5 Statewide access to endoscopy services

A review of the outcomes of the NBCS program [22] demonstrates access issues for endoscopic services in Queensland. While this program focuses particularly on colonoscopy, it may be representative of all endoscopic procedures.

While an average of 7% of Queenslanders had positive FOBT test results (between 2011–12), Figure 23 shows patients in regional areas had higher positive test outcomes than those residing in metropolitan areas. Correspondingly, many of these regional areas do not have medical specialists in HHSs who perform endoscopy procedures (refer to Table 4). Figure 22 highlights current inequities in supply of services in regional areas; where demand clearly exists. With the increased uptake of the NBCS, the impact of this inequity will worsen over time.

Figure 23 Distribution of positive Faecal Occult Blood Test (FOBT) results 2011–12

The impact of disproportionate access to endoscopic services for patients in regional areas is further exacerbated when examining data on practitioner follow-up rates (see Figure 24). Figure 25 shows the regions with the highest positive FOBT are also the lowest to follow-up their results with their medical practitioner. This trend was consistent for regional patients with only 45% actually having a colonoscopy screening following a positive FOBT test (Refer Figure 25).
Overview of the planned introduction of nurse endoscopy in Queensland – Nursing and Midwifery Office, Queensland

Figure 24  National Bowel Cancer Screening positive Faecal Occult Blood Test practitioner follow-up rates

Notes:
1. Rate per remoteness area is an average of PHCP follow-up reported across that remoteness area.
2. PHCP follow-up rates rounded to integers.
3. Differences in PHCP follow-up rates across remoteness areas may involve differences in assessment form return only.

Source: National Bowel Cancer Screening Program Register as at 31 December 2012.

Figure 25  National Bowel Cancer Screening positive Faecal Occult Blood Test colonoscopy rates

Notes:
1. Rate per remoteness area is an average of colonoscopy follow-up reported across that remoteness area.
2. Colonoscopy follow-up rates rounded to integers.
3. Differences in colonoscopy follow-up rates across remoteness areas may involve differences in form return only

Source: National Bowel Cancer Screening Program Register as at 31 December 2012.
6 Workforce

6.1 Workforce overview

Stakeholder comments made at the Investment Management workshop in August 2013 attributed growing waiting lists for endoscopy in Queensland Health; with inadequate numbers of credentialed endoscopy practitioners.

The Conjoint Committee for Recognition of Training in Gastrointestinal Endoscopy has a list of credentialed endoscopy medical practitioners in Queensland. As of November 2013, there were 308 specialists who were credentialed to undertake endoscopic procedures. Of these, 171 specialists work in Queensland Health for a portion of their time. Further information is required to understand the level of endoscopy activity that each specialist performs; as endoscopy may only be a small component of the specialist workload – particularly for general surgeons and general physicians. Figure 26 highlights the number and location of specialists who are credentialed to perform endoscopy in Queensland.

In 2012, a survey was conducted by the Clinician Planning and Leadership Unit. They had difficulty in obtaining consistent information regarding endoscopy services. However, the information provides insight into the number of practitioners actually performing endoscopy services in Queensland. While there are 171 specialists credentialed to perform endoscopy in Queensland who are working in the public sector, this number equates to no more than 50 FTEs (40 FTEs physicians, largely gastroenterologists with a small number of general physicians and 10 FTEs surgeons). While the number of FTEs of credentialed specialists is known, the actual proportion of time these specialists are available to provide endoscopies is unknown.
Table 4 outlines the locations of specialist FTE gastroenterologists and surgeons in facilities across Queensland Health.

