty to maintain confidentiality.
• Smoke Free Workplace.
• To value and respect the needs and contributions of SA Health Aboriginal staff and clients, and
  commit to the development of Aboriginal cultural competence across all SA Health practice and
  service delivery.
• Applying the principles of the South Australian Government’s Risk Management Policy to work as
  appropriate.

Handling of Official Information
• By virtue of their duties, SA Health employees frequently access, otherwise deal with, and/or are
  aware of, information that needs to be treated as confidential.
• SA Health employees will not access or attempt to access official information, including confidential
  patient information other than in connection with the performance by them of their duties and/or as
  authorised.
• SA Health employees will not misuse information gained in their official capacity.
• SA Health employees will maintain the integrity and security of official or confidential information for
  which they are responsible. Employees will also ensure that the privacy of individuals is maintained
  and will only release or disclose information in accordance with relevant legislation, industrial
  instruments, policy, or lawful and reasonable direction.

Special Conditions
• It is mandatory that no person, whether or not currently working in SA Health, will be eligible for
  appointment to a position in SA Health unless they have obtained a satisfactory Background Screening
  and National Criminal History Clearance.
• Prescribed Positions under the Children’s Protection Act (1993) must obtain a satisfactory Background
  Screening and National Criminal History Clearance through the Screening and Licensing Unit,
  Department for Communities and Social Inclusion.
• Background Screening and National Criminal History Clearances must be renewed every 3 years
  thereafter from date of issue for ‘Prescribed Positions’ under the Children’s Protection Act 1993 (Cth)
  or ‘Approved Aged Care Provider Positions’ as defined under the Accountability Principles 1998 made
  in pursuant to the Aged Care Act 2007 (Cth).
• Depending on work requirements the incumbent may be transferred to other locations across SA
  Health to perform work appropriate to classification, skills and capabilities either on a permanent or
  temporary basis subject to relevant provisions of the Public Sector Act 2009 for Public Sector
  employees or the
• The incumbent may be required to participate in Counter Disaster activities including attendance, as
  required, at training programs and exercises to develop the necessary skills required to participate in
  responses in the event of a disaster and/or major incident.
• The incumbent will:
  o Be required to undertake interstate travel to attend Nurse Endoscopy residential training
    workshops through the training period.
  o Undertake and successfully complete the Nurse Endoscopy training and competency program
    (to ultimately independently perform colonoscopy), under the guidance of the program’s
    medical supervisors.
  o Undertake and successfully complete a Graduate Certificate in Colonoscopy for the
    theoretical component of the Nurse Endoscoast program.
# Key Result Area and Responsibilities

<table>
<thead>
<tr>
<th>Key Result Areas</th>
<th>Major Responsibilities</th>
</tr>
</thead>
</table>
| Work in the multi-disciplinary team to develop the role of the Nurse Endoscopist by: | • Performing nurse-led colonoscopy procedures and reporting findings appropriately and effectively.  
   • Achieving competencies required throughout training including all theoretical assessments, skills training and development assessments and Directly Observed Procedural Skills (DOPS) assessments.  
   • Achieving proficiency requirements by the completion of training:  
     o Perform a minimum of 100 unassisted, unsupervised, complete colonoscopies  
     o Complete 200 colonoscopy procedures in total  
     o Perform successful snare polypectomies on at least 30 patients  
     o Achieve at least 90 per cent cecal intubation rate  
   • Establishing a safe working environment in which patients receive a high standard of nursing care.  
   • Ensuring continuity of care which is patient centred, outcome orientated and focused towards discharge planning.  
   • Making clinical and professional autonomous decisions on a daily basis.  
   • Facilitating a collaborative model of patient transition through various levels of health care delivery, including the acute setting, extended care facilities, community based and primary care providers, as required.  
   • Contributing to the development of criteria for the selection of patients within the Nurse Endoscopy Model of Care in accordance with national and international guidelines and standards. Audit outcomes in conjunction with members of the multi-disciplinary team.  
   • Conducting pre and post procedure clinics to assess the patient, reviewing findings and undertaking health education.  
   • Assessing the risks involved in the care of patients and developing integrated pathways, and protocols to minimise those risks.  
   • Establishing and participating in monitoring methods for the scheduling of procedures and, in collaboration with the multidisciplinary team, ensure compliance with surveillance protocols.  
   • Identifying patients with potential ongoing health care needs and coordinate the establishment of appropriate individualised plans of care to meet defined needs in the most effective manner.  
   • Contributing to the development of an effective discharge plan and providing appropriate patient education and referral to appropriate community providers.  
   • Liaising with the multi-disciplinary health care team to achieve the desired patient outcomes.  
   • Acting as a liaison and resource to all staff within the organisation regarding strategies for patient care management within scope of practice.   |
<table>
<thead>
<tr>
<th><strong>Contribute to and support Health Service System by</strong></th>
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<tbody>
<tr>
<td></td>
<td>• Writing reports as required documenting the progress of the service against targets and timelines.</td>
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<tr>
<th><strong>Contribute to and support Health Service System by</strong></th>
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<tbody>
<tr>
<td></td>
<td>• Contributing specific expertise to nursing practice through clinical protocol and standard development within scope of practice.</td>
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<tr>
<td></td>
<td>• Participating in service planning activities to identify service needs and inform professional development plans.</td>
</tr>
<tr>
<td></td>
<td>• Projecting a focus that promotes efficiency and cost effectiveness as well as demonstrating flexibility and creativity in identifying resources to meet patient care needs.</td>
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<table>
<thead>
<tr>
<th><strong>Apply and share expert clinical knowledge to improve patient/client care outcomes.</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Fostering an environment that promotes the education of patients and their significant others.</td>
</tr>
<tr>
<td></td>
<td>• Providing education and training for patients, their carers’ and other personnel, where necessary, to enable them to understand their condition and to care for themselves safely at home.</td>
</tr>
<tr>
<td></td>
<td>• Providing a source of current highly specialist nursing information and teaching in the clinical environment.</td>
</tr>
<tr>
<td></td>
<td>• Educating the healthcare team regarding the concept and role of the Nurse Consultant (Nurse Endoscopist).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Practice within an evidence-based framework by</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Working in conjunction with other nurse specialists to lead and participate in research, which will improve nursing care, contribute to nursing knowledge in the unit and to the profession.</td>
</tr>
<tr>
<td></td>
<td>• Providing clinical and professional advice relating to research undertaken in the sphere of practice and share the importance of relevant research findings.</td>
</tr>
<tr>
<td></td>
<td>• Contributing to evidence based practice.</td>
</tr>
<tr>
<td></td>
<td>• Participating in the evaluation of the Nurse Endoscopist Model of Care project.</td>
</tr>
<tr>
<td></td>
<td>• Initiating and/or become involved in research projects in response to identified needs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Lead clinical practice within a the agreed professional practice framework by:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Leading nursing clinical practice and contributing specific expertise to nursing practice through the development and promulgation of clinical protocols and standards.</td>
</tr>
<tr>
<td></td>
<td>• Contributing to embedding the Nurse Endoscopist model of care and scope of practice in collaboration with medical specialists and nurses, with reference to other nurse-led endoscopy services nationally and internationally.</td>
</tr>
<tr>
<td></td>
<td>• Providing effective and consistent leadership and ensure that communication is effective between patients, relatives and members of the interprofessional team.</td>
</tr>
<tr>
<td></td>
<td>• Presenting as a role model for all members of the multi-disciplinary team demonstrating clinical management integrity, demonstrating vision, openness and flexibility.</td>
</tr>
<tr>
<td></td>
<td>• Acting as a coach, mentor and resource person, to share expertise with other health care professionals.</td>
</tr>
<tr>
<td></td>
<td>• Presenting to relevant forums and conferences on the Nurse Endoscopist role.</td>
</tr>
<tr>
<td></td>
<td>• Being responsible for own professional development and prepared to undertake additional training if required.</td>
</tr>
</tbody>
</table>
Knowledge, Skills and Experience

