



Reducing the occlusion rates of peripheral midlines

Our 5 year experience using Bionector TKO needle free connectors

By
CDDFT IV Team



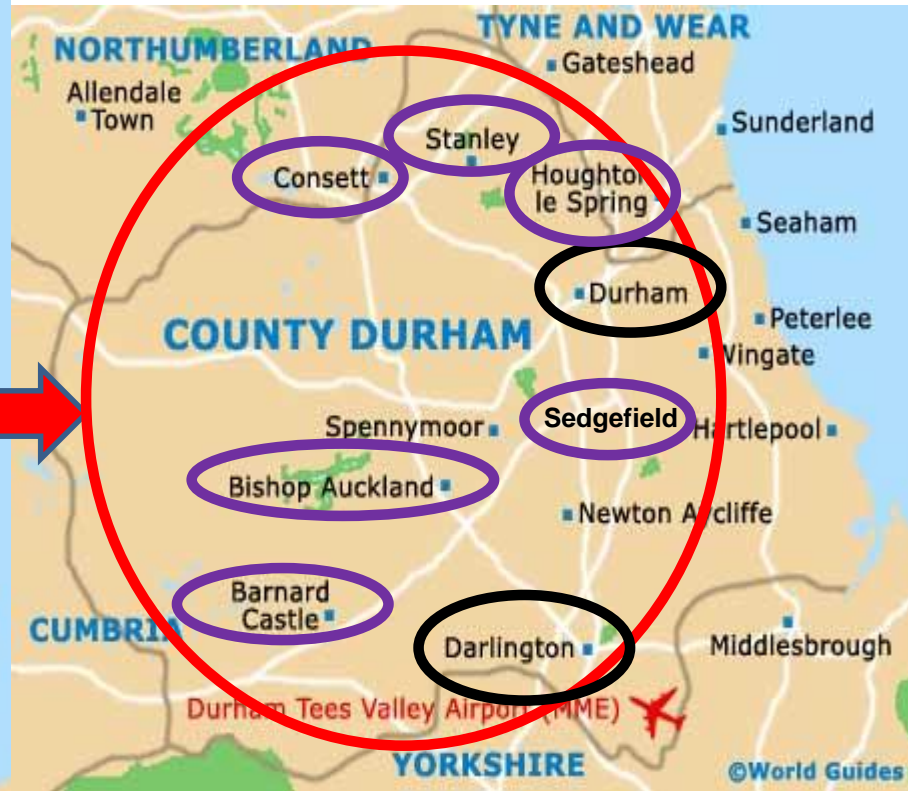


Disclaimer

- ❖ Thank you to Vygon to support my travel and accommodation costs in order for me to be able to attend today
- ❖ The opinions expressed in this presentation belong to Alex Maurer and are not those of any employer, sponsor or professional group
- ❖ This presentation is for educational purposes based on our experiences only and is not associated with product promotion