<table>
<thead>
<tr>
<th>Site</th>
<th>Gastroenterologist/general medicine FTES</th>
<th>Surgeon FTES</th>
<th>Total FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redland</td>
<td>0.3</td>
<td>0.5</td>
<td>0.8</td>
</tr>
<tr>
<td>QEII</td>
<td>0.75</td>
<td>0.1</td>
<td>0.85</td>
</tr>
<tr>
<td>Princess Alexander Hospital</td>
<td>6.9</td>
<td>0.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Logan</td>
<td>1.95</td>
<td>0.25</td>
<td>2.2</td>
</tr>
<tr>
<td>Weipa</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Longreach</td>
<td>0</td>
<td>1 session</td>
<td>1 session</td>
</tr>
<tr>
<td>Toowoomba</td>
<td>1.5</td>
<td>0.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Mackay</td>
<td>0.2</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Ipswich</td>
<td>0.1</td>
<td>0.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Rockhampton</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Roma</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>4.7</td>
<td>0.3</td>
<td>5</td>
</tr>
<tr>
<td>Nambour</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cairns</td>
<td>1.6</td>
<td>0.3</td>
<td>1.9</td>
</tr>
<tr>
<td>Bundaberg</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Maryborough/Hervey Bay</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The Prince Charles Hospital</td>
<td>1.9</td>
<td>0.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Royal Brisbane and Women’s Hospital</td>
<td>6.89</td>
<td>0.1</td>
<td>6.99</td>
</tr>
<tr>
<td>The Royal Children’s Hospital</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Caboolture</td>
<td>0.9</td>
<td>0.7</td>
<td>1.6</td>
</tr>
<tr>
<td>Redcliffe</td>
<td>0.8</td>
<td>0.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Innisfail</td>
<td>0.05</td>
<td>0.05</td>
<td>0.1</td>
</tr>
<tr>
<td>Mount Isa</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Townsville</td>
<td>3.05</td>
<td>0.25</td>
<td>3.3</td>
</tr>
<tr>
<td>Ayr</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Charters Towers</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ingham</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39.59 FTEs</strong></td>
<td><strong>9.55 FTEs</strong></td>
<td><strong>49.14 FTEs</strong></td>
</tr>
</tbody>
</table>

These figures indicate the majority of endoscopists’ practice in South East Queensland.
6.2 Gastroenterologist workforce

A complete picture of the gastroenterologist workforce is not available as most data relates specifically to gastroenterologists – instead of all specialists – performing endoscopic procedures. This limits our ability to provide an analysis of total workforce capacity and resultant workforce requirements in Queensland.

According to the Australian Health Practitioner Regulation Agency [23], in 2011 there were 115 gastroenterologists working in Queensland. This represents 17% of the total gastroenterologist workforce in Australia (Refer Figure 27).

![Figure 27 - Gastroenterologists by State and Territory in 2011][1]

Less than half (50) of the 115 gastroenterologists working in Queensland work for Queensland Health. The 50 gastroenterologists working in Queensland Health equate to approximately 40 FTEs.

6.2.1 Estimating growth in the gastroenterologist workforce

Gastroenterology, with endoscopy as a sub-set, falls under the auspices of the Royal Australasian College of Physicians (RACP). Gastroenterology is, along with cardiology, the predominant clinical specialty within this college. The length of training and availability of training places within the ‘pipeline’ for any workforce stream will influence the supply of home-grown professional health workforce, and is one indicator of the robustness of workforce sustainability [12].

The inability of public hospitals to provide a sustainable workforce replenishing model impacts significantly on the supply of gastroenterology specialists. The main barrier relates to the limited employment opportunities for newly graduated specialist medical staff in the public sector as well as for trained gastroenterologists barrier. These limitations have a direct impact on the public system being able to sufficiently meet future increases in demand. Capacity to train medical staff at the advanced trainee level within the public hospital system is an ongoing issue, as workload increases have in many instances negatively impacted on

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[1]: https://example.com/figure.png
clinical supervision capability and limit the number of trainees that can be supervised [12]. The cause of this shortage has been attributed to lack of funding for established positions.

The limited number of training positions is the other key barrier in providing a sufficient and sustainable workforce going forward [12].

The limited use of multi-modality training methods, coupled with constraints on capacity to supervise clinical training placements, are limiting factors which impact on the health systems ability to train gastroenterology specialists and to replenish the stocks and flows of the workforce. It should also be noted that not all staff who complete advanced specialist gastroenterology training will be retained to provide endoscopic services. A significant proportion will move to private practice which also contributes to the limited number of staff practicing in this field [12].

Based on current teaching capacity, it is estimated that six new gastroenterologists will complete their training each year for the next 3 years. It may be expected that a significant proportion of the graduates will transition to the private sector – resulting in a growth of eight gastroenterologists by 2018.

In a labour workforce survey conducted in 2011 [24], 17 out of 115 gastroenterologists indicated that they will be leaving the profession by 2018. Assuming that 43% of these worked in the public sector, the net gain in gastroenterologist staffing may only be one or two (2–4%). This is particularly concerning as the growth in the gastroenterology workforce is increasing by 2–4% while at the same time activity may be increasing by 48%.