Educational/Vocational Qualifications
1. Registered or eligible for registration as a Nurse/Midwife by the Australian Health Practitioner Regulatory Authority (AHPRA) and who holds, or who is eligible to hold, a current practicing certificate.

Personal Abilities/Aptitudes/Skills:
2. Highly motivation and willingness to learn, expressing a commitment to undertake and complete the training program requirements for the Nurse Endoscopy program.
3. Demonstrated experienced clinical assessment, clinical reasoning skills, problem solving, critical thinking and organisational skills including the ability to work autonomously, using own initiative appropriately.
4. Evidence of professional leadership and the provision of high quality patient care.
5. Demonstrated ability to be innovative, resourceful and adaptive to change including: highly developed skills in communication, conflict resolution and negotiation skills.
6. Demonstrated ability to practice collaboratively as part of the multidisciplinary health care team, work as a member of a team as leader or member, and contribute to the spirit of team cooperation.

Experience
7. Registered nurse with a minimum of three [3] years' experience within gastroenterology nursing, and demonstrated experience and competence within this scope of nursing practice.
8. A sound understanding of information technology, use of computers and software including clinical and risk management reporting systems, as required for the role and relevant to the area of practice.

Knowledge
10. Knowledge and understanding of the relevant legislation, standards, guidelines, competencies, ethics, codes and industrial agreements as they relate to nurses and midwives and their practice settings.

DESI RABLE CHARACTERISTICS

Educational/Vocational Qualifications
11. Have or be working towards a Post Graduate studies.

Personal Abilities/Aptitudes/Skills:
12. Ability to undertake presentations to community and professional groups.
13. Working knowledge of EPAS
14. Working Knowledge of Provation

Experience

Knowledge
Organisational Context

Organisational Overview:
Our mission at SA Health is to lead and deliver a comprehensive and sustainable health system that aims to ensure healthier, longer and better lives for all South Australians. We will achieve our objectives by strengthening primary health care, enhancing hospital care, reforming mental health care and improving the health of Aboriginal people.

SA Health is committed to a health system that produces positive health outcomes by focusing on health promotion, illness prevention and early intervention. We will work with other government agencies and the community to address the environmental, socioeconomic, biological and behavioural determinants of health, and to achieve equitable health outcomes for all South Australians.

Our Legal Entities:
SA Health is the brand name for the health portfolio of services and agencies responsible to the Minister for Health and Ageing and the Minister for Mental Health and Substance Abuse.

The legal entities include but are not limited to Department for Health and Ageing, Central Adelaide Local Health Network, Northern Adelaide Local Health Network, Southern Adelaide Local Health Network, Women’s and Children’s Health Network, Country Health SA Local Health Network and SA Ambulance Service.

Local Health Network CALHN
Values

SA Health Values
The values of SA Health are used to indicate the type of conduct required by our employees and the conduct that our customers can expect from our health service:

- We are committed to the values of integrity, respect and accountability.
- We value care, excellence, innovation, creativity, leadership and equity in health care provision and health outcomes.
- We demonstrate our values in our interactions with others in SA Health, the community, and those for whom we care.

Code of Ethics
The Code of Ethics for the South Australian Public Sector provides an ethical framework for the public sector and applies to all public service employees; it sets out the South Australian Public Sector values as:

- Service – Proudly serve the community and Government of South Australia.
- Professionalism – Strive for excellence.
- Trust – Have confidence in the ability of others.
- Respect – Value every individual.
- Collaboration & engagement – Create solutions together.
- Honesty & integrity – Act truly, consistently, and fairly.
- Courage & tenacity – Never give up.
- Sustainability – Work to get the best results for current and future generations of South Australians.

The Code recognises that some public sector employees are also bound by codes of conduct relevant to their profession.

Approvals

Role Description Approval
I acknowledge that the role I currently occupy has the delegated authority to authorise this document.

Name: 
Role Title: 
Signature: 
Date: 

Role Acceptance

Incumbent Acceptance
I have read and understand the responsibilities associated with role, the role and organisational context and the values of SA Health as described within this document.

Name: 
Signature: 
Date: 

For Office Use Only if A1

Page 8 of 8
Appendix 4. Business Case Summary of Key Performance Indicators

The establishment of the Nurse Endoscopist model aims to improve productivity and enable more effective, efficient and accessible endoscopic services to better address the increasing demand.

To drive the Nurse Endoscopist model towards the achievement of the business case goal, four (4) categories of Key Performance Indicators (KPIs) will be employed refer to Table 18.

Table 18 Summary of Key Performance Indicators

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Performance Indicator</th>
<th>Covered in method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Efficiency</td>
<td>Throughput volume</td>
<td>10 a1</td>
</tr>
<tr>
<td>1.2</td>
<td>Efficiency</td>
<td>Patient flow time (minutes)</td>
<td>10 a1</td>
</tr>
<tr>
<td>2.1</td>
<td>Proficiency</td>
<td>Number of colonoscopies performed per annum</td>
<td>10 a1</td>
</tr>
<tr>
<td>2.2</td>
<td>Proficiency</td>
<td>Caecal intubation rate determined by photodocumentation of caecal landmarks</td>
<td>10 a1</td>
</tr>
<tr>
<td>2.3</td>
<td>Proficiency</td>
<td>Mean colonoscopy withdrawal time</td>
<td>10 a1</td>
</tr>
<tr>
<td>2.4</td>
<td>Proficiency</td>
<td>Adenoma detection rate</td>
<td>10 a1</td>
</tr>
<tr>
<td>2.5</td>
<td>Proficiency</td>
<td>Polyp retrieval rate</td>
<td>10 a1</td>
</tr>
<tr>
<td>2.6</td>
<td>Proficiency</td>
<td>Percentage of adverse events and complications</td>
<td>10 a2</td>
</tr>
<tr>
<td>2.7</td>
<td>Proficiency</td>
<td>Consumer (Patient) feedback</td>
<td>10 b</td>
</tr>
<tr>
<td>3.1</td>
<td>Access</td>
<td>Incremental number of endoscopic procedures completed within the Endoscopy Unit</td>
<td>10 c</td>
</tr>
<tr>
<td>3.1</td>
<td>Access</td>
<td>Reduced length of procedure waiting times</td>
<td>10 c</td>
</tr>
<tr>
<td>4.1</td>
<td>Evaluation</td>
<td>Acceptability key staff</td>
<td>10 b</td>
</tr>
<tr>
<td>4.2</td>
<td>Evaluation</td>
<td>Scope of Practice</td>
<td>10 c</td>
</tr>
<tr>
<td>4.3</td>
<td>Evaluation</td>
<td>Economic analysis</td>
<td>10 c</td>
</tr>
</tbody>
</table>

1SA Health Nurse Endoscopist Model of Care Feasibility Business Case Extract Section 7, Page 47 - Key Performance Indicators
1.1 Indicator details – Throughput volume

**Description**
The number of procedures per room per day

**Rationale**
The throughput is a key indicator that gauges the productivity of the endoscopy unit by measuring the number of procedures performed per room per day. The introduction of Nurse Endoscopists should maintain at least the same productivity without exceeding hospital capacity. The Nurse Endoscopists are expected to fit in well with the multidisciplinary endoscopy team and be competent to perform colonoscopy independently.