County Durham & Darlington Foundation Trust





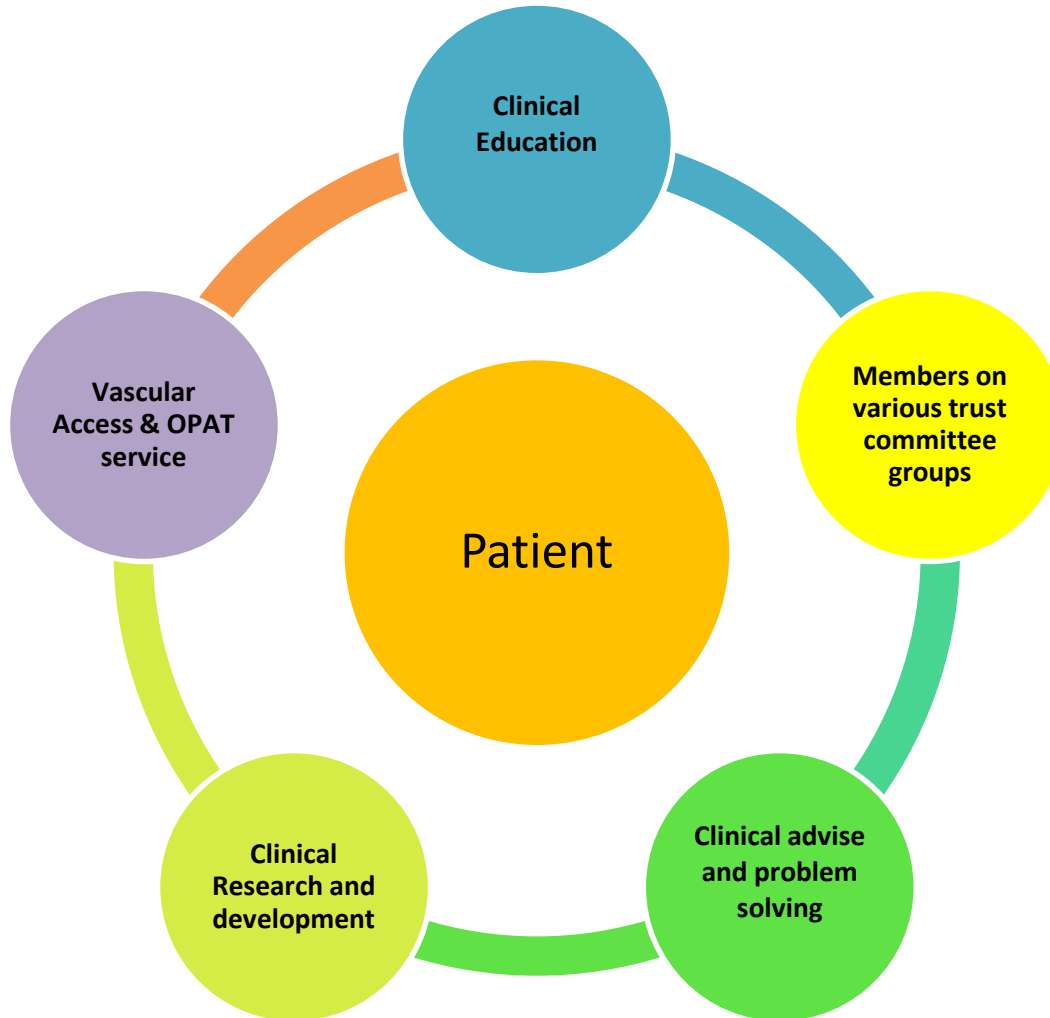
Background

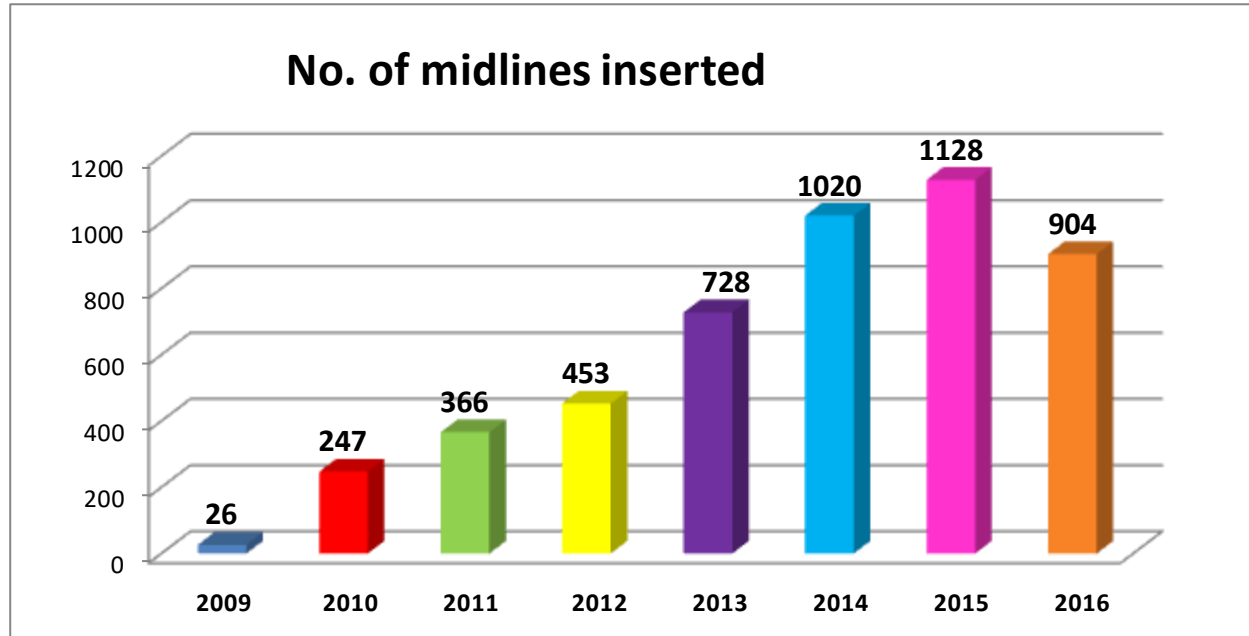
- ❖ **IV team established in 2007 to reduce the high numbers of vascular line related MRSA Bacteraemias via education and audit**
- ❖ **3.2 wte specialist nurses, 1.0 wte assistant practitioner**
- ❖ **Established a Midline Vascular Access Service in 2009.**
- ❖ **Placed for short -long term IV therapy (ph. 5-8), or poor access**
- ❖ **The IV Nurse Specialist insert the midlines at patient bedside**
- ❖ **All midline information is collected on a database**
- ❖ **Put in place a focused education programme for care and maintenance of midlines.**