6.3 Workforce distribution

Anecdotal evidence suggests that endoscopy procedures undertaken outside the major metropolitan centres are usually performed by surgeons in the absence of specialist gastroenterology staff at these sites. Geographic mal-distribution of gastroenterology services and staff in Queensland remains severely problematic. In some instances to maintain patient safety and quality of overall service provision, local services have been closed and patients transferred to major metropolitan hospitals rather than maintain a regional service with quality assurance issues largely related to inadequate or sub-optimal supply of specialist workforce, which translates to increased risk in regional and remote locations. Geographic mal-distribution (and differences in under servicing as reflected by growing waiting lists) seems to be at least partly driven by allocation of funding and not only by preferences of the workforce [12].

6.4 Estimating workforce demand

A review of literature was unable to identify the average number of endoscopies performed by each proceduralist per year. Therefore two models have been used to provide an estimated figure of the future demand. The estimation of workforce requirements by 2018 does not show significant variation between application of both models.
6.4.1 Model 1: Queensland Health proceduralist average

This model makes the following assumptions:

- Productivity per FTE remains the same in 2011 as in 2018.
- The average number of procedures performed per FTE (1,051) = endoscopies performed in 2011 (52,581)/FTE identified staff (50 FTE).

<table>
<thead>
<tr>
<th>Detail</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated demand</td>
<td>111,365</td>
</tr>
<tr>
<td>Estimated Avg no. of procedures performed per FTE</td>
<td>1,051</td>
</tr>
<tr>
<td>Estimated FTEs Required</td>
<td>106</td>
</tr>
</tbody>
</table>

Based on these calculations, the required FTE by 2018 is 106. This means the workforce will need to double by 2018.

6.4.2 Model 2: McKinsey report of time taken per procedure

This model is based on the following assumptions:

<table>
<thead>
<tr>
<th>Detail</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural days per year*</td>
<td>240</td>
</tr>
<tr>
<td>Sessions per day</td>
<td>2</td>
</tr>
<tr>
<td>Sessions length of time (hours)</td>
<td>4</td>
</tr>
<tr>
<td>Number of sessions per operator</td>
<td>60%</td>
</tr>
<tr>
<td>Operator procedural hours per year</td>
<td>1152</td>
</tr>
<tr>
<td>Av. Procedural time (hours)**</td>
<td>1</td>
</tr>
<tr>
<td>Estimated operator procedures per year</td>
<td>1152</td>
</tr>
<tr>
<td>Estimated demand 2018</td>
<td>111,365</td>
</tr>
<tr>
<td>Estimated FTEs required</td>
<td>97</td>
</tr>
</tbody>
</table>

* Assumes four week closure period


*** Draft benchmark paper being developed by Policy and Planning Branch estimates that 10 procedures can be performed per room per day. This is slightly higher output than suggested above.

Based on these calculations, the required FTEs by 2018 is 97. As above, this is a doubling of the current workforce FTEs.

6.5 Summary

To achieve the anticipated activity by 2018 it is estimated that approximately 100 FTE will be required in the public sector. There are currently (2013) 40 FTE gastroenterologists and 10 FTE surgeons performing endoscopy in Queensland Health. Therefore within the next five years there needs to be a growth of over 50 FTEs. With current forecasts of growth of locally

trained staff and estimated attrition rate, it is anticipated that the growth in gastroenterologists will only be two. This means that there will be a significant gap between supply and demand. Strategies proposed in previous reports[12] to address this issue include:

- increased recruitment of medical staff
- increased training of medical staff to perform endoscopies
- development of nurse endoscopy
- reduce demand through strategies, such as outsourcing activity to the private sector.
7 Other factors impacting on endoscopy

The following points reflect the opinions of stakeholders in a series of investment management workshops that were held in August 2013. In some instances they may be deemed controversial and are supported only by anecdotal evidence.

Stakeholders in the investment management workshop suggested that there were three key effects that the system failures were causing:

- the inability of the public health system to incentivise its practitioners to achieve levels of efficiency and productivity comparable to those of the private sector
- the difficulty for HHSs to implement strategic plans that required upfront investment to deliver potential health benefits (mostly through deferred cost of care) that would not be realised within the current budget
- the seemingly enormous inertia that sits behind the current business as usual system that resists and/or retards innovative change as well as the absence of leadership to drive change.

While there are multiple causes that contribute to these consequences two stood out as being the most significant—funding models and leadership.

7.1 Funding models

Funding models play a vital role in driving the outcomes. There are several parts to this, as shown in the cause and effect model in Figure 28.

