Descriptive Analysis of Quality Outcomes for Primary Care Clinical Pharmacy Service (PCCPS) Interventions

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Background and Rationale

- A Quality Committee was formed within PCCPS to explore ways beyond drug cost avoidance to capture value associated with PCCPS daily interventions that included impact on quality based outcomes.
- Data in the literature on clinical event avoidance as a result of achieving pre-designated goals for blood pressure, LDL or anti-osteoporosis medication initiation in patients status post fracture were utilized to estimate morbidity and mortality benefits of PCCPS interventions.
- Event costs reported in the literature were used to estimate monetary return on investment of PCCPS interventions.

Study Purpose

To investigate alternative methods for capturing value of Primary Care Clinical Pharmacy Service (PCCPS) at Kaiser Permanente Colorado utilizing documented clinical outcomes in the literature and applying them to PCCPS specialists daily interventions.

Study Methods

Design:

- This is as observational, descriptive study.
- In 2010, patients impacted by PCCPS were identified from an internal database and were matched to pre-designated goals for each disease state; blood pressure <140/90, LDL decreased by 40 mg/dL, or initiation of an anti-osteoporotic drug.
- Utilizing available peer-reviewed literature and reported costs for cardiovascular procedures, heart attacks, strokes, and fractures prevented, the economic impact was calculated for patients that met the respective disease state metric. Mortality reduction was also analyzed for hypertension.

Patient Population:

- Inclusions:
  - Patients with documented interventions by PCCPS
  - Patients with hypertension, hyperlipidemia, or patients ≥ 65yo with a recent fracture in 2010

Study Procedures:

- Patients who had received PCCPS intervention in 2010 related to hypertension, hyperlipidemia or anti-osteoporosis medication initiation status-post fracture were identified via an internal database used to capture daily clinical interventions of PCCPS specialists.
- Pharmacy data analysts pulled patient specific clinical data for these patients from KPCO's electronic medical record.
- Costs from peer-reviewed literature for events avoided were applied to patients meeting the pre-designated goals for each disease state.
- Annualized return on investment (ROI) of PCCPS interventions, defined as economic impact of event avoidance minus significant treatment costs of intervention were calculated.

Results

Total PCCPS Interventions	Outcomes	Return on Investment
▪ A total of 3995 patients were identified for PCCPS HTN interventions. ▪ A total of 473 number of patients were identified for lipid interventions. ▪ A total of 492 number of patients were identified as starting osteoporosis medications.	▪ PCCPS interventions in HTN resulted in a 84% control rate. (Table 1) ▪ Lipid interventions resulted in 65 patients with LDL reductions of ≥40 mg/dL and 2 major cardiovascular events prevented. ▪ See Table 2 for osteoporosis outcomes.	▪ Annualized ROI of ~$919,000 for 2010 interventions related to HTN, lipids, and osteoporosis. ▪ HTN account for the majority of ROI and osteoporosis was about half that amount. ▪ Prevention of CV events secondary to lipid interventions resulted in ~$38,000 ROI.

Table 2: PCCPS Impact on Fracture Reduction and Costs in Post-Menopausal Women Following Fracture in 2010

Number of Fractures Avoided (n = 492)	
Number of hip fractures avoided	6
Number of vertebral fractures avoided	36
Number of non-vertebral fractures avoided	14
Costs Avoided (n = 492)	
Cost avoidance of hip fractures	$162,000
Cost avoidance of vertebral fractures	$43,000
Cost avoidance of non-vertebral fractures	$137,000
Total Cost Savings per year #	$288,000

Annualized as the cost avoidance minus cost of treatment

Table 1: PCCPS impact on death, strokes, and major cardiovascular events by improving hypertension control in 2010

Total number of interventions	3995
Number of patients with blood pressure <140/90#	3334
Deaths avoided per year	80
Strokes avoided per year	5
Major cardiovascular events avoided per year	125
Total Cost Savings per year##	$593,000

In collaboration with a multidisciplinary team, including nurses and providers
Annualized cost of strokes plus costs of major cardiovascular event based on internal cