Expansion of Outpatient Parenteral Antibiotic Therapy Program with Addition of Advanced Practice Providers can Lead to Reduced Readmission Rates

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BACKGROUND

Advanced Practice Providers (APPs)

The addition of APPs such as Nurse Practitioners or Physician Assistants as hospital-based service providers has been shown to increase the coordination of care, provide for better continuity of care, facilitate interdisciplinary collaboration, and decrease length of stay.⁵

APPs were increasingly hired in the inpatient setting when resident work hours were reduced in 2011 (though this did not significantly impact Infectious Disease (ID) groups).

ID physician shortage

❖ Only 65% of available fellowships matched in 2016³
❖ Increase in worldwide need for infectious disease experts³

As health care systems attempt to not only increase access to care but also improve quality, the addition of APPs is becoming an option to meet division-specific goals.

Outpatient Parenteral Antibiotic Therapy (OPAT) Program

Initiated at University of Pittsburgh Medical Center (UPMC) in December 2013

❖ Pharmacist-led, multidisciplinary, team approach

Prior to program implementation there was a 32% readmission rate for patients on OPAT

❖ After implementation
  ● 2014 – 17.2%
  ● 2015 – 15.6%
  ● 2016 – 11.5%
  ● 2017 – 18.5%

PURPOSE AND AIMS

Purpose

To decrease readmissions and increase access to care for patients discharged on intravenous (IV) antibiotics and in the OPAT Program.

Aims

1. Increase number of providers by employing 2 APPs, in January and May of 2017.
2. Train APPs to deliver quality ID care in collaboration with current OPAT MDs
3. Compare rates of readmission and patient follow-up before and after expansion of the OPAT Program with APPs

METHODS

Training of APPs

During the first year of hire all APPs received ID specific training including a microbiology laboratory rotation, weekly and monthly topical lectures, antimicrobial stewardship training.

Data collection and evaluation

Retrospective study of all OPAT patients seen by any ID provider (MD or APP)

❖ January to May 2017 (pre-expansion)
❖ January to February 2018. (post-expansion)

Total number of patients seen for follow-up and the 30-day readmission rates were collected and evaluated.

❖ Comparison of proportions with two-tailed z-test

RESULTS

Decreased readmission rates and increased access to care after OPAT program expansion with APPs

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<thead>
<tr>
<th>Patients seen for follow-up (%)</th>
<th>2017</th>
<th>2018</th>
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<td>p=0.0051</td>
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<tr>
<th>30-day readmissions (%)</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td>p=0.046</td>
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❖ Comparison of proportions with two-tailed z-test

Following the expansion of the OPAT program with the addition of two APPs in 2017, there was a decrease, from 14.7% to 9.6%, in 30-day readmissions for all patients who were seen for follow-up (p = 0.0461, 95% CI 0.0672–0.9316).

The percentage of patients who were seen for follow-up increased after expansion of the program from 29.5% to 39.3% (p = 0.0051, 95% CI 2.8714–16.9153).

FUTURE DIRECTIONS

❖ Create Care Manager position
❖ Improve EHR documentation
❖ Improve provider communication
❖ Improve access to care
❖ Increase number of clinic visit slots per week
  ● 1 slot per APP, 1.5 slots per MD

CONCLUSION

Expansion of the OPAT program within the Division of Infectious Diseases at UPMC with the addition of two APPs has significantly increased access to care and significantly decreased 30-day readmissions when the patient was seen for follow-up by an ID provider (MD or APP).

References


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