**Reported benchmarks**
Number of procedures/room/day = 14-16

**Data source**
PROVATION / ORMIS

**Frequency of measurement**
Monthly

**Research Method**
10 a)

1.2 Indicator details – Patient flow time

**Description**
The length of time from when the patient is called by the preparation nurse to the time that patient leaves the unit.

**Rationale**
Patient flow time determines the upper limit of the procedures that can be undertaken within one session. Nurse Endoscopists must meet the same timing target as doctors and deliver appropriate care at the right time with medical liaison where required. In addition, nurse endoscopy allows doctors to attend to more complex and advanced endoscopic cases which in turn increase productivity.

**Reported benchmarks**
Compare FY 16/17 to FY 18/19 data

**Data source**
ORMIS

**Frequency of measurement**
Monthly

---

2 SA Health Nurse Endoscopist Model of Care Feasibility Business Case Extract Appendices, Section 12.1, Page 62 - 68 – KPI Descriptors
### 2.1 Indicator details – Number of colonoscopies performed per annum

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of colonoscopies performed per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>To ensure a Nurse Endoscopist meet the proficiency level, a Nurse Endoscopist must reach the recommended performance target which is strongly associated with clinical outcomes.</td>
</tr>
<tr>
<td><strong>Reported benchmarks based on expert opinion</strong></td>
<td>For each medical proceduralist must perform more than 250 procedures per five year.</td>
</tr>
<tr>
<td><strong>Recommended target</strong></td>
<td>Perform a minimum of 200 procedures per year to maintain competency</td>
</tr>
<tr>
<td><strong>Data source</strong></td>
<td>PROVATION / ORMIS / NE tracking spreadsheet and iTems (SETC)</td>
</tr>
<tr>
<td><strong>Frequency of measurement</strong></td>
<td>Monthly</td>
</tr>
</tbody>
</table>

### 2.2 Indicator details – Caecal intubation rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Caecal intubation rate determined by photo-documentation of caecal landmarks – marked in Provation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>Caecal intubation is defined as passage of the colonoscope tip to a point proximal to the ileocecal valve, so that the entire colon, including the medial wall of the caecum between ileo-caecal valve and appendice orifice, is visible. Photography of the caecal is mandated which allows verification of caecal intubation rates of individual endoscopists. Caecal intubation improves sensitivity and reduces costs by eliminating the need for radiographic procedures or repeat colonoscopy to complete the examination.</td>
</tr>
<tr>
<td><strong>Reported benchmarks based on expert opinion</strong></td>
<td>The caecal intubation rate for each medical proceduralist is 90% or greater for general patients and 95% or greater for screening patients.</td>
</tr>
<tr>
<td><strong>Recommended target</strong></td>
<td>Achieve a caecal intubation rate of 90% or greater</td>
</tr>
<tr>
<td><strong>Data source</strong></td>
<td>iTems (SETC) and NE tracking spreadsheet</td>
</tr>
<tr>
<td><strong>Frequency of measurement</strong></td>
<td>1-2 monthly</td>
</tr>
</tbody>
</table>

---


2.3 Indicator details – Mean colonoscope withdrawal time

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean colonoscope withdrawal time as clinically indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>Studies have demonstrated increased detection of significant neoplastic lesions in colonoscopic examinations in which the average withdrawal time is ( \geq 6 ) minutes. Withdrawal time is secondary to ADR as a quality measure. Reporting mean withdrawal times to colonoscopists with ADRs above targets may not be essential or useful(^8).</td>
</tr>
<tr>
<td>Reported benchmarks based on expert opinion</td>
<td>The mean colonoscope withdrawal time from the caecum for each medical proceduralist is 6 minutes or greater for procedures where there is no polypectomy performed(^9).</td>
</tr>
<tr>
<td>Data source</td>
<td>PROVATION / iTems and NE tracking spreadsheet</td>
</tr>
<tr>
<td>Frequency of measurement</td>
<td>1-2 monthly</td>
</tr>
</tbody>
</table>

2.4 Indicator details – Adenoma detection rate (ADR)

<table>
<thead>
<tr>
<th>Description</th>
<th>Adenoma detection rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>ADR is considered the primary measure of the quality of mucosal inspection and the most important quality measure in colonoscopy. There is a substantial interaction between ADR and recommended intervals for screening and surveillance, so that optimal patient safety cannot be correctly predicted without knowledge of both an adequate ADR and adherence to recommended intervals(^10). Colonoscopists with high ADRs clear colons better and bring patients back at shorter intervals because the recommended intervals are shorter when precancerous lesions are detected.</td>
</tr>
<tr>
<td>Reported benchmarks based on expert opinion</td>
<td>At least 25% in eligible patients. “Eligible patients” are 50 years or older, have intact colons, do</td>
</tr>
</tbody>
</table>

---


not have a finding of acute IBD and were intubated to the caecum or terminal ileum.\textsuperscript{11}

<table>
<thead>
<tr>
<th>Recommended target</th>
<th>Achieve an ADR &gt;25% in eligible patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>PROVATION / iTems (SETC) and NE tracking spreadsheet</td>
</tr>
<tr>
<td>Frequency of measurement</td>
<td>monthly</td>
</tr>
<tr>
<td>Research Method</td>
<td>10 (1)</td>
</tr>
</tbody>
</table>

### 2.5 Indicator details – Polyp retrieval rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Of polyps removed, the percent retrieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>Histological examination of the resected specimens is the only reliable way to classify polyps and to exclude malignancy and it is therefore essential to guide further clinical management\textsuperscript{12}</td>
</tr>
<tr>
<td>Reported benchmarks based on expert opinion</td>
<td>International guidelines recommend a minimum standard for polyp retrieval rate of &gt; 90% and a target of &gt;95% for experience endoscopists\textsuperscript{13}</td>
</tr>
<tr>
<td>Recommended target</td>
<td>The rate of polyp removal for pathological examination for each proceduralist is &gt;90%</td>
</tr>
<tr>
<td>Data source</td>
<td>iTems (SETC)</td>
</tr>
<tr>
<td>Frequency of measurement</td>
<td>monthly</td>
</tr>
<tr>
<td>Research Method</td>
<td>10 a(1)</td>
</tr>
</tbody>
</table>

- Indicator details – Percentage of adverse events and complications

<table>
<thead>
<tr>
<th>Description</th>
<th>The incidence of colonic perforation, sedation-related complications, haemorrhage associated with colonic polypectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>Although complications of colonoscopy are rare, they are potentially quite serious and life threatening. Less serious adverse events may occur frequently, resulting in lower patient adherence to follow-up colonoscopies in the surveillance program. Therefore, relevant quality indicators should be designed to better manage the risk of complications and propel endoscopists to carefully select patients for the appropriate interventions\textsuperscript{14}. They</td>
</tr>
</tbody>
</table>


are also expected to be familiar with the planned procedure and available technology, and be prepared to efficiently address any adverse events that may arise.