IV & OPAT Team

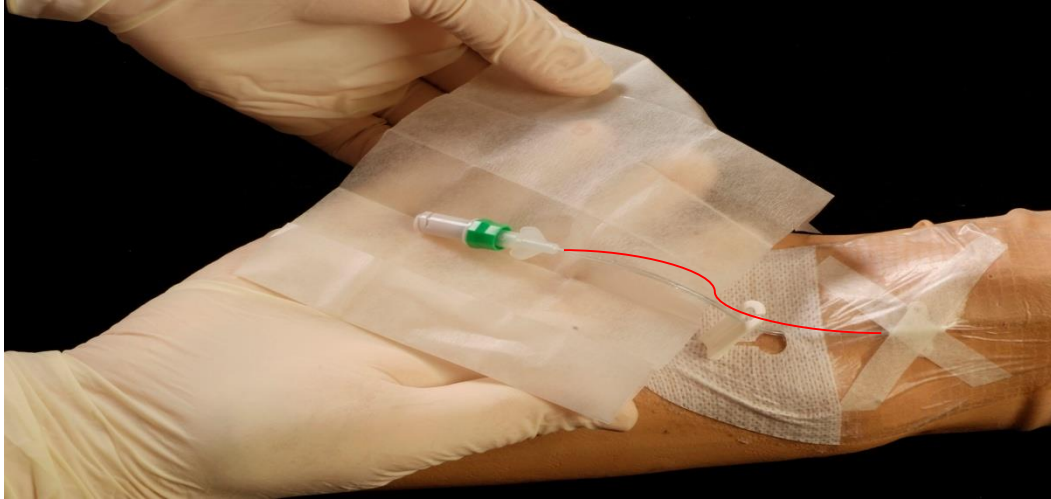




- ❖ All midlines are Vygon Leaderflex or Lifecath
- ❖ All midlines are managed with Vygon TKO Bionectors
- ❖ 4871 Midlines placed in total
- ❖ On average 95 peripheral midlines are inserted per month.
- ❖ Average dwell time: 11 days



2011 – The Problem



- ❖ **Reflux of blood in the midline- high blockage events**
- ❖ **Ward staff and IV Team Nurse Specialist time trying to unblock lines**
- ❖ **Replacement of midlines due to the blockage.**
- ❖ **Increased cost**
- ❖ **Poor patient experience**
- ❖ **Delayed or Missed IV Treatment**



What We Wanted to Measure?

- ❖ **Number of midlines inserted**
- ❖ **Number of midlines had blockage problems**
- ❖ **Number of midline failed due to blockage**

- ❖ **What was the success rate?**
- ❖ **Should we continue with the service?**





2 Trials Conducted with Peripheral Midlines

Trial A – Normal Single Bionector Sept – Dec 2011

Trial B - New Bionector TKO Feb - Apr 2012

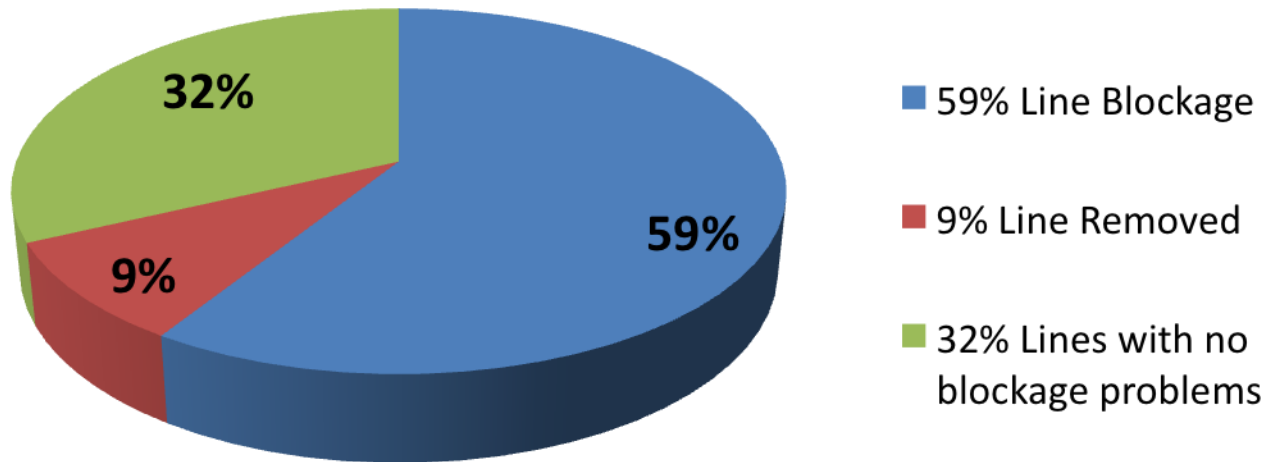
	Trial A Normal Bionector Sept- Dec 2011 (122 days)	Trial B New Bionector TKO Feb – April 2012 (63 days)
Number of Midlines Inserted during trial	133	128
No. of catheter days insitu	1549	1388



Trial A – Sept - Dec 2011

133 midlines with Bionector needle free device

- ❖ Experienced high blockage events (59%)
- ❖ 9% of the midlines were removed due to the blockage.



