

Introduction

Previous Medicare research has shown that Radiologists are increasingly performing common image guided procedures such as paracentesis, thoracentesis, and LPs. Bone marrow aspirations/biopsies have been traditionally performed by Medicine (Hematology/Oncology). We hypothesize that national data (Medicare) will show an increasing role of Radiologists in performing bone marrow aspiration/biopsies which has important implications. Knowledge of procedural demand is important to ensure appropriate education/resident training. Procedural case mix is an important consideration for Interventional Radiologists and an interesting topic of discussion

Methods

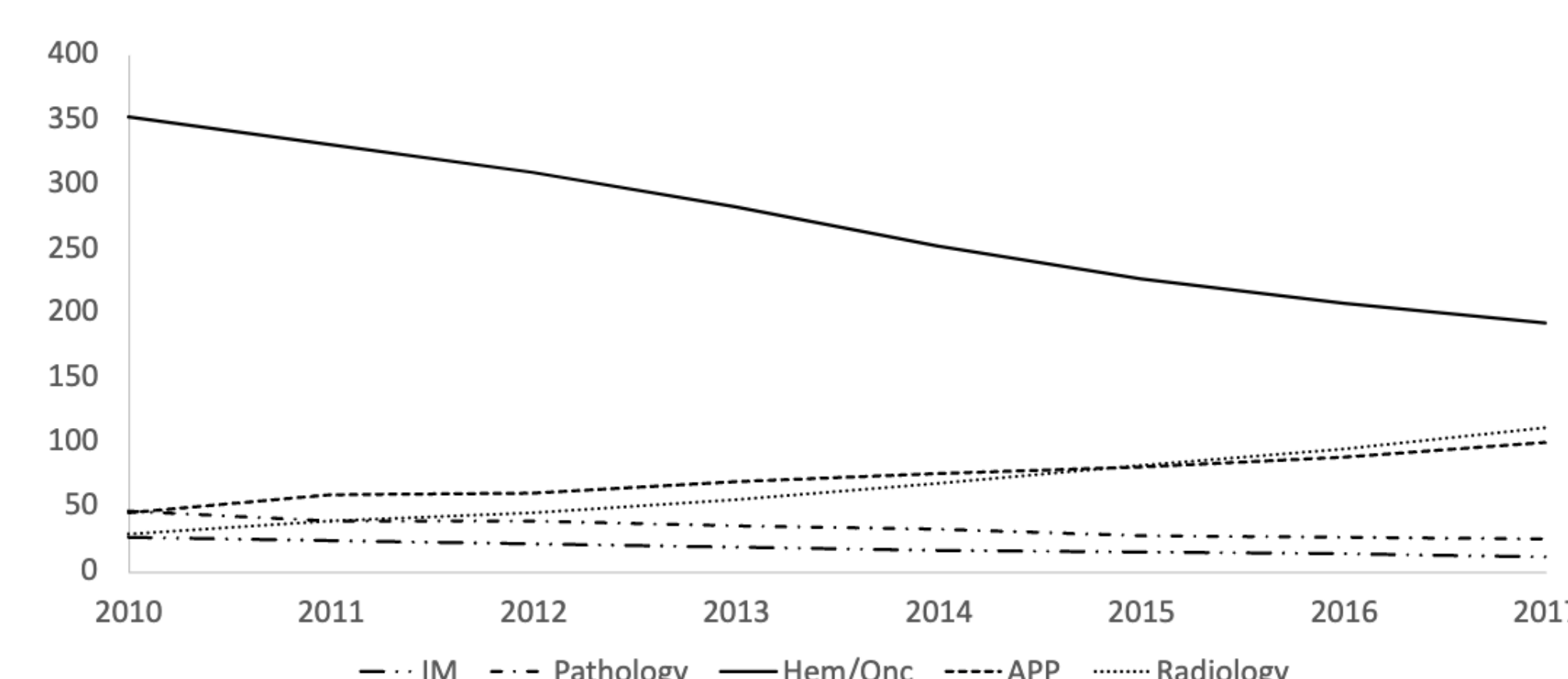
Claims from the Medicare Part B Physician/Supplier Procedure Summary Master Files (PSPS) for the years 2010-2017 were analyzed using the current procedural terminology (CPT) codes for bone marrow aspiration and biopsy. Place of service codes were used to determine location (inpatient versus outpatient). The number of allowed services (i.e. services receiving payment from Medicare) was calculated by subtracting the denied service count from the submitted service count to exclude duplicate or incorrectly billed procedures. The average per-procedure payment was subsequently calculated from the total payment and number of allowed services. The Mann-Kendall test was used to analyze for statistically significant trends in procedural volume.

