Targeting Value-based Care with Physician-led Care Teams

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Over the past 15 years, in the face of physician shortages, especially in primary care, Hattiesburg Clinic made decisions to expand our care teams with the use of Advanced Practice Providers (APPs). In 2005, the number of employed Nurse Practitioners and Physician Assistants was 26; that total is now 118, and if you include other APPs such as Certified Registered Nurse Anesthetists and Optometrists, the total number of APPs practicing at Hattiesburg Clinic currently stands at 186. Focusing specifically on primary care, because our shortage of physicians there was so dire—due to retirements, massive panel sizes, and lack of medical students entering primary care residencies—we allowed APPs to function with separate primary care panels, side by side with their collaborating physicians. Although necessity initially drove our decision to allow APPs to function in the primary care provider (PCP) role, we felt comfortable with this decision over the following years as there was mounting evidence nationally that APPs could provide levels of care similar to that of physicians.

We now have the benefit of hindsight, and more importantly we have a wealth of internal data to examine these decisions from the past and to help steer us moving forward. With implementation of the Epic electronic medical record in 2011, we began capturing quality metrics and utilization information on our PCPs, both physicians and APPs. By becoming a Medicare Accountable Care Organization (ACO) in 2016, we added robust cost data to our warehouse of statistics on practice patterns of physicians and APPs. Furthermore, we were able to risk-adjust the cost and utilization data to account for patient complexity using Hierarchical Condition Category (HCC) codes and by quantifying a patient's number of chronic diseases using a "CCM Score." This Chronic Care Management (CCM) Score represents the number of chronic disease registries a patient is in, and it is a derivative of Medicare's Chronic Condition Data Warehouse. Adding to the catalog of information, we partnered with Press-Ganey to survey thousands of patients so we could adequately measure their experience with our physicians and APPs.

What we had hoped for in the primary care setting was that the APPs with their own panels in relationship with a collaborating physician would be able to do three main things while seeing less complex patients than their physician partners: First, provide similar quality of care; second, keep costs relatively stable; and finally, meet patients' expectations to where they were at least equally satisfied with their healthcare delivery. Unfortunately, after nearly 10 years of data collection on over 300 physicians and 150 APPs, with over 208,000 patient survey responses, along with cost data on over 33,000 unique Medicare beneficiaries, the results are consistent and clear: By allowing APPs to function with independent panels under physician supervision, we failed to meet our goals in the primary care setting of providing patients with an equivalent value-based experience.

We will review four sets of data that brought us to these disappointing and unexpected conclusions (Quality, Cost, Utilization, and Patient Experience).

Quality: Across the 10 quality measures for PCPs, data from 2017-2019 show that physicians performed better on 9 of the 10. Notably, there were double-digit differences in flu vaccination rates and pneumococcal vaccination rates. This was surprising, as these are typically considered "process" measures that can be adequately handled by nonphysician staff.

Cost: Using cost data from 2017-2019 among non-ESRD (End-Stage Renal Disease), non-nursing home Medicare ACO patients, spend was nearly $43 higher per member per month (PMPM) for patients with an APP PCP compared with that for those with a physician PCP. For an ACO the size of ours with over 20,000 patients, this cost differential could translate to an additional $10.3 M in spending per year across the attributed population. After risk-adjustment for patient complexity, that difference widened even further to over $119 PMPM of increased cost for patients with an APP as PCP when compared with patients with a physician PCP.

Utilization: Among the 20,000-plus patients in our Medicare ACO from 2017-2019 who were neither ESRD nor nursing home patients, those who had an APP as a PCP were 1.8% more likely to visit the ER than those who had a physician PCP. This was despite these being younger and healthier patients according to demographic data and risk scores. Most surprising though was that patients who had no PCP at all, although a lower risk group, were less likely to visit the ER than patients who had an APP as a PCP.

A second utilization metric we evaluated was the use of specialist referrals by PCPs. Based on feedback from our Medicare Advantage

Table 1. Quality Outcome Comparisons.

Row labels	Average of influenza vaccine	Average of PCV-13 & PSSV-23 for 65+ y/0	Average of breast cancer screen	Average of colon cancer screen	Average of Cervical Cancer screen	Average of HTN pts BP <140/90	Average of ASCVD pts LDL <100	Average of diabetes pts A1c < 8	Average of diabetes pts Foot exam	Average of diabetes pts eye exam
APP	46.75	69.90	73.67	66.62	62.00	70.03	55.48	74.29	79.67	54.95
Physician	56.66	79.25	78.39	73.86	62.43	69.10	59.92	76.37	81.29	61.98
Grand Total	**51.71**	**74.58**	**76.03**	**70.24**	**62.22**	**69.57**	**57.70**	**75.33**	**80.48**	**58.47**

PCV-13 & PSSV-23 (pneumococcal vaccines); hypertension (HTN); blood pressure (BP); atherosclerotic cardiovascular disease (ASCVD); low-density lipoprotein (LDL); glycosylated hemoglobin A1c (A1c).

Table 2. Cost of Care.

2017-2019	Non-ESRD, non-NH pts with PMPM data	PCP status		
		Null	HBC MD/DO	HBC APP
#patients	50,852	2668	40,642	3495
Avg age of all pts	72.1	70.1	72.6	70.7
HCC Score	1.0903	0.9391	1.0932	1.0673
PMPM (raw)	$765.56	$959.50	$708.93	$751.89
PMPM (Risk-adj, weighted)	$809.08	$1,360.02	$717.04	$836.92

Table 3. ER Utilization.

