

PAEDIATRIC VASCULAR ACCESS THROUGH THE AGES - ONE CENTRE’S EXPERIENCE

The vascular access team was established at King’s in 2009, primarily concentrating on improving infection control practices, reducing the incidence of IV catheter associated bloodstream infections. As well as standardisation of the vascular access devices, while the insertion of PICC lines for adult patients was introduced 12 months later. Since the inception of the team, one of the vascular access practitioners was from a paediatric background and therefore was willing to take the challenge of establishing a dedicated paediatric service (Ojo, S.A. 2020). This service began in 2014, with an increase in service provision in 2021, and currently now with 2 ANPs and 1 VA practitioner providing a dedicated 2 day a week service, the Paediatric PICC service at King’s has increased to over 100 insertions a year. Insertions continue to be either by the bedside, in treatment rooms (with confirmation of tip with ECG-based tip location systems), or in operating theatres with tip location mainly by fluoroscopy. The age range for patients taking to theatre is up to 5yrs, or all age groups undergoing elective procedures at the time of requiring PICC line for post procedural intravenous treatment therapy.

Sam Archer ¹, Sue Giddings ¹, Samuel A. Ojo ²

¹ Advanced Nurse Practitioner - Children's Critical Care - King's College Hospital London UK

² Lead Vascular Access Practitioner - King's College Hospital London UK

Methods

Data was gathered from all recorded PICC insertions from 2014 to the time of writing. The data from 2014-2023 was limited in its breadth, but was it was still possible to compare key performance indictors from before and after the full-service establishment. Currently all data is being collected in real time with each PICC insertion and past insertions are audited weekly for removal etc.

Results

The age of children having PICCs inserted has gradually decreased overtime, though average is 7-8 year olds. (Chart 1)

The number of PICC lines inserted in children has steadily increased over the 11 years, with the exception of years during the pandemic. (Chart 2)

The use of the operating theatre (OT) for placement of PICCs has increased as the age of children taken to theatre for placement has decreased. (Chart 3)

The location of placement is mostly split between the OT and at the bedside, with some inserted in Paediatric Intensive Care (PICU) or radiology. (Chart 4).

Conclusions

Since the introduction of a Paediatric PICC line service at King’s College Hospital in 2014, the service has expanded and formalised, and as a result, the number of paediatric patients who have undergone a PICC line insertion has increased, the median age of patient has decreased, and the use of the operating theatre has also increased. Going forward, we predict the numbers will continue to increase and hopefully this data will allow us to put forward a business case to secure a dedicated service and a dedicated theatre list to ensure efficient line insertions. In a recent article, (Hauser et. All 2020) “a prospective journey of the peripherally inserted central catheter service, at a tertiary paediatric centre in Western Australia” the authors also recognised the positive impact of theatre in their service.

References:

Badheka, A., Bloxham, J., Schmitz, A., Freyenberger, B., Wang, T., Rampa, S., Turi, J., Allareddy, V., Auslender, M., & Allareddy, V. (2019). Outcomes associated with peripherally inserted central catheters in hospitalised children: a retrospective 7-year single-centre experience. *BMJ open*, 9(8), e026031
[Hauser](#) N, D et. al (2020), A prospective journey of the peripherally inserted central catheter service, at a tertiary paediatric centre in Western Australia, *Acta Anaesthesiologica Scandinavica* 64(5) pg635-640.doi: 10.1111/aas.13539. Epub 2020 Jan 22.
Ojo, S.A (2020). Reflections on setting up a nurse-led paediatric peripherally inserted central catheter service, *British Journal of Nursing*, 29(14): S16-S20.