<table>
<thead>
<tr>
<th>Reported benchmarks based on expert opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Colonic perforation caused by colonoscopy is &lt;1 in 1,000 colonoscopy procedures (diagnostic or therapeutic)</td>
</tr>
<tr>
<td>• Post-polypectomy bleeding is &lt;1 in 100 patients who have had a polypectomy from procedure to hospital discharge</td>
</tr>
<tr>
<td>• Abnormal discomfort or pain is &lt; 1 in 100 patients</td>
</tr>
<tr>
<td>• Procedure related death within 30 days is &lt;1 in 10,000 patients</td>
</tr>
<tr>
<td>• Patient complaint about sedation &lt;1 in 100 patients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended target</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse events SLS / Patient Surveys / Risk Management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checked monthly</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (2)</td>
</tr>
</tbody>
</table>

2.6 Indicator details – Consumer feedback

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient experiences in colonoscopy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer feedback and raising concerns provides an opportunity to observe the quality of care from the perspective of patients who undergo colonoscopy. Patient experience with colonoscopy is important in evaluating both the performance of the procedures and the delivery of high-quality care. A satisfactory endoscopic experience will likely encourage return for follow-up, adherence to periodic screening and positive word-of-mouth communication. Quality measures include endoscopy unit staff manner, skills and specialty, facility environment, comfort, management of pain and anxiety, wait time and patient-physician communication. Global Rating Scale is a patient-centred quality assessment program that provides objective measures for the overall quality of the endoscopic service, which was widely adopted by endoscopy units in UK. Based on Vincent de Jonge’s study, GRS appeared to be an excellent tool for identifying service gaps in patient experiences during colonoscopy, which can serve as a guide for future improvement initiatives.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Reported benchmarks</strong> based on expert opinion</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended target</strong></td>
<td>100 (50 for each NE)</td>
</tr>
<tr>
<td><strong>Data source</strong></td>
<td>Patient survey</td>
</tr>
<tr>
<td><strong>Frequency of measurement</strong></td>
<td>commenced during the 12 month period</td>
</tr>
<tr>
<td><strong>Research Methods</strong></td>
<td>10(b)</td>
</tr>
</tbody>
</table>

### 3.1 Indicator details – Reduced length of procedure wait times

| **Description** | Measurable reduction of wait times on Colorectal Waiting List |
| **Rationale** | Shortening wait times requires the right number and mix of professionals. The introduction of Nurse Endoscopists is expected to effectively reduce the length of procedure wait times. |
| **Reported benchmarks based on expert opinion** | The UK has achieved improvements of patient waiting lists to two weeks for critical cases and six weeks for all other appropriate referrals. |
| **Recommended target** | The SA Health Colonoscopy Urgency Categorisation and Surveillance Timing Policy Guideline |
| **Data source** | Colorectal surgery Waiting List |
| **Frequency of measurement** | Collected over the 12 mth period |
| **Research Method** | 10(c) |

### 4.1 Acceptability key staff

| **Description** | The acceptability of the role by other health care professionals. |
| **Rationale** | The acceptability of the role to consultants/medical officers and other nursing staff within the unit is important. The Grattan Institute and Dr Stephen Duckett argued ‘that many studies show that appropriately trained nurses can provide endoscopies to at least the same level of safety, quality and patient satisfaction as doctors and that by engaging nurse endoscopists, specialists can free up time to spend on more complex cases and other procedures’ |
| **Reported benchmarks based on expert opinion** | Not applicable |
| **Recommended target** | Not applicable |
| **Data source** | Survey of staff satisfaction of the role |
| **Frequency of measurement** | One survey in the 12 mth period |
### 4.2 Scope of Practice

**Description**
The acceptability of the role by health care professionals.

**Rationale**
The development of the nurses to become advanced practitioners is important for the sustainability of the role into the future.

**Reported benchmarks based on expert opinion**
The Australian Advanced practice Nursing Self Appraisal Tool (Gardener et al 2017) will be used as a benchmark to evaluate the development of the professional role of the nurse endoscopist over the 12 moth pilot period.

**Recommended target**
Nurse Endoscopist trainees

**Data source**
Use of the Australian Advanced Practice Nursing Self-Appraisal Tool as a report of progress against the different domains. Interview nurse endoscopist trainees and analysis of scoring using the tool against each domain of advanced practice

**Frequency of measurement**
6 monthly

**Research method**
10 (d)

### 4.3 Economic Analysis

**Description**
Cost Consequences – provision of an alternative model of care to address the expected increase in demand by providing a lower cost model through workforce innovation and reform.

**Rationale**
The National Bowel Cancer Screening Program (NBCBP) having commenced in 2006, has introduced biennial screening to cover all Australians aged 50 – 74 by 2020. Up to 90% of bowel cancers can be treated effectively if found early but only if colonoscopies are readily available; evidence indicates waiting lists are growing.

The benefits of this approach allows the different professionals to work to their full scope of practice in a care model that combines the various talents and maximises the efficiency and effectiveness of the health care team in its delivery of health care services.

**Reported benchmarks based on expert opinion**
For each episode of care, resource use associated with relevant patient visits will be costed per patient. National Casemix funding established and patients will be tracked.
<table>
<thead>
<tr>
<th><strong>Recommended target</strong></th>
<th>Through the Unique Record Number (Case note file number) for each patient.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>Patient level resource use and cost data will be extracted from hospital data systems for patients who underwent an endoscopy (between June 2017 and July 2018); 12 months.</td>
</tr>
<tr>
<td><strong>Data source</strong></td>
<td>Identification and analysis of economic data (resource use and costs). Reporting requirements will be established and data extraction occur for analysis for hospital costs. No names will be recorded only the case note file number to allow for tracking across through Casemix.</td>
</tr>
<tr>
<td><strong>Frequency of measurement</strong></td>
<td>Data to be collected throughout the project period for analysis at the end of the project.</td>
</tr>
<tr>
<td><strong>Research method</strong></td>
<td>10 (f)</td>
</tr>
</tbody>
</table>