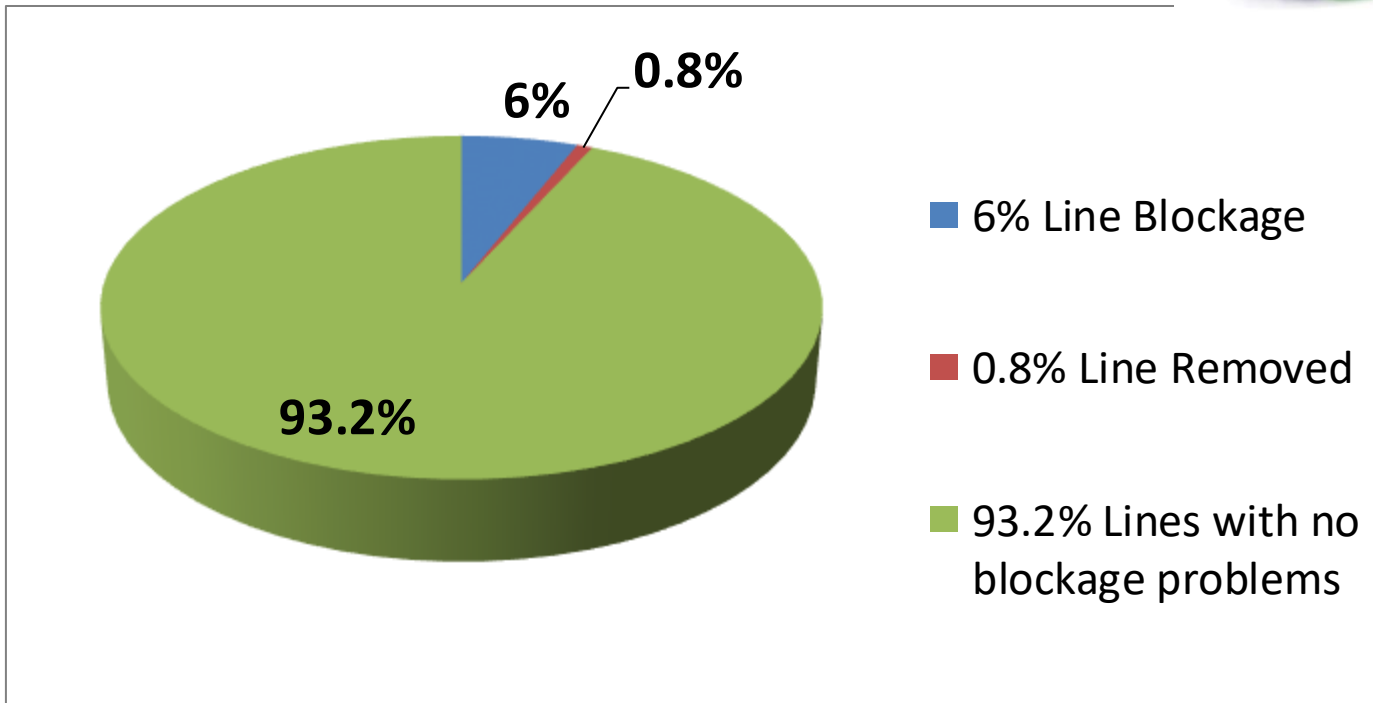
- ❖ We previously looked at various other needle free connectors to see if this problem could be alleviated, this however still resulted in a 9% loss of midlines.
- ❖ Education plan already in place
- ❖ Daily visits to ward patients by IV Team Nurse Specialists.



Trial B – Feb - Apr 2012

128 midlines with Bionector TKO needle free device

- ❖ Experienced low blockage events (6%)
- ❖ 0.8 % of the midlines were removed due to blockage





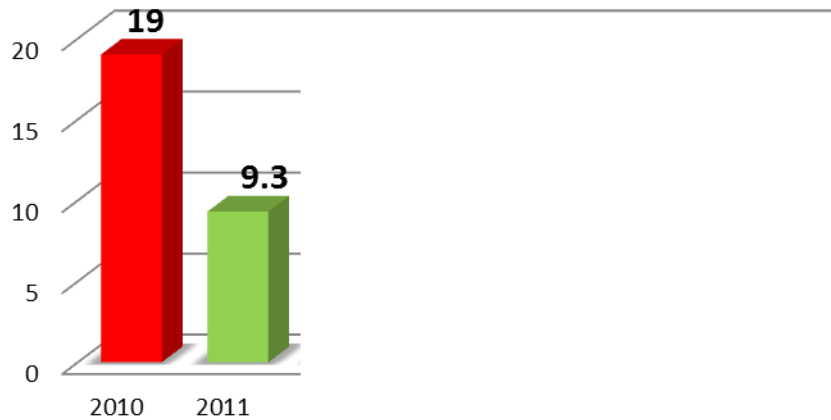
What's been happening since the trial?