Results

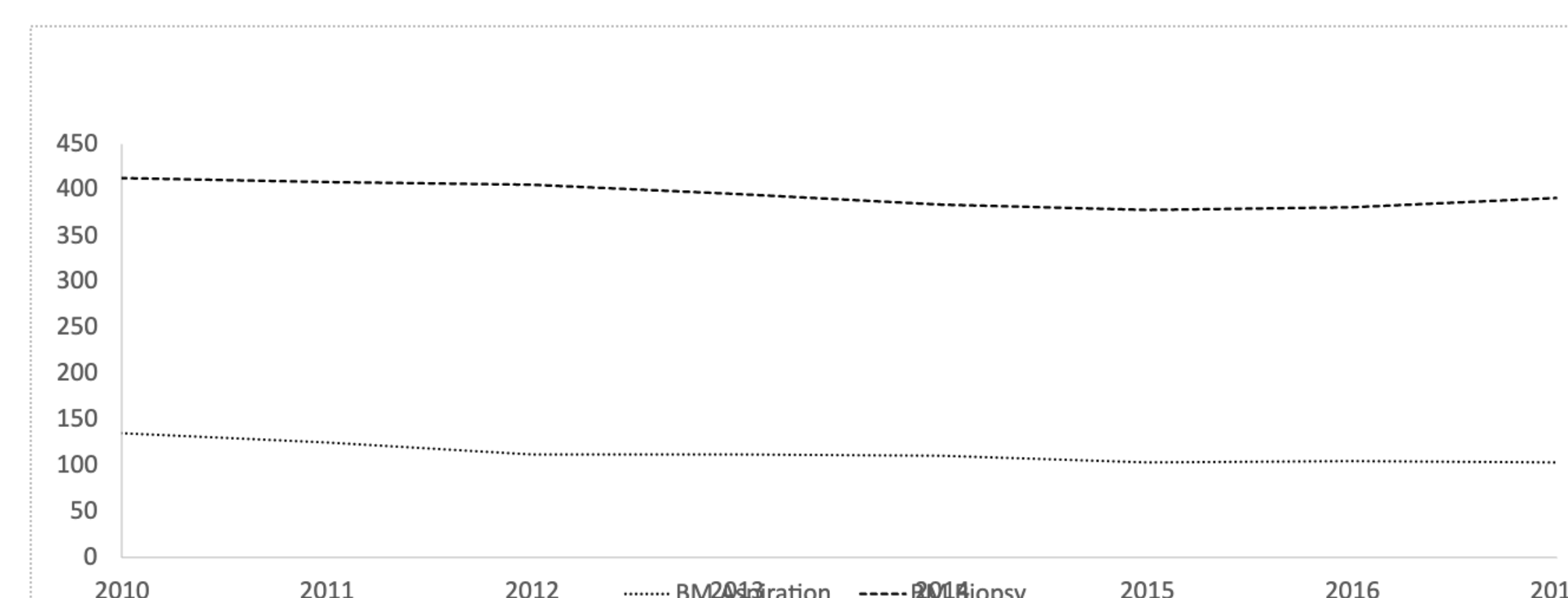
Bone Marrow Aspirations and Biopsies per 100,000 Medicare Beneficiaries from 2010-2017

	2010	2011	2012	2013	2014	2015	2016	2017	p-value
BM Aspiration	135.1	125.1	112.3	112.6	110.1	103.4	105.2	103.1	<0.01
BM Biopsy	412.9	408.1	405.0	396.1	383.9	377.9	381.3	391.5	0.02
Total	548.0	533.2	517.3	508.7	494.0	481.3	486.4	494.5	0.02