### Usual urgency categories for adults requiring diagnostic or surveillance colonoscopy

<table>
<thead>
<tr>
<th>Recommended Urgency Category</th>
<th>Symptoms/ Surveillance</th>
</tr>
</thead>
</table>
| 1 (within 30 days)           | • Faecal Occult Blood Test (FOBT) positive result, National Bowel Cancer Screening Program  
                               | • Clinically significant rectal bleeding                                                
                               | • Clinically significant iron deficiency anaemia                                         
                               | • Change in bowel habit with alarm symptoms                                             
                               | • Active or suspected inflammatory bowel disease (IBD) or diarrhoea where endoscopy is indicated to progress management  
                               | • Abnormal imaging where cancer is suspected                                           |
| 2 (within 90 days)           | • Change in bowel habit without alarm symptoms                                         
                               | • Persistent/chronic diarrhoea                                                         
                               | • Port diverticulitis                                                                  
                               | • Staged Surveillance Patient for whom a surveillance procedure is due within the next 90 days. This includes:  
                               | • Patients requiring initial surveillance following removal of certain adenomas or in certain circumstances post curative resection for obstructive colorectal cancer (CRC).  
                               | • Patients requiring surveillance related to family history or previous adenoma, curative resection for CRC or dysplasia in inflammatory bowel disease. |
| 3 (within 12 months)         | • Colonoscopy required within 365 days.                                                |
| 4 (not ready for care)       | • Staged Surveillance Patient for whom surveillance is planned at a set interval at some time in the future.  
                               | • Deferred Patient that requires a colonoscopy within the next 12 months but for whom the procedure has been deferred, either for clinical reasons (patient is temporarily unfit for procedure) or personal reasons.  
                               | • NOTE: A patient cannot be assigned as ‘ready for care’ on the Booking List Information System (BLIS) more than 12 months in advance. |


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18 Extract 12 Appendices, Section 12.1, Page 62 – Waiting List Categories Diagnostic or Surveillance Colonoscopy
Patient Survey
Participant Information Sheet

Title
Evaluating APNE roles in a metropolitan health service South Australia

Short Title
Evaluating APNEs

Protocol ID
(CALHN Ref: Q20170703. HREC/17/TQEH/150. SSA/17/TQEH/203)

Sponsor
Dr Lynette Cusack

Principal Investigator
Dr Lynette Cusack

Associate Investigators
Dr Philippa Rasmussen, Dr Tim Shultz, Prof Jon Karnon, Ms Debra Pratt, Ms Sonny Ward, Ms Sarah Hunter

Location
The Queen Elizabeth Hospital

Part 1 What does my participation involve?

1 Introduction

Patients at the QEH are invited to take part in this research project, “Evaluating APNE roles in a metropolitan health service South Australia”.

This Participant Information Sheet describes the research project. Knowing what is involved will help you decide if you want to take part. Please read this information carefully. Ask questions about anything that you do not understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative or friend.

Participation in this research is voluntary. If you do not wish to take part, you do not have to. If you decide you want to take part in the research project, please fill out the attached survey form and return to us via mail.

2 What is the purpose of this research?

Bowel cancer is the second most commonly diagnosed cancer with the majority of cases diagnosed in patients 50+. However, it can be treated effectively in 90% of cases if detected
early. However, a lack of access to endoscopic services results in a large number of people dying from potentially preventable conditions. A Nurse Endoscopic Model of Care is a cost effective model that will produce positive health outcomes for South Australians. By providing an effective avenue for disease prevention and early intervention, effective coordination and continuity of care, this model will significantly contribute to minimising the burden of disease on the health system. The overall purpose of this research is to evaluate a number of key performance indicators related to the safety, efficiency, proficiency, acceptability and accessibility of APNE roles.

3 What does participation in this research involve?
You are invited to participate in filling out the attached survey. The aim is to explore your experiences of receiving a colonoscopy from a APNE (NE).

4 What do I have to do?
Fill out the four page survey that has been provided to you and return to us via mail within 24 hours of being discharged. A reply paid envelope has been provided for your convenience. The survey should take between 15-30 minutes for you to complete.

5 Do I have to take part in this research project?
Participation in any research project is voluntary. If you do not wish to take part, you do not have to. You are free to withdraw from the project at any stage. Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your routine treatment, your relationship with those treating you or your relationship with the QEH.

6 What are the possible benefits of taking part?
There will be no clear benefit to you from your participation in this research. However, it is imperative to have a good understanding of patient experiences receiving care and a colonoscopy from NEs, so that we can understand what patients perceive as satisfactory care relating to the nurses personal manner and technical skills. This will help provide the appropriate support and training for the NE role.

7 What are the possible risks and disadvantages of taking part?
We do not foresee significant risk or disadvantage from patients being interviewed. If you are concerned about any possible risks or disadvantages, please talk with the researchers.

8 What if I withdraw from this research project?
If you decide to withdraw from the project, please notify a member of the research team so that research staff can document this.

9 What happens when the research project ends?
When the study is completed, the researchers will collate and analyse the data and prepare the results in a report for the funding body. The results may be presented at conferences and published in journals.

Part 2  How is the research project being conducted?

10  What will happen to information about me?
No identifiable information will be collected about any individual patient in any stage of this study. All electronic data will be stored on a secure, password protected University of Adelaide computer drive. Individual documents will be password protected using Word 2010 security options. During data analysis, any paper copies will stored in a locked cabinet in the Chief Investigator’s office in the School of Nursing. Access to this data during this project will be the members of the research team only. Audio recordings will be deleted at the end of the study.

Data will be stored for a period of five (5) years after publication. Disposal of data collected for this research will follow the University of Adelaide’s destruction of confidential data protocol.

By signing the consent form you consent to the researchers collecting and using information about you (interview) for the research project. Any information obtained in connection with this research project will remain confidential. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

It is anticipated that the results of this research project will be published and/or presented in a variety of forums. Information will be presented in such a way that patients cannot be individually identified. Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored. It will be disclosed only with your permission, or as required by law.

11  Complaints and compensation
If you suffer any distress or injuries as a result of this research project, you should contact the study team as soon as possible and you will be assisted with arranging appropriate support. Your participation in this study shall not affect any other right to compensation you may have under common law.

12  Who is organising and funding the research?
This research project is being conducted by research staff from the School of Nursing, funded by the Nursing and Midwifery Office. SA Health. Government of South Australia

13  Who has reviewed the research project?
All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the QEH HREC. The Queen Elizabeth Hospital has given approval for the research to be conducted at the Queen Elizabeth Hospital.

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This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect the interests of people who agree to participate in human research studies.

### 14 Further information and who to contact

The person you may need to contact will depend on the nature of your query. If you want any further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact the Principal Investigator Dr Lynette Cusack, School of Nursing, University of Adelaide on 8313 3593 or lynette.cusack@adelaide.edu.au.

If you want to talk with a person independent of the research project about any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general; then you may contact the HREC Executive Officer on 8222 4139 or CALHNResearchEthics@sa.gov.au
### Appendix 6. Patient Survey

**Patient experience and satisfaction survey on the Nurse Endoscopist role**

This survey has been developed with the aim of obtaining YOUR personal views based upon YOUR experience of having an endoscopy by a Nurse Endoscopist as part of the Nurse Endoscopist Model of Care for advanced scope of practice. There are no right or wrong answers to any of the questions: simply put a cross in the box that best describes how you think. Your answers will be treated in a confidential manner, and they will not affect your treatment in any way. The information provided will be used to find out how satisfied people are with their endoscopy, and to improve the endoscopy service.