Since the trial in 2011....Sept 2016

% of removed midlines due to total blockage

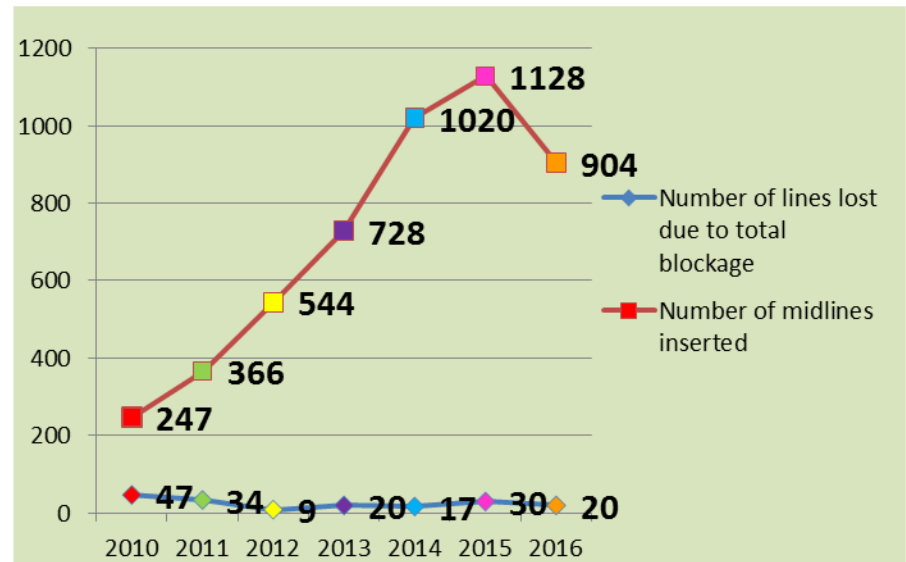
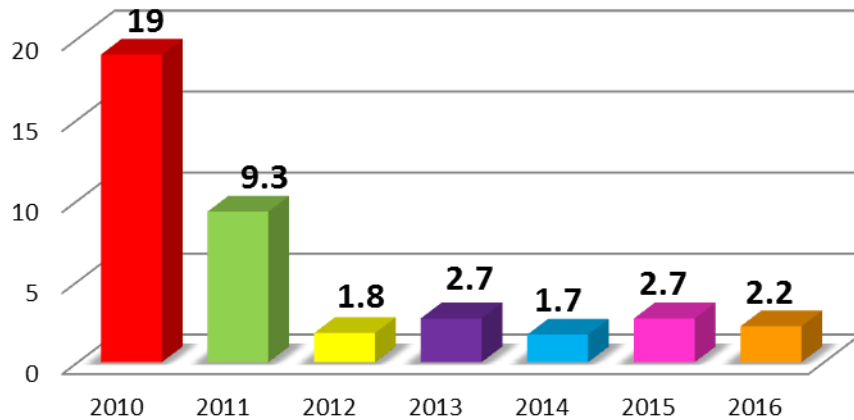