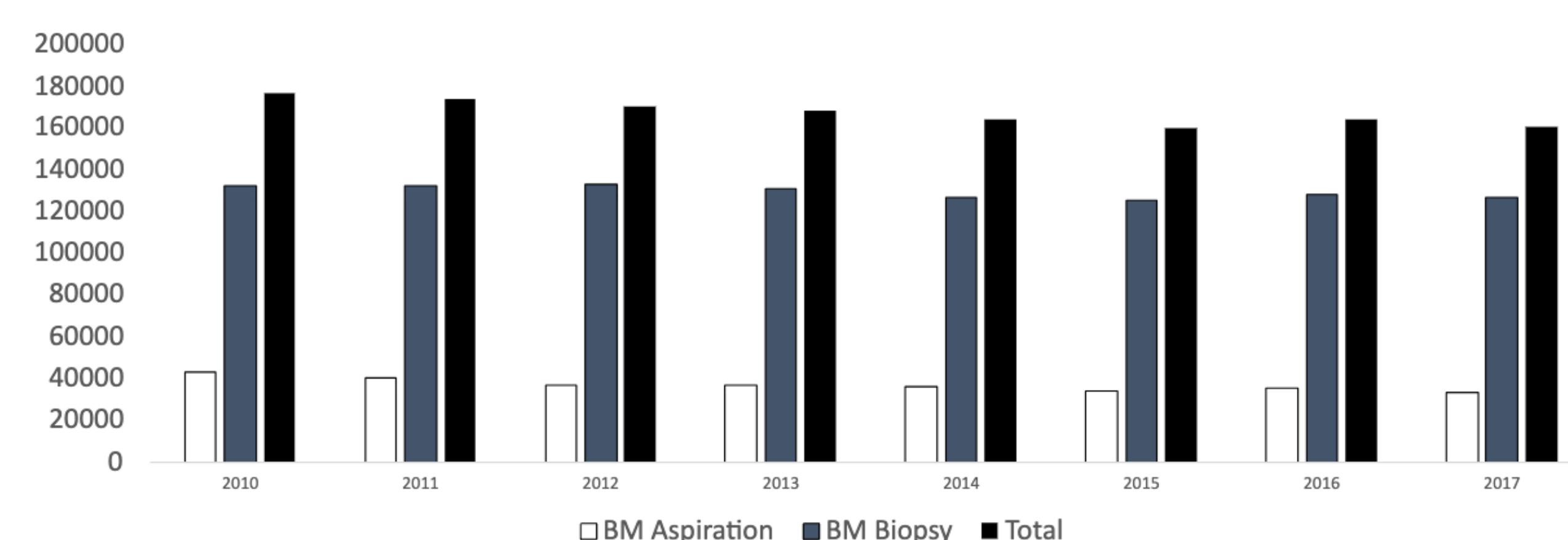
Bone Marrow Aspirations and Biopsies for 100,000 Medicare Beneficiaries from 2010-2017 by Specialty



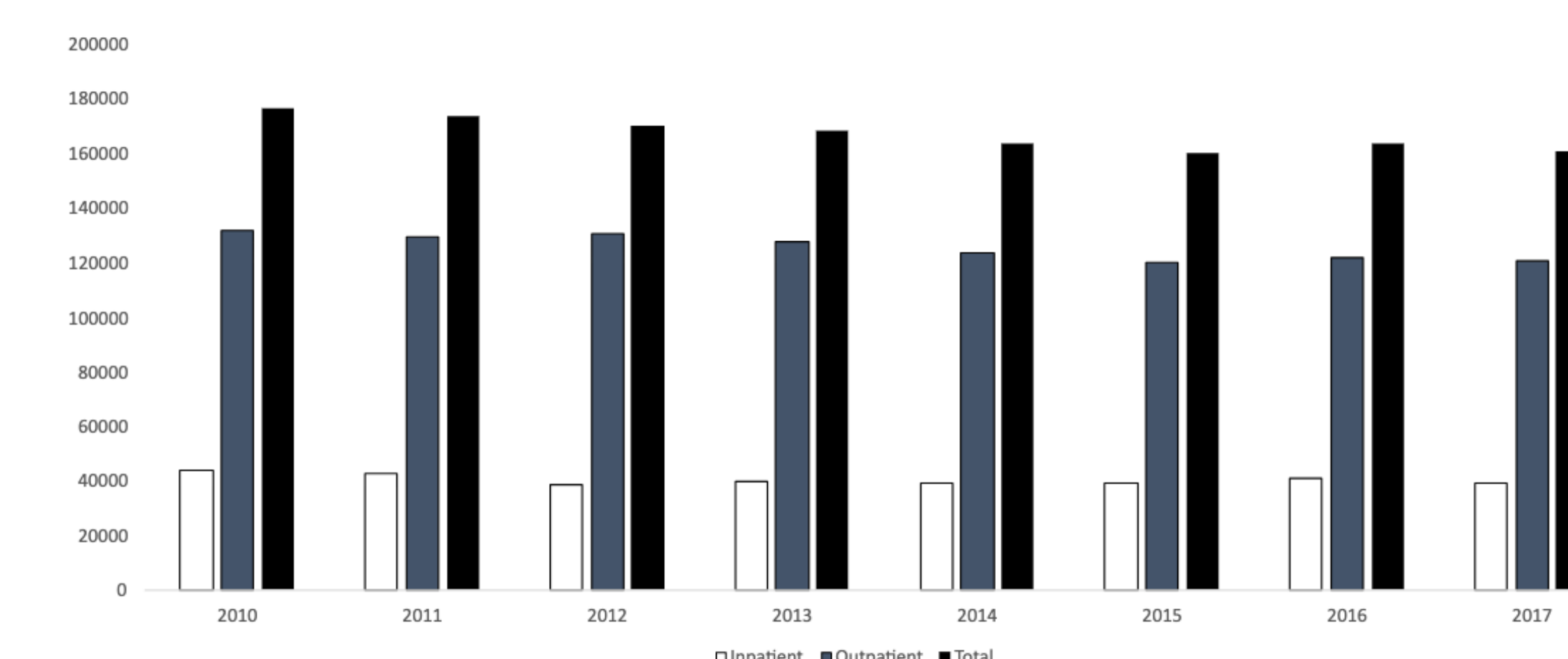
Bone Marrow Aspirations and Biopsies per 100,000 Medicare Beneficiaries from 2010-2017