1. How easy to understand was the information that was sent to you before your endoscopy?

<table>
<thead>
<tr>
<th>Very easy</th>
<th>Easy</th>
<th>Fair</th>
<th>Very difficult</th>
<th>Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Was the information sent to you before your endoscopy appointment useful in answering your questions?

<table>
<thead>
<tr>
<th>Very useful</th>
<th>Useful</th>
<th>Fair at all useful</th>
<th>Not very useful</th>
<th>Not useful</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Before you had your endoscopy, how much opportunity did you have to ask questions about the endoscopy procedure?

<table>
<thead>
<tr>
<th>Plenty</th>
<th>A little</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. How easy to understand was the explanation given to you before your endoscopy?

<table>
<thead>
<tr>
<th>Very easy</th>
<th>Easy</th>
<th>Fair</th>
<th>Very difficult</th>
<th>Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Was the explanation given to you before your endoscopy useful in answering your questions?

<table>
<thead>
<tr>
<th>Very useful</th>
<th>Useful</th>
<th>Fair</th>
<th>Not very useful</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. How would you rate the communication skills (eg. courtesy, respect, sensitivity, friendliness) of the person who performed your endoscopy?

   Very poor  Poor  Fair  Good  Very good

   [ ]  [ ]  [ ]  [ ]  [ ]

7. How would you rate the technical skills (eg. thoroughness, carefulness, competence) of the person who performed your endoscopy?

   Very poor  Poor  Fair  Good  Very good

   [ ]  [ ]  [ ]  [ ]  [ ]

8. How would you rate the communication skills (eg. courtesy, respect, sensitivity, friendliness) of the other staff in the endoscopy unit?

   Very poor  Poor  Fair  Good  Very good

   [ ]  [ ]  [ ]  [ ]  [ ]

9. How much discomfort did you experience during your endoscopy?

   Very severe  Severe  Moderate  Mild  None

   [ ]  [ ]  [ ]  [ ]  [ ]

10. How much pain did you experience during your endoscopy?

    Very severe  Severe  Moderate  Mild  None

    [ ]  [ ]  [ ]  [ ]  [ ]

11. How much discomfort did you experience after your endoscopy?

    Very severe  Severe  Moderate  Mild  None

    [ ]  [ ]  [ ]  [ ]  [ ]

12. How much pain did you experience after your endoscopy?

    Very severe  Severe  Moderate  Mild  None

    [ ]  [ ]  [ ]  [ ]  [ ]
13. After you had your endoscopy, how much opportunity did you have to ask questions about the findings?

<table>
<thead>
<tr>
<th>Plenty</th>
<th>A little</th>
<th>None</th>
</tr>
</thead>
</table>

14. After you had your endoscopy, how much explanation of the findings did you receive?

<table>
<thead>
<tr>
<th>Too much</th>
<th>About right</th>
<th>Not enough</th>
</tr>
</thead>
</table>

*If you did not receive an explanation, then please go directly to question 18.*

15. Did the person who performed your endoscopy give you the explanation?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

16. How easy to understand was the explanation given to you after your endoscopy?

<table>
<thead>
<tr>
<th>Very easy</th>
<th>Easy</th>
<th>Fair</th>
<th>Difficult</th>
<th>Very</th>
</tr>
</thead>
</table>

17. Was the explanation given to you after your endoscopy useful in answering your questions?

<table>
<thead>
<tr>
<th>Very useful</th>
<th>Useful</th>
<th>Fair</th>
<th>Not very useful</th>
<th>Not at all</th>
</tr>
</thead>
</table>

18. How would you rate the comfort of the recovery area in the endoscopy suite?

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
</table>

19. Overall, how satisfied are you with your endoscopy?
20. If, in the future, you have another endoscopy, how satisfied would you be to have it done by the same person?

21. How would you rate the overall reputation of the hospital?

22. Date of procedure: _____________________

23. What is your relationship to the patient?

24. Patients Age: ______________

25. Patients Gender:

26. Has the patient previously had a colonoscopy?

27. Do you know how long the patient was on the waiting list for the colonoscopy?

28. Was the patient aware they were being treated as part of the Nurse Endoscopist Model of Care for advanced scope of practice?

   □ 1 Yes, before the consultation
   □ 2 Yes, during the consultation
3 Yes, after the consultation
4 No
5 Don’t know

Thank you for completing this questionnaire. Your help is appreciated.

Adapted from:
Appendix 7. Information for Nurse Endoscopy Unit

A study in your unit:

An evaluation study to review the introduction of the APNE roles will be undertaken in the Nurse Endoscopy Unit.

We aim to evaluate a number of key performance indicators with the APNEs as well as develop a good understanding of staff and patient views, experiences and perceptions of the implementation of these new roles.

Dr Lynette Cusack from the Adelaide Nursing School, The University of Adelaide is conducting this study. You may be invited to participate.

The study will include:

- Collection of data by APNEs
- Staff survey
- Patient survey
Appendix 8. Staff Survey – Participant Information Sheet

Staff Information Sheet

Title
Evaluating APNE roles in a metropolitan health service South Australia

Short Title
Evaluating APNeS

Protocol ID
(CALHN Ref: Q20170703. HREC/17/TQEH/150. SSA/17/TQEH/203)

Sponsor
Principal Investigator
Dr Lynette Cusack

Associate Investigators
Dr Philippa Rasmussen, Dr Tim Shultz, Prof Jon Karnon, Ms Debra Pratt, Ms Sonny Ward, Ms Sarah Hunter

Location
The Queen Elizabeth Hospital

Part 1 What does my participation involve?

1 Introduction
You are invited to take part in this research project, “Evaluating APNE roles in a metropolitan health service South Australia”. This is because you are currently working in the Queen Elizabeth Hospital Endoscopy Unit. The research project will evaluate a number of key performance indicators related to the safety, efficiency, proficiency, acceptability and accessibility of APNE (NE) roles.

This Participant Information Sheet tells you about the research project and explains the study involved. Knowing what is involved will help you decide if you want to take part. Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a colleague.

Participation in this research is voluntary. If you decide you want to take part in this survey, completing this survey will imply consent to participate.

2 What is the purpose of this research?
The overall purpose of this research is to evaluate the process and impact of the introduction of the NE role on staff and patients in the Endoscopy Unit.

3 What does participation in this research involve?
You are invited to participate in the staff survey. The aim of the staff survey is to determine a variety of staff perspectives (nursing, administrative, sterilisation technicians, anaesthetists and medical staff), experiences and perceptions of the NE role. No identifying information will be recorded.

4 What do I have to do?
We invite you to complete a paper based survey.

5 Do I have to take part in this research project?
This is a research project and you do not have to be involved. Your decision will not affect your current or future employment in the QEH or SA Health. You also do not have to answer a question if you do not want to.

6 What are the possible benefits of taking part?
There will be no clear benefit to you from your participation in this research. However your contribution will help us to gain valuable insight into the effectiveness and efficiency of the NE Model of Care.

7 What are the possible risks and disadvantages of taking part?
We do not foresee significant risk or disadvantage from staff completing the survey.

8 What happens when the research project ends?
When the study is completed, the researchers will collate and analyse the data and prepare the results in a report for the funding body. The results may be presented at conferences and published in journals. Individuals will not be identifiable from the presentation of any results. An A4-sized collated summary of the findings will be prepared for distribution to the Unit.

Part 2 How is the research project being conducted?

9 What will happen to information about me?
No identifiable information will be collected about any individual staff member in any stage of this survey. All electronic data will be stored on a secure, password protected University of Adelaide computer drive. Individual documents will be password protected using Word 2010 security options. Access to this data during this project will be the members of the research team only.

Data will be stored for a period of five (5) years after publication. Disposal of data collected for this research will follow the University of Adelaide’s destruction of confidential data protocol.

Any information obtained in connection with this research project will remain confidential. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

10 Who is organising and funding the research?
This research project is being conducted by research staff from the School of Nursing, funded by the Nursing and Midwifery Office, Office for Professional Leadership, Department for Health and Ageing.
11 Who has reviewed the research project?
All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the QEH HREC. The Queen Elizabeth Hospital and your managers have given approval for the research to be conducted at the Queen Elizabeth Hospital.

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect the interests of people who agree to participate in human research studies.

12 Further information and who to contact
The person you may need to contact will depend on the nature of your query.

If you want further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact the Principal Investigator Dr Lynette Cusack, Adelaide Nursing School, The University of Adelaide on 8313 3593 or lynette.cusack@adelaide.edu.au.

If you want to talk with a person independent of the research project about any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general; then you may contact the HREC Executive Officer on 8222 4139 or CALHNResearchEthics@sa.gov.au
Appendix 9. Staff experience and satisfaction survey on the APNE role

Date survey completed: ...........................

1. Age group:
   - 1 20-29
   - 2 30-44
   - 3 45-59
   - 4 60+

2. Which best describes your role at the Queen Elizabeth Hospital?
   - 1 Nurse
   - 2 Technician
   - 3 Administration/clerical
   - 4 Medical staff
   - 5 Allied health
   - 6 Scientist/research
   - 7 Other
     Please specify: ..............................

3. How many years have you worked in your current position?
   - 1 Less than 1 year
   - 2 1-2 years
   - 3 3-7 years
   - 4 8-12 years
   - 5 13-20 years
   - 6 20+ years

4. How many years’ experience do you have in your current area of specialty?
   - 1 Less than 1 year
   - 2 1-2 years
   - 3 3-7 years
   - 4 8-12 years
   - 5 13-20 years
   - 6 20+ years

5. In your day to day work, how often do you have contact with APNEs?
   - 1 Never
   - 2 Sometimes
   - 3 Often
   - 4 Very frequently

6. Have you been directly involved in the program implementation and/or training with the APNEs?
   - 1 Yes
   - 2 No
### Staff satisfaction

For each item below, please circle the number that best fits your experience.

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>I have a good understanding of the APNE role</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>8.</td>
<td>Patients do not have a good understanding of the APNE role</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>9.</td>
<td>I have a good understanding of which patients are suitable for management by a APNE</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>10.</td>
<td>I have a good understanding of the scope of practice of APNEs</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>11.</td>
<td>I acknowledge the professional skills and expertise of APNEs</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>12.</td>
<td>I have a good understanding of how a APNE differs from nurses assisting with colonoscopy</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>13.</td>
<td>I have a good understanding of the educational preparation required to become a APNE</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>14.</td>
<td>APNEs do not have the skills and knowledge to perform selected procedures safely and accurately for their patient</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>15.</td>
<td>APNEs have the skills and knowledge to provide appropriate information to specific patient groups</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>16.</td>
<td>APNEs have the skills and knowledge to appropriately refer specific patient groups to outpatients and specialty clinics</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>17.</td>
<td>I feel confident of APNEs dealing with patients in their expanded role</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>18.</td>
<td>I do not understand how the APNE will function in this Colonoscopy Unit</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>19.</td>
<td>APNEs will make the Colonoscopy Unit more effective</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>20.</td>
<td>APNEs will improve access to colonoscopies</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>21.</td>
<td>APNEs will not improve quality of care for specific patient groups</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>22.</td>
<td>I am comfortable with being approached by a APNE for advice regarding patient management</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>23.</td>
<td>Medical specialists are the most appropriate personnel to supervise APNEs</td>
<td>1 2 3 4 5 N/A</td>
</tr>
</tbody>
</table>

24. Any additional comments:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

**Thank you for completing this questionnaire. Your help is appreciated.**
Appendix 10. APNE Participant Consent Form

Title  Evaluating APNE roles in a metropolitan health service South Australia

Short Title  Evaluating APNEs

Protocol ID  (CALHN Ref: Q20170703. HREC/17/TQEIH/150. SSA/17/TQEIH/203)

Sponsor

Principal Investigator  Dr Lynette Cusack

Associate Investigators  Dr Philippa Rasmussen, Dr Tim Shultz, Prof Jon Karnon, Ms Debra Pratt, Ms Sonny Ward, Ms Sarah Hunter

Location  The Queen Elizabeth Hospital

Declaration by Participant

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future health care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print)  __________________________________________

Signature  _____________________________  Date  _____________________________

If the participant is not able to read, then an impartial witness should be present during the entire informed consent discussion. After the participant has orally consented and if capable of doing so, signed and dated the consent form, then the witness should sign and personally date the consent form. (see Note for Guidance on Good Clinical Practice CPMP/ICH/135/95 at 4.8.9) a witness* to informed consent is required.
Name of Witness* to Participant’s Signature (please print)  

Signature  Date

* Witness is not to be the investigator, a member of the study team or their delegate. In the event that an interpreter is used, the interpreter may **not** act as a witness to the consent process. 

Witness must be 18 years or older

**Declaration by Researcher†**

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Researcher† (please print)  

Signature  Date

† A senior member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature.
Appendix 11. Interview questions for Advanced Practice APNEs; (6 and 12 months)

1. Introduce researcher. Consent form discussed and signed.

2. Questions

2.1 Activity scoring for domain Clinical care:

- Has your score changed from when you first commenced in this role 6/12 months ago. Which activities from the reflection tool have increased or decreased the most? Why do you think this has occurred?/What has influenced this change? (Cues: - your confidence/ knowledge /skills /environmental factors/ staff attitudes).

2.2 Activity scoring for domain Optimising Health Systems.

- Has your score changed from when you first commenced in this role 6/12 months ago. Which activities from the reflection tool have increased or decreased the most? Why do you think this has occurred? What has influenced this change? (Cues: - your confidence/ knowledge /skills /environmental factors/ staff attitudes).

2.3 Activity scoring for domain Education.

- Has your score changed from when you first commenced in this role 6/12 months ago. Which activities from the reflection tool have increased or decreased the most? Why do you think this has occurred? What has influenced this change? (Cues: - your confidence/ knowledge /skills /environmental factors/ staff attitudes).

2.4 Activity scoring for domain Research

- Has your score changed from when you first commenced in this role 6/12 months ago. Which activities from the reflection tool have increased or decreased the most? Why do you think this has occurred? What has influenced this change? (Cues: - your confidence/ knowledge /skills /environmental factors/ staff attitudes).