7.1.1 Practitioner incentives

In the public system, practitioners are paid a fixed salary independent of how many or how few endoscopy procedures they perform. As such, a public sector practitioner gains no personal financial benefit from either improved efficiency or increased throughput. In contrast, private system providers are paid per procedure. This provides the private sector with incentives to:

- improve their financial margin through increased efficiency of their practice by better utilisation of staff and facilities and ensuring they are using the most efficient procedures and
- increase revenue by treating more patients (assuming unmet demand for the service).

A frequent observation by workshop participants was that the public health system dealt with most of the complex patients which were not easily managed by the routine procedures of the private sector. Another factor affecting the ability to compare productively between the public and private sectors is that procedures performed in the public sector often occur in the context of training.

* No evidence has been provided to substantiate the suggested scale and impact that this has on the overall productivity of endoscopy in the public health setting.
7.1.2 Previous funding models

In the past, HHS funding models did not allow the organisation to either run at a loss or transfer surplus or loss into future years. The net result was that HHSs focused predominantly on managing and treating immediate demand. Strategic planning for long-term future benefits (e.g. reduced cost of care in five years’ time) was difficult to justify and execute. As a result, the practice within many HHSs failed to:

- prioritise diagnostic and preventative procedures in the face of increasing pressures from acute and complex chronic conditions
- adequately plan for gastroenterology recruitment, retention and succession planning and
- provide reasonable security of tenure for the specialist endoscopy practitioners.

Business environments for HHSs have been reformed enabling them to forward plan and manage multi-year budgets. However, other aspects influencing improvements in increased efficiency such as culture and experience may be impacting on capability to embrace a wholesale strategic shift in this area.
7.2 Funding a sustainable service

The sustainability of endoscopy as a standard diagnostic and therapeutic tool for pre-cancerous and early stage malignancies is dependent upon funding levels that will meet the price of the procedure.

The ability to price services effectively is important for service planning and policy-making. There is significant variance of costs between the public and private sector with a range of factors contributing to this, including:

- differences in acuity, complexity and co-morbidities of patients
- different fee structures of proceduralists and
- direct and indirect costs of training in the public sector.

Current estimates on the unit cost in the public sector, however, range considerably with more than a tenfold difference in the reported public health cost of endoscopy. The cause of these variations is unclear.

7.3 Leadership and the cultural change required

While the funding models are important to drive change, perhaps the more significant barrier for innovative change is culture of the service and the difficulties in prioritising and championing shifts in endoscopic policy and practice. The problems identified in this report are not unique to Queensland with many of the issues reflecting similar trends elsewhere [1]. For example, the benefits of early detection of bowel cancer through FOBT and colonoscopy are widely reported [20, 25, 26]. These findings have led countries, such as the United Kingdom to introduce innovative changes to their healthcare practice, enabling every person who needs endoscopy to book into and receive a procedure within two to six weeks with no waiting list. Such a transformation in the United Kingdom was not achieved by simply tweaking the system. It required a wholesale shift in the way service models were conceptualised and delivered.

The United Kingdom National Health System (NHS) introduced teams of specialists working with registered nurses, who were trained and qualified to practise endoscopy. The United Kingdom model did not replace gastroenterologists with registered nurses, rather it augmented the service. This increased the overall capacity of the system, while maintaining the high standards of quality control and the capability to deal with more complex situations should they arise. The United Kingdom model is a team based approach; not around individuals or a single specialisation. The use of registered nurses is what helps improve the efficiency and productivity. Evidence from the United Kingdom concerning the change in practice [27, 28] suggests that there has been:

- increased productivity
- increased numbers of patients seen
- no loss of quality and
- reduction in the total cost of care.

The United Kingdom experience with endoscopy service provision demonstrates how innovative change has enabled significant benefits for health consumers and for the health system. The key difference between the United Kingdom and Queensland is that most gastroenterologists in the United Kingdom work for the NHS compared to 62% of Australian
gastroenterologists who work in the private health sector. Figure 29 shows a cause and effect representation of a number of factors impacting on endoscopy service provision.

Figure 29  Cause and effect system diagram showing the factors that are impacting innovative practice
8 Strategic response

This report has demonstrated that there is a significant demand for endoscopy services in Queensland. It has also demonstrated (i.e. waiting list statistics) that the current capacity of the HHSs is inadequate to cope with this demand. It is anticipated that this problem will be exacerbated into the future with a rapidly increasing demand for endoscopy services coupled with an insufficient growth in a trained workforce.