2017-2019	Non-ESRD, non-NH pts with PMPM data	PCP status		
		Null	HBC MD/DO	HBC APP
#patients	50,852	2668	40,642	3495
Avg age of all pts	72.1	70.1	72.6	70.7
HCC Score	1.0903	0.9391	1.0932	1.0673
ER visits	23,742	1266	18,671	1667
ER visits/pt	0.467	0.475	0.459	0.477

plan administrators and commercial ACO plan sponsors, we understand that on average, our patients have a higher Specialist-to-PCP visit ratio than national averages. When we dissected this concept more granularly in the Medicare ACO population, we found that APP PCPs had an 8% higher referral rate per disease to specialists than physician PCPs did. This is an especially interesting pattern because those APPs were working in collaborative relationships with supervising physicians; however, they still referred to specialists much more frequently than their collaborating physician did.

The referral patterns were also evaluated in specialty care as well. Examining patients with a Hattiesburg Clinic PCP, when these patients were seen in a specialty department by an APP as opposed to being seen by a physician, the patients were 7% more likely to be referred to another specialty area, essentially bypassing the patient's PCP.

Patient experience: Across 6 domains measured by Press-Ganey according to CMS CAHPS patient satisfaction questions, scores were relatively similar between physicians and APPs. Patients rated physicians higher in "Overall Rating of Provider," and physicians also had higher average scores across the 6 domains. The differences were more pronounced in specialty care versus primary care (not represented following).

Table 4. Specialty Referral.

Row Labels	Sum of visits in PCP's dept	Sum of visits in specialty dept	Sum of total patients	Average of Average CCM Score	Specialty: PCP visit ratio	(Specialty:PCP visit ratio)/Avg CCM Score
APP	44,583	48,767	10,311	2.503	1.0938	0.4371
Physician	280,970	333,484	54,785	3.329	1.1869	0.3565
Grand Total	**325,553**	**382,251**	**65,096**	**3.140**		

Table 5. Patient Experience.

Row Labels	Average of average score	Average of health promo and education	Average of provider communication	Average of rating of provider	Average of shared decision-making	Average of stewardship of patient resources	Average of timely care
APP	73.57	53.74	96.76	95.96	65.24	33.15	96.57
Physician	73.86	58.71	97.03	95.99	61.84	35.54	94.05
Grand Total	**73.77**	**57.14**	**96.95**	**95.98**	**62.91**	**34.78**	**94.84**

What is our plan to address these findings? We think it is important to point out that Hattiesburg Clinic believes very strongly that APPs are an invaluable part of the care team. In fact, when we examined data for patients who were "co-managed" in primary care, being defined as having alternating visits between physician and APP, those patients had the best quality and cost outcomes of all. Without APPs and their talents, many of the patients we have cared for during this journey would have possibly otherwise gone without good care, which would have been a travesty. Furthermore, our strategies moving forward, based on the data provided preceding and our research on how others across the country have tackled similar challenges, hinge upon hiring many more APPs. The difference now compared to where we were 15 years ago as we approach these decisions is that we are able to develop a plan in a more thoughtful, scientific method.

Turning our attention to the research that has been performed in this area, much work was done in the 2000s/2010s around the concept of trying to define appropriate panel sizes for primary care physicians. That research has led us to targeting a risk-adjusted panel size of 1,200-1,500 patients in a physician-led team-based model. In the fall of 2019, our Primary Care Quality Care Improvement Committee made a recommendation to our Board of Directors, which subsequently passed a policy that as of January 1, 2021, APPs will no longer be permitted to have panels of their own. Additionally, APPs who function in specialty areas may not see new patient consults except in emergency situations or when approved by a referring physician. The vision for primary care going forward with 1,200-1,500 patient equivalents continues to leverage off-loading of a significant portion of preventative care to Annual Wellness Visit nurses and a portion of disease management to Chronic Care Management nurses in the Medicare population as outlined in our article published in the *Journal of the Mississippi State Medical Association*'s population health edition in 2018. If desired, primary care physicians may increase their panel size by 500 patient-equivalents for each APP they add to their team, up to a total of two APPs per physician, with collaboration on all patients including alternating visits between the physician and APP. Using our current base of 110,000 patients, we have nearly 85,000 risk-adjusted adult lives under primary care management; this means that we would need to hire an additional 16 APPs just to handle these patients we are already managing assuming every physician carried a maximum panel size of 2,500 patients.

In summary, if not for the addition of over 100 nurse practitioners and physician assistants to Hattiesburg Clinic over the last 15 years, our organization could not have provided services to thousands of patients who might have otherwise gone without care. We believe very strongly that APPs are a crucial part of the care team; however, based on a wealth of information and experiences with them functioning in collaborative relationships with physicians, we believe very strongly that nurse practitioners and physician assistants should not function independently. Moving forward at Hattiesburg Clinic, with the benefit of data, we believe we are now able to refine our strategies for adding additional APPs to our physician-led care teams in an evidence-based, scientific process as we strive to continue to provide high-quality, low-cost health care with the highest patient satisfaction to those who put their trust in us to provide them with the best care possible. ■

As of February 2020, Hattiesburg Clinic had over 110,000 patients who called one of our physicians or APPs their PCP. The average panel size per full-time physician at that time was 1524 patients and 604 patients per APP, unadjusted for risk. Hattiesburg Clinic's Medicare ACO was ranked #1 in the country for quality in 2017 amongst 472 participants.

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