Abstract:

Background: The Michigan Appropriateness Guide for Intravenous Catheters (MAGIC) was published in 2015, recommending more restricted indications for peripherally inserted central catheter (PICC) placement, particularly for those placed by physicians. Changes in PICC placement volume since the publication of MAGIC is largely unknown.

Objective: To study the trends in volume and reimbursement for PICC placement by physicians and advanced practice providers (APPs) for Medicare enrollees from 2010-2018 with specific attention to the changes in volume following the publication of MAGIC in 2015.

Methods: Claims from the Medicare Part B Physician/Supplier Procedure Summary Master File (PSPSMF) for the years 2010 to 2018 were extracted using the CPT code for PICC placement. Total volume and payment amounts (professional component) were analyzed. Trendline slopes for volume per 100,000 Medicare beneficiaries before and after the 2015 publication of MAGIC were compared.

Results: Volume for PICC placement by physicians and APPs steadily declined from 243,837 in 2010 to 130,361 in 2018 (46.5%). The PICC placement volume decreased sharply following the 2015 publication of the MAGIC guidelines. The slope of the trendline for all providers from 2010 to 2015 was -3.4 compared to -7.3 from 2015 to 2018. The change in slope was more pronounced for radiologists (-3.1 to -5.6) than for APPs (-0.019 to -1.1). Professional payment per-procedure for radiologists decreased from $78.04 in 2010 to $70.17 in 2018, and reimbursement for APPs proportionally decreased from $65.76 to $60.66 during this time. The relative share of PICC placement by radiologists declined from 77.0% in 2010 to 70.6% in 2018, with a corresponding increase in relative share by APPs from 13.6% to 18.4%. The percentage placed in outpatients increased from 15.1% to 18.2%.

Conclusion: The volume of PICC placement steadily decreased since 2010, though with a sharper decline between 2015 and 2016, corresponding with the publication of the MAGIC evidence-based guidelines. The role of APPs in PICC placement has increased over this time period.

Clinical Impact: The findings of this study suggest that evidence-based guidelines impact clinical practice on a national level.

Reference:

Lindquester WS, Dhangana R, Warhadpande S, Amesur NB. Effects of the MAGIC