The impact on Queenslanders is substantial. The most dramatic is colorectal cancer (CRC). In Queensland in 2013, there will be approximately 3325 new cases diagnosed and 1170 deaths from CRC. Around 50% of these cases will be diagnosed at Stage 3 or 4 when survival is poorest and per-case spending is highest—showing the current pathway does not support early detection as effectively as it should. The main root cause of this is low deployment and uptake by eligible patients of primary screening (via FOBT, where uptake in Queensland is only 36% versus 65% recommended level), and long waiting times in the public sector for CRC-related diagnostic investigation [29].

It is projected that of the 1905 Queenslanders who will receive a late diagnosis comprising either Stage 3, 4 or unknown cancer in 2013, 1037 will have a life expectancy of less than five years. Around 789 of these deaths could be prevented if they were diagnosed in Stage 1 – or 362 preventable deaths if diagnosed at Stage 2.

Table 5  
Current estimates of treatment and five year survival rates [30]

<table>
<thead>
<tr>
<th>CRC Stage</th>
<th>Current estimates of treatment costs</th>
<th>Current estimates of 5 year survival rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>$30,890</td>
<td>87%</td>
</tr>
<tr>
<td>Stage 2</td>
<td>$47,534</td>
<td>81%</td>
</tr>
<tr>
<td>Stage 3</td>
<td>$74,225</td>
<td>64%</td>
</tr>
<tr>
<td>Stage 4</td>
<td>$61,423</td>
<td>16%</td>
</tr>
</tbody>
</table>

Figure 30  
Cancer development at the time when it is first diagnosed, new incidents and percentage 2013 [31]
Not only is the impact on health outcomes substantial, but late stage diagnosis incurs considerable health costs. Total spending on CRC screening, diagnosis and treatment, reaches approximately $300 million across Queensland—equivalent to approximately $100,000 per case. This is driven primarily by:

- intensive use of colonoscopy for screening activity (rather than use of FOBT)
- treatment for more expensive late-stage cases (Stage 3 and 4 treatment is over double the cost of Stage 1 treatment) and
- emergency presentation of CRC cases [29].

A number of strategies have been identified, which – if implemented – may improve health outcomes; improve patient experience and create a better value-for-money system. While our workforce analysis has demonstrated that re-designing and augmenting the workforce will be necessary to make real positive impact on the mismatch between demand and supply; these are longer-term strategies. It will take time to build the workforce to the extent needed to realise the full gains from such an investment. The immediate problem is a large waiting list being added to with increasing referrals. The problem needs to be dealt with in the immediate future with the deployment of a combination of strategies. The strategies identified are outlined below.

### 8.1 Demand management

One strategy is to reduce the demand for endoscopy procedures through a standardised and consistent approach to referrals, triage and surveillance through the improved use of standardised guidelines and avoiding the use of endoscopy for universal screening prior to filtering through more efficient tests, such as FOBT or the Faecal Immunochemical Test (FIT) for bowel cancer.

**Key assumptions**

Anecdotal evidence implies that excess demand in the system may be compounded by inappropriate referrals. Endoscopy should not be used as the default screening for patients to determine if they have the symptoms of bowel cancer. Only patients with an appropriate clinical need, based on standardised guidelines (e.g. positive FOBT, family history etc.) should be candidates for endoscopy. Reducing inappropriate servicing and reducing the frequency of surveillance may enable the current capacity to maintain service outcomes. A revised model encompassing tightened criteria for endoscopy referral will be better able to maintain steady service delivery equilibrium, once the backlog is addressed.

**Alternative demand management**

It is well known that lifestyle factors play a significant role in promoting and alternatively preventing gastrointestinal tract cancers. The risk factors for both upper and lower GI cancers include high intake of fat, alcohol or red meat, obesity, smoking and a lack of physical exercise with around 10% linked to insufficient activity. The risk for alcohol appears to increase at greater than one drink per day [19]. Therefore, preventative health education strategies should be considered along with other demand management strategies.
8.2 Supply management

The two key approaches to managing supply are increasing productivity and increasing capacity. Increasing the funding allocation available for endoscopy enabling HHSs to source additional services, including procurement from the private sector is one approach to increasing supply. This would facilitate the creation of a larger and more stable market for providers and patients to participate in, and could introduce a degree of contestability into the provision of endoscopy services as a HHS could potentially tender its service, including its waiting list backlog to the market.