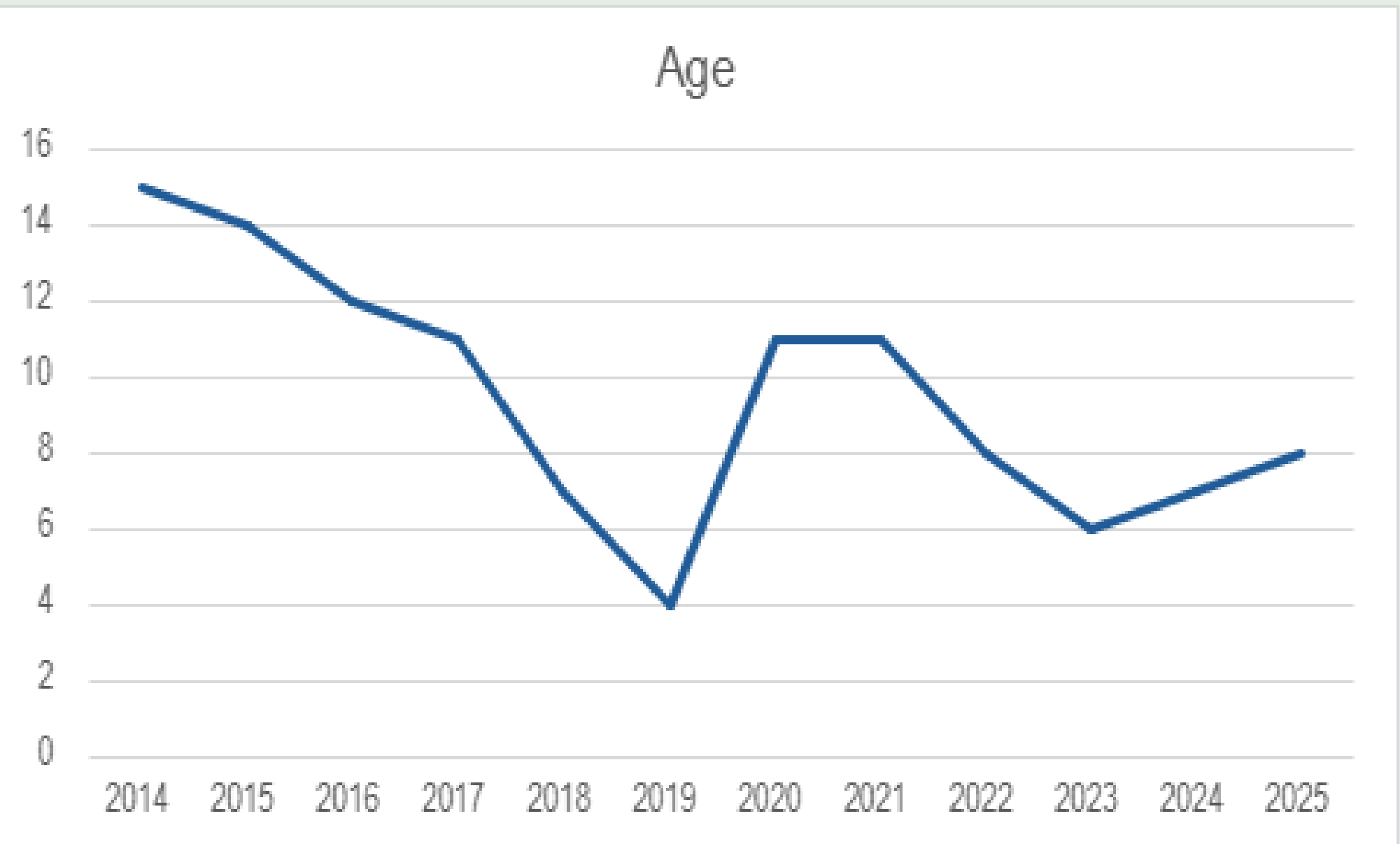


Chart 1