❖ **Education and Equipment**



Since the trial in 2011....Sept 2016

% of removed midlines due to total blockage

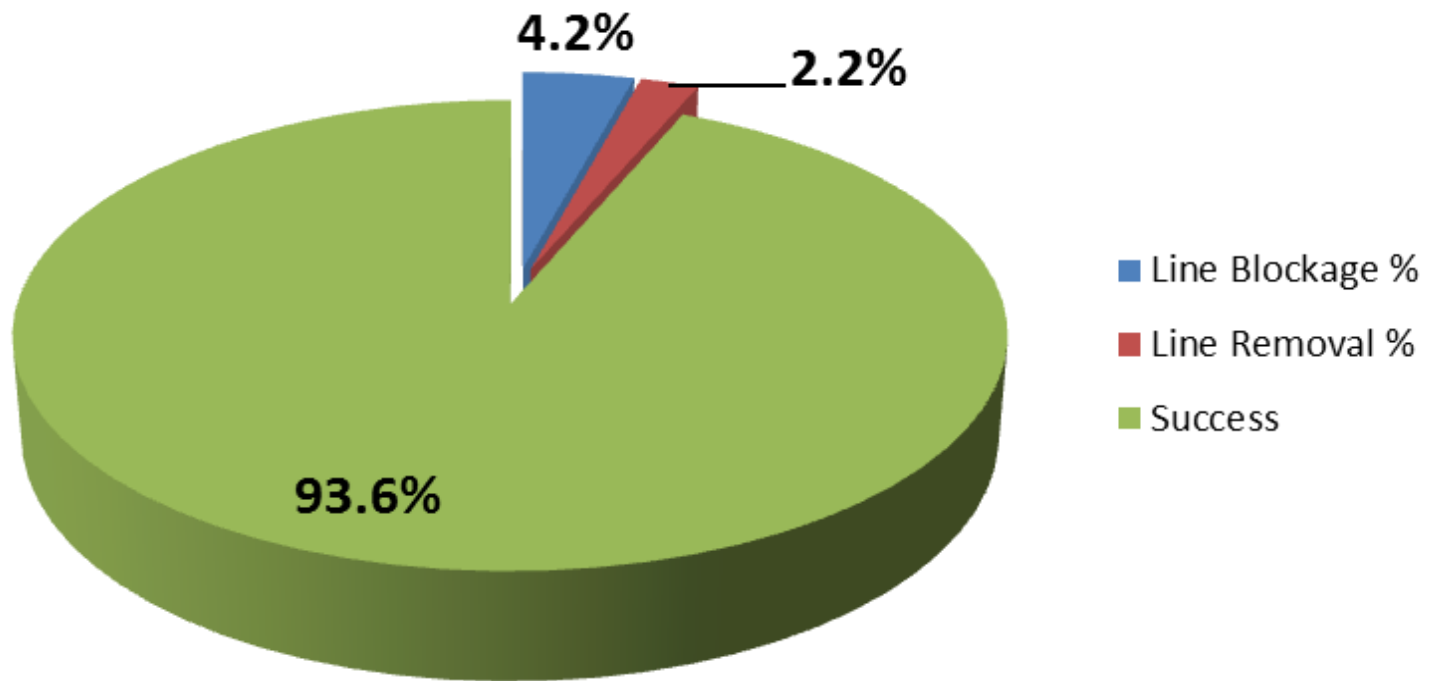


❖ Education and Equipment



Since the trial in 2012....Sept 2016

Data collection 2012- Sept 2016





5 Years of Data Collection since using TKO Bionectors:

❖ Since 2012 additional 4324 midlines insertions

	Line Blockage %	Line Removal %	Success %
2011 Old Bionector	59	9	32
2011 TKO trial	6	0.8	93.2
2012-16 Sept TKO	4.2	2.2	93.6



Additional Problems Experienced?



- ❖ **No longer compatible with glass emergency syringes**

Solution - use adaptor or remove! No actual recorded cases in practice.

- ❖ **Clinical service has expanded so team reduced amount of educational sessions to re- enforce flushing advice/ midline trouble shooting. (so lines reported as removed as blocked might not actually be the cause)**

Solution – ward champions to do in house updates and re- enforcement (variable success)

- ❖ **Clinical referrals significantly increases so reduced the amount of time nurse specialist can re visit the patient to check the midline**

Solution – ward champions to do in house updates and re- enforcement (variable success)



Conclusions



From our observations.....

- ❖ **Bionector-TKO appears to significantly reduce midline blockage rates**



- ❖ **Decreases the risk of drugs not administered on time or missed due to lack of IV access**
- ❖ **Decrease costs (equipment/additional heparin flushes and nurse time)**
- ❖ **Increased time for prompt new line insertions and time spent with patients**
- ❖ **Increases time for staff education and support**
- ❖ **Increased patient satisfaction and overall hospital experience**



Future Plan.....

- ❖ Continue to manage all midlines with Vygon Bionector TKO
- ❖ Look for opportunities to develop and improve the product
- ❖ Maintain data collection to focus on continuous improvement
- ❖ Celebrate the success of the midline service and the positive impact for the patients experience in the completion of their treatment.





Thank you – Any Questions?

Alex Maurer
Lead Nurse Specialist IV &OPAT Team
Darlington Memorial Hospital,
Darlington,
DL3 6HX
UK