2.5 What experience can you share with me that highlights an important change (no names) on the development or hindrance of the advanced role?

3. How useful have you found the Australian Advanced Practice Nursing Self-Appraisal Tool to assist you to reflect on your development as an advanced practitioner. What changes do you recommend to the tool?

4. Any further comments you would like to make>

Thank you for your time.
Appendix 12. APNE Information Sheet: Interview

Title: Evaluating APNE roles in a metropolitan health service South Australia

Short Title: Evaluating APNEs

Protocol ID: (CALHN Ref: Q20170703. HREC/17/TQEH/150. SSA/17/TQEH/203)

Sponsor: Dr Lynette Cusack

Principal Investigator: Dr Lynette Cusack

Associate Investigators: Dr Philippa Rasmussen, Dr Tim Shultz, Prof Jon Karnon, Ms Debra Pratt, Ms Sonny Ward, Ms Sarah Hunter

Location: The Queen Elizabeth Hospital

Part 1

1 Introduction
You are invited to take part in this research project, “Evaluating APNE roles in a metropolitan health service South Australia”. This is because you are currently working as a APNE in the Queen Elizabeth Hospital Endoscopy Unit. The research project will evaluate a number of key performance indicators related to the safety, efficiency, proficiency, acceptability and accessibility of APNE (NE) roles.

This Participant Information Sheet tells you about the research project and explains the study involved. Knowing what is involved will help you decide if you want to take part. Please read this information carefully. Ask questions about anything that you don’t understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a colleague.

Participation in this research is voluntary.

2 What is the purpose of this research?
The overall purpose of this component of the research is to evaluate the development the advanced practice NE role.

3 What does participation in this research involve?
You are invited to participate in an interview. The aim of the interview is to reflect on the development of your role using the self-reflection tool: The Australian Advanced Practice Nursing Self-Appraisal Tool.

4 What do I have to do?
We invite you to an interview to discuss your reflection on the development of the NE advanced practice role using the Australian Advanced Practice Nursing Self-Appraisal Tool to guide your reflections.

5 Do I have to take part in this research project?
This is a research project and you do not have to be involved. Your decision will not affect your current or future employment in the QEH or SA Health. You also do not have to answer a question if you do not want to.

6 What are the possible benefits of taking part?
There will be no clear benefit to you from your participation in this research. However your contribution will help us to gain valuable insight into the development of advanced nursing practice for the NE Model of Care.

7 What are the possible risks and disadvantages of taking part?
We do not foresee significant risk or disadvantage except for the inconvenience of giving your time for the interview. No identifying information will be recorded.

8 What happens when the research project ends?
When the study is completed, the researchers will collate and analyse the data and prepare the results in a report for the funding body. The results may be presented at conferences and published in journals. Individuals will not be identifiable from the presentation of any results.

Part 2 How is the research project being conducted?

9 What will happen to information about me?
   1. No identifiable information will be collected about any individual staff member from the interview. All electronic data will be stored on a secure, password protected University of Adelaide computer drive. Individual documents will be password protected using Word 2010 security options. Access to this data during this project will be the members of the research team only.

Data will be stored for a period of five (5) years after publication. Disposal of data collected for this research will follow the University of Adelaide’s destruction of confidential data protocol.

Any information obtained in connection with this research project will remain confidential. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

10 Who is organising and funding the research?
This research project is being conducted by research staff from the Adelaide Nursing School, The University of Adelaide funded by the Nursing and Midwifery Office, Office for Professional Leadership, Department for Health and Ageing.

11 Who has reviewed the research project?
All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the QEHWREC. The Queen Elizabeth Hospital and your
managers have given approval for the research to be conducted at the Queen Elizabeth Hospital.

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect the interests of people who agree to participate in human research studies.

**12 Further information and who to contact**

The person you may need to contact will depend on the nature of your query.

If you want further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact the Principal Investigator Dr Lynette Cusack, Adelaide Nursing School, The University of Adelaide on 8313 3593 or lynette.cusack@adelaide.edu.au.

If you want to talk with a person independent of the research project about any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general; then you may contact the HREC Executive Officer on 8222 4139 or CALHNResearchEthics@sa.gov.au
Appendix 13. Advanced Practice Nurse Endoscopy comprehensive pathway of care

TQEH Referral For Admission to NE List

**PROJECT STEPS**
- Project begins: TQEH - Colorectal colonoscopy patients
- No patients for NE
- No program for NE

**PROCESS DETAIL**
- Triage process commenced - Patients from wait list reviewed and triaged against NE criteria
- Colorectal surgeons confirm triage decisions
- Patients who chose to accept - booked onto pre-admission list and given date for pre-admission clinic
- Patients who refuse are put back onto surgeons wait list

**IMPROVEMENT INITIATIVE**
- Developed: Process and criteria to book appropriate patients
- Tracked process of referral to colorectal wait list and then those suitable for NE

**PRE-ADMISSION CLINIC:**
- Patients reviewed and consented
- Colorectal clinical assessment indicates appropriate for NE - consented and booked onto schedule and date of procedure
- Colorectal clinical assessment indicates NOT appropriate for NE - back on surgeons wait list

**ACTIVITIES IN PRE-ADMISSION CLINIC:**
- Bowel prep information
- Colorectal clinical assessment

**NE ALTERNATIVE SERVICE:**
- Manage pre-admissions, NE list and additional patient resources, also focus on patients’ concerns and any potential complications flagged to anaesthetist.

**REVIEWED BOWEL PREP STANDARDS**

**REVIEWED WAITING LIST SYSTEM**
- Now remove patients who have not rebooked and removed duplications
**Project Steps**

- Patients admitted onto gastro ward by ward staff
- Confirmed patients consented and taken to procedure room

**Process Detail**

- NE sees patient and answers any questions

**Improvement Initiative**

- Consent process reviewed and improved
  - Patient education:
    - Bowel screening
    - Post op pain
    - Post op bleeding - do not delay

**Procedure**

- Patient in procedure room
- NE checks room
- Anaesthetic nurse prepares patient
- Colonoscopy procedure
- Patient transferred to first stage recovery PACU 1
- Patient transferred to second stage recovery PACU 2

**Surgery safety checklist**
- EPAS/Provation
- Check room
- Check equipment
- Patient identified
- Consent
- Patient questions

**NE management of procedure room**

- Used board to identify staff in procedure room
- NE role clarified to be responsible to manage time, patient, staff, procedure and apply team time-out

**NE write report and pathology form**

- Developed a delegative process for sign off of pathology form and sick certificate

**Complete to carcinoma**
- +/- polypectomy
- +/- haemorrhoid banding
- If unable to complete due to:
  - Medical complication
  - Not suitable
  - Inadequate bowel prep

**PACU 1**
- Discharged and rebooked
Patient discharged

NE reviews pathology

Colorectal surgeon authorization and signature

Other pathology - check against surveillance guidelines 3/12 - 5 years repeat colonoscopy

Generate RFA

Pathology reviewed against NICE guidelines for colon screening

Cancer - refer to colorectal consultant/DMO

Pathology review protocol

Back to RFA reviewed