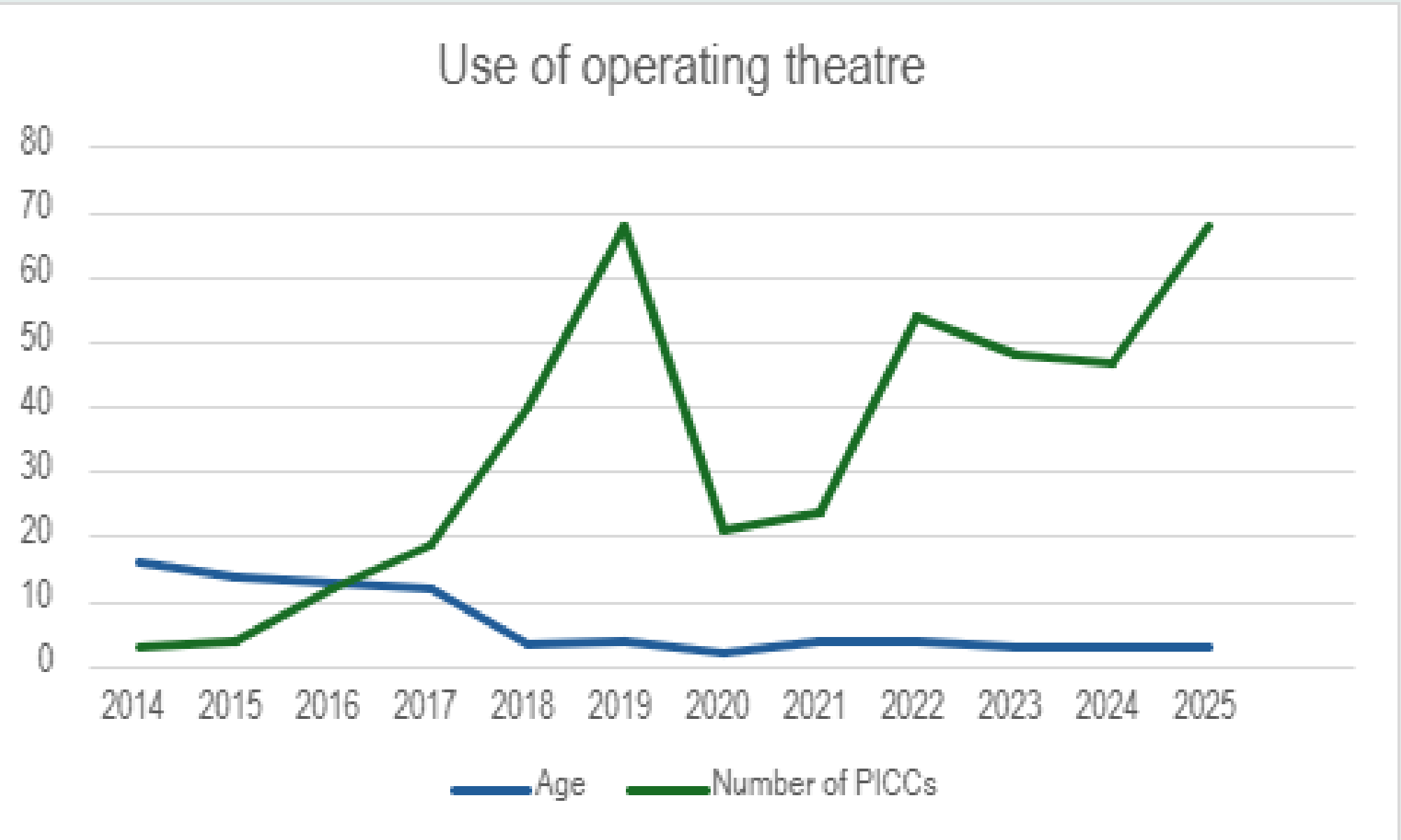


Chart 3

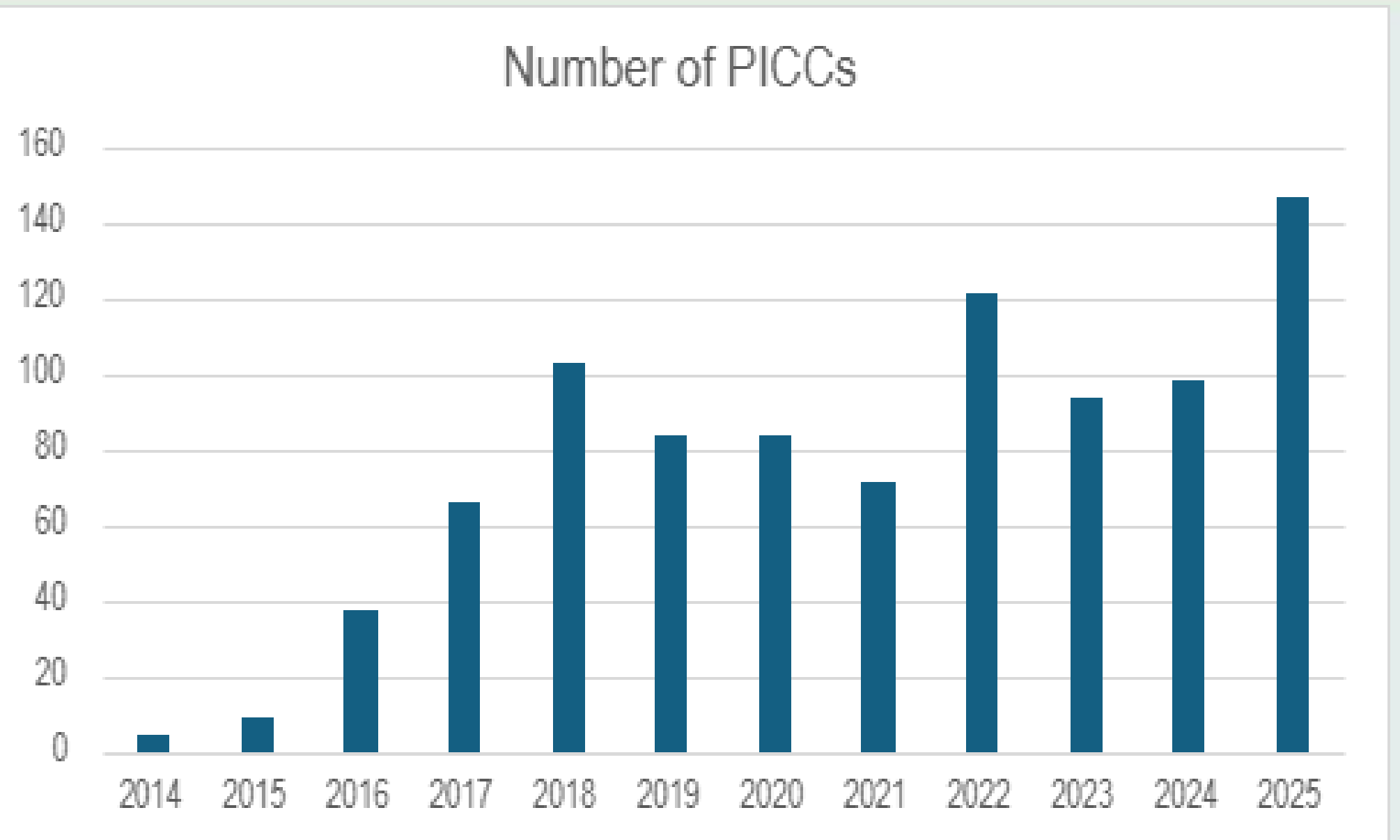