Key assumptions

The option assumes that if HHSs are given certainty around appropriate levels of additional resource to purchase endoscopy at an ‘efficient market price’ they would be able to plan for, and deliver, sufficient endoscopy services, regardless of the demand. The same approach applies to the removal of the backlog, although this may be better managed at a state level. It also assumes that the available capacity is present, or could be obtained, in the private sector to service the extra demand. While in some areas this may mitigate the problem, there are limitations to the sustainability of this approach.

- Potential distortions in the market may provide perverse outcomes, such as:
  - reducing the supply of clinicians in the public sector by increasing the incentives to practise privately
  - increasing the price and
  - leading to increased over-servicing.
- Ongoing surveillance and treatment of conditions, such as cancer still require referral back to the public sector, thus increasing the pressure on gastroenterology services and increasing fragmentation of the patient care pathway with potentially poorer outcomes.
- More complex patients cannot always be treated in the private sector.
- The proportion of endoscopies in the public sector that are actually performed by registrars or trainees is unknown. It is important that access to training (for medical practitioners and nurses) is not impeded to ensure the future supply of a skilled and competent workforce for both public and private sectors.

8.2.1 Productivity management

Productivity of the system could be increased by:

- more efficient and effective use of staff
- more efficient and effective use of facilities
- redesigning the model of care around referrals, patient presentation, triage, treatment and surveillance and increasing the use of multidisciplinary teams to improve patient outcomes as well as productivity
- introducing funding models that encourage multi-year perspective on health benefits and costs and
- optimising the use of endoscopy (in particular, colonoscopy) to deliver the best quality adjusted life year (QALY) for given price constraints.
Key assumptions
The problem is neither supply nor demand but predominantly the failure to use the available resources efficiently and effectively. Furthermore, the processes that support them are outdated, convoluted and fail to leverage the productivity that can be achieved from modern technology and multidisciplinary teams.

8.2.2 Capacity management
The previous discussion has identified that the production and deployment of relevant medical specialists will be insufficient to meet the projected demand. In light of this it is assessed that the most effective way to increase capacity is to expand the number of alternative skilled and credentialed health practitioners, such as general practitioners (GPs) or nurses to perform endoscopies. Previous consideration of the use of GPs has indicated a range of potential difficulties and leads us to the conclusion that focusing on augmenting multidisciplinary teams with nurse endoscopists as the most likely way of increasing capacity successfully.

Key assumptions
Even with the productivity improvements expected with the previous strategies, the growth in demand is likely to create a considerable financial burden in meeting the demand for increased endoscopy services. The most significant cost component of endoscopy is the labour costs of the medical specialists performing endoscopic procedures. The introduction of nurse endoscopy has the potential to lower the labour cost without any reduction in the quality of care. We consider that Queensland cannot ignore the paradigm shift that has occurred in the United Kingdom and Netherlands, where endoscopy services are delivered using registered nurses.

The other major driver is the shortage of specialist medical labour in the public health system. Using medical specialists for procedures that are increasingly performed by nurses as part of multidisciplinary teams in other countries is inefficient and a poor use of limited medical skills, which should be deployed in areas where they can make a much greater contribution relative to the rest of the labour pool.

8.3 Key interventions
Key interventions discussed in the Investment Management workshops (August 2013) include:

- implementing transparent, reliable and accurate data and reporting systems for waiting lists and endoscopy activity to support decision making
- increasing the uptake of non-invasive and more cost effective screening approaches, such as FOBT to reduce the reliance on endoscopy for screening
- improving the endoscopy referral process to optimise demand for services, including: screening, referrals, triage and surveillance
- notifying current patients on waiting lists that they will receive an endoscopic procedure within 12 months through the one-off procurement of additional services
- securing additional on-going funds to manage the year on year growth in endoscopy that is largely outside Queensland Health control
• enabling, empowering and encouraging HHSs to take a long-term systems approach to planning for and resourcing endoscopy
• changing the model by which public hospitals can incentivise an increase in the throughput of endoscopy patients
• increasing the level of utilisation of public health system endoscopy facilities
• improving productivity through service redesign and optimal use of resources, such as specialist clinicians, nurse endoscopy and Telehealth services
• transforming the cost and capacity to service demand through the use of nurse endoscopists operating within a multidisciplinary team
• improving patient outcomes and productivity through the increased use of multidisciplinary teams
• replacing waiting lists with a process of booking patients to receive an endoscopy at the time of referral and
• ensuring all patients have timely access to treatment following endoscopy diagnosis.