181

Implementing MAGIC and improving cannulation practice

Catherine Fielding[1], Leeanne Lockley[2], Ian Stott[3], Maggie Higginbotham[4], Ben Wilson[5], Vicky Fairclough[3], Zukifar Pondor[6], Mark Wright[7], Tilly Leach[8], Gary Carlisle[13], Rafinsia George[8], Smeeta Sinha[6], Kathleen Pegg[12], Margaret Aitken[11], Alison Swain[9], Beth Crosby[2], Ranjit Klare[2], Scott W. Oliver[10]

[1]University Hospitals Of Derby And Burton NHS Foundation Trust, Derby, United Kingdom, [2]UK Renal Registry, Bristol, United Kingdom, [3]Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust, Doncaster, United Kingdom, [4]York Teaching Hospitals NHS Foundation Trust, York, United Kingdom, [5]Wirral University Teaching Hospitals NHS Foundation Trust, Wirral, United Kingdom, [6]Salford Royal NHS Foundation Trust, Salford, United Kingdom, [7]Leeds Teaching Hospital, Leeds, United Kingdom, [8]Liverpool University Hospitals Foundation Trust , Liverpool, United Kingdom, [9]Royal Berkshire Hospital, Reading, United Kingdom, [10]University Hospitals Monklands, Airdrie, United Kingdom, [11]Queen Elizabeth University Hospital , Glasgow, United Kingdom, [12]Lancashire Teaching Hospitals, , , [13]Bradford Teaching Hospitals NHS Foundation Trust, ,

Introduction: Arteriovenous (AV) fistulae and grafts are the optimal form of vascular access for most haemodialysis patients. Cannulation is a challenging but necessary procedure to be able to use AV access for haemodialysis. Repetitive use and cannulation damage the AV access, causing stenosis, with eventual thrombosis and failure. Buttonhole and rope ladder cannulation minimise this damage, whilst area puncture increases it. Whilst the British Renal Society (BRS) and Vascular Access Society of Britain and Ireland (VASBI) Needling Recommendations promote avoidance of area puncture, this continues to be the pre-dominant cannulation technique in use within the UK.

Managing Access by Generating Improvements in Cannulation (MAGIC) is a quality improvement project designed to improve cannulation for haemodialysis, minimising the use of area puncture cannulation and promoting the use of rope ladder and / or buttonhole cannulation.

Methods: MAGIC includes four phases: baseline measures, staff education, patient awareness and a region designed phase. It includes materials to assist units in improving cannulation practice, including a measurement strategy, an eLearning package and awareness materials designed for patients. These materials can be implemented in Plan-Do-Study-Act cycles in the four phases, alongside local initiatives. The Kidney Quality Improvement Partnership (KQuIP) assists regions in implementing MAGIC. The first two regions have implemented the staff education phase and are progressing onto the patient awareness phase. Data (as defined by MAGIC's measurement strategy) have been collected from the first two regions and amalgamated, to identify the impact of MAGIC to date.

Results: Data collection spanned 9 months (M1-M9), with 3,150 cannulation events audited from 20 different main and satellite units. Region 1 implemented MAGIC eLearning at Month 5 (M5) and Region 2 at Month 7 (M7). Through MAGIC, the use of rope ladder and buttonhole cannulation has increased (M1=53.0%; M5=64.9%; M7=63.3%; M9=66.4%). Missed cannulation was identified on 200 occasions (6.2%) and was increasing at M5 (M1=5.2%; M5=8.7%, M7=7.0% and M9=10.0%). To date, 177 users have started MAGIC ELearning and 51 users have completed this. Data are also being analysed for rates of AV access use, loss of AV access and use of new AV access.

Conclusion: MAGIC is leading to an improvement in cannulation technique used for haemodialysis, with increased use of rope ladder and / or buttonhole cannulation, with a corresponding reduction in area puncture. There has been an increase in 'missed cannulation'. However, we anticipate that as nursing cannulation expertise in 'new' practices becomes embedded, missed cannulation should reduce. Data will continue to be collected regularly from participating regions, enabling continued monitoring.

MAGIC is currently being implemented in two further regions with interest from other regions. It is anticipated that improved cannulation practice associated with the MAGIC programme will result in better longevity of AV access.