Chart 2

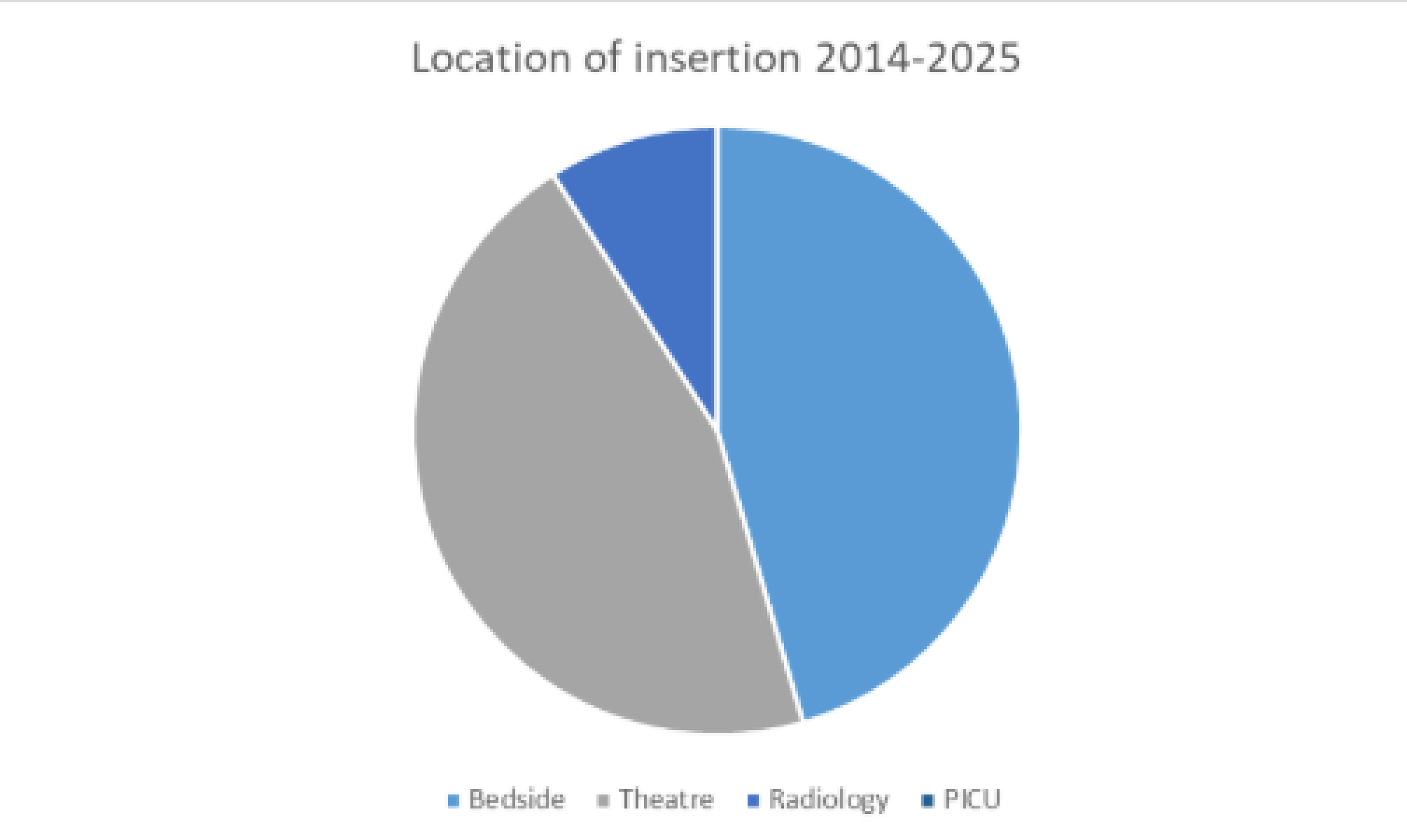


Chart 4