Project Report

Procurement Summary - PICC & Midlines

Frimley Park Hospital is one of the first hospitals in the country to trial Bard's Sherlock Tip Confirmation System. The Sherlock 3CG is a new PICC technology which is used in real time to direct and correctly position the PICC tip. The technology reduces risks associated with 'blind' catheter placement and reduces the need to X-Ray all patients that receive a PICC.

The intangible & clinical benefits of the Sherlock 3CG are:

- Eliminates time previously spent waiting for X-ray confirmation readings
- Reduces nurse time spent on catheter tip repositions
- Helps reduce time to infusion therapy
- Eliminates X-ray exposure to the patient and clinician
- Eliminates radiation exposure from fluoroscopy

The Trust has been trialing the 3CG system to ascertain the clinical and financial benefits of using this new technology. To date 56 PICC's have been inserted using 3CG which has provided evidence of both clinical and financial benefits to introduce the Sherlock 3CG as the primary method for PICC insertions.

This procurement report appraises three options for the purchase and placement of PICCs. The report recommends the Trust proceed with option 3 – To purchase the Sherlock 3CG system which will provide a saving of £17,810 over option 2; note all figures exclude VAT.

	Expenditure			**Annual Saving**
Options Appraisal	**Revenue**	**Capital**	**Total**	**Option 2 Comparison**
Op1: Historic Groshong	80,185		80,185	17,508
Op2: 13/14 PowerPICC	97,693		97,693	-
Op3: Sherlock 3CG	70,013	9,870	79,883	17,810

Implementing option 3, the Sherlock 3CG, will provide the greatest benefits to patient experience and outcome by enabling the clinical team to start patient treatment without the delay of organising and waiting for X-Ray results. It reduces the patients' exposure to radiation and minimises the risk of mal-positioned PICCs, which result in extending the patients stay in hospital. Once the capital equipment has been purchased the saving is forecasted at £27,680.

Sherlock 3CG Capital Costs

The Sherlock 3CG system has been quoted at £9,870 excluding VAT. This includes; Sherlock 3CG Standalone System (£5,700), MER Stand (£2,000), Sherlock 3CG MER Mounting (£970) and Brother Printer (£1,200).

Maintenance costs will be incurred from year two at approximately £850 p.a.

Option 1 – Baseline costs (Historic Benchmark / Do nothing)

Current Costs	Sub-Totals	Totals
Number of PICCS placed pa	400	
Current Materials - PICC Line	110.21	
Current Materials - PICC Pack	14.68	
Cost of Chest X-Ray	26	
Estimated cost of Current PICC Placement + Chest X-Ray	150.89	
Total Current Cost of Materials and X-Ray		**60,356**
Estimated PICCs requiring second X-Ray	20	
Cost of Second X-Rays	26	**520**
Number of Fluoroscopy Required	20	
Cost of Fluoroscopy	235.68	**4,714**
Estimated cost of hospital stay and equipment for mal-positioned PICCS	364.89	**14,596**
Estimated Total Annual Cost of all Current PICCS placed with Chest X-Ray plus mal-position rate		**80,185**

Option 2 – Traditional Placement with PowerPICCs (13/14 Forecast)

The Trust is currently moving away from the traditional PICCs (Groshong) to PowerPICCs. Patients that undergo treatment that requires a PICC will commonly require CT scans or MRI - The advantage of the PowerPICC is that the clinician is able to power inject contrast media through it, which is not possible in the Groshong PICC (a low pressure line).

The non-tangible benefits of purchasing the PowerPICC compared to the Groshong PICC are:

- Reduces nurse time spent preparing patients for CT & MRI
- Reduce cost of replacing the PICC for a high pressure line
- Improves patient experience - the one PICC line is able to administer both high and low pressure treatments. Eliminating requirement for a cannula and additional venipunctures.
- Improved line – open ended (valve) line reduces blockages, which in turn, reduces the time nurses spend flushing, repairing or replacing lines.

Current Costs	Sub-Totals	Totals
Number of PICCS placed pa	400	
Current Materials - PICC Line	150	
Current Materials - PICC Pack	14.68	
Cost of Chest X-Ray	26	
Estimated cost of Current PICC Placement + Chest X-Ray	190.68	
Total Current Cost of Materials and X-Ray		**76,272**
Estimated PICCs requiring second X-Ray	20	
Cost of Second X-Rays	26	**520**
Number of Fluoroscopy Required	20	
Cost of Fluoroscopy	235.68	**4714**
Estimated cost of hospital stay and equipment for mal-positioned PICCS	404.68	**16,187**
Estimated Total Annual Cost of all Current PICCS placed with Chest X-Ray plus mal-position rate		**97,693**

Option 3 – Implementing Sherlock 3CG system for PICC Placements (Recommend Option)

The Sherlock 3CG TCS simplifies the PICC insertion process by combining tip placement technology. The Sherlock technology enables the clinician to locate and navigate the catheter tip to the Superior Vena Cava (SVC) using ultrasound and to confirm the Tip placement by the ability to distinguish changes in P-wave amplitude through the ECG readings.

The Sherlock 3CG is an alternative to chest x-ray and fluoroscopy for PICC tip placement. During the Trust trial - all 56 PICC's placed to date have been correctly positioned and would not have required a chest x-ray or fluoroscopy. The technology can be used to place PICCs in 99% of all cases. The traditional method & chest x-rays would still be required to be used on the 1% of patients that have irregular cardiac rhythms that change the normal presentation of the p-wave.

The financial benefit of implementing the Sherlock 3CG is the technology significantly reduces the chance of a mal-positioned PICC. The financial consequences of a mal-positioned PICC are that the patient would be required to stay an additional night in hospital. The cost of an overnight stay is £240. Additional costs would be added for the additional PICC and x-ray required.

The intangible & clinical benefits of the Sherlock 3CG are:

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- Reduces nurse time spent on catheter tip repositions
- Helps reduce time to infusion therapy
- Eliminates X-ray exposure to the patient and clinician
- Eliminates radiation exposure from fluoroscopy

Sherlock System	***Sub-Totals***	**Totals**
Cost of SOLO Power PICC and Pack	174.44	
Cost of SOLO PICC only	150	
Number of PICCs placed pa	400	
Number of PICCS placed using Sherlock	396	
Number of PICCs placed in traditional method	4	
Costs of PICCs and Pack used with Sherlock		**69,078**
Costs of PICCS and X-Ray for those not able to use Sherlock	190.68	**763**
Estimated PICC placements not using Sherlock requiring second X-Ray	0.4	
Cost of Second X-Rays	26	**10**
Estimated cost of hospital stay and equipment for mal-positioned PICCS	404.68	**162**
Maintenance (Y1)	0	**0**
Total Annual Cost switching to Sherlock (including use of SOLO PICCs for pt unable to use Sherlock)		**70,013**
Total Capital Costs - Sherlock 3CG Stand alone System, MER Stand, Sherlock 3CG MER Mounting & Brother Printer		**9,870**
Grand Total Annual Cost, including Capital		**79,883**