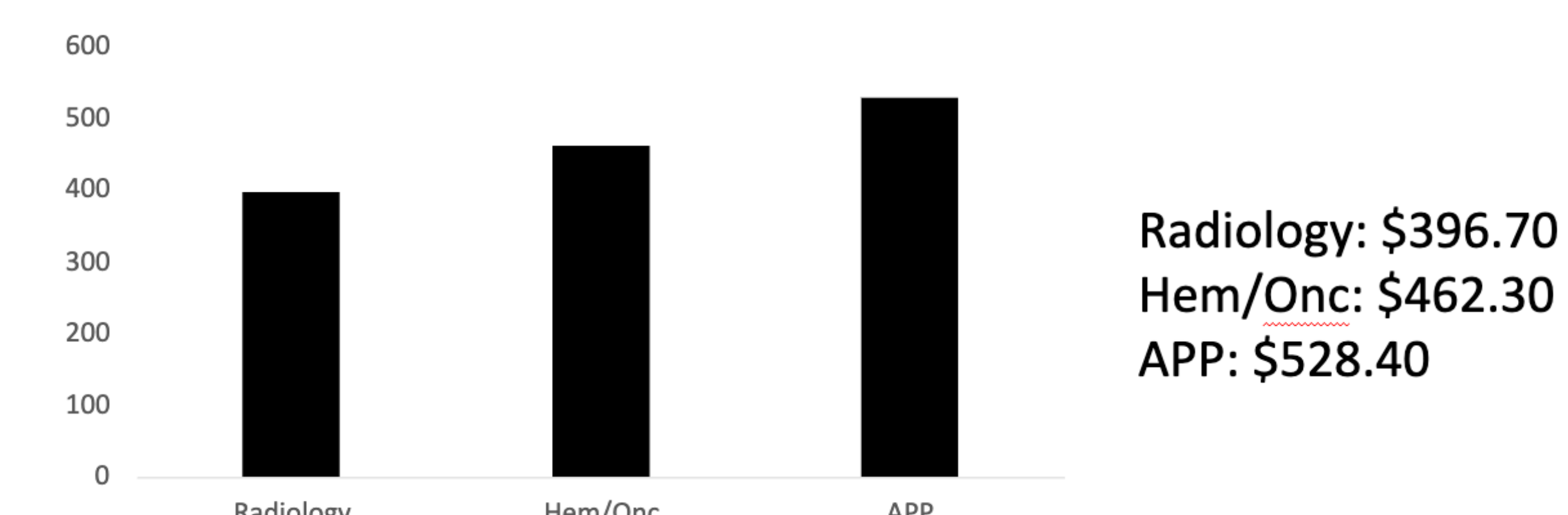
Bone Marrow Aspirations and Biopsies Per Year from 2010-2017



Bone Marrow Aspirations and Biopsies Per Year by Place of Service from 2010-2017



Average Submitted Charge for a Bone Marrow Aspiration/Biopsy in 2018



Conclusions/Further Study

Overall procedural demand for bone marrow aspirations and biopsies mildly decreased throughout the study period. Despite decreasing demand, Radiologists are performing an increasing number of BM aspirations and biopsies a trend similar to other common procedures such as paracentesis and lumbar puncture. Increasing demand on Radiologists to perform common procedures previously performed in larger volumes by internal medicine and its subspecialties has significant practice implications. APPs are becoming increasingly involved in common image guided procedures a trend likely to continue into the future. Radiologists currently have lower submitted charges than APPs and Hematologists/Oncologists for performing a bone marrow aspiration/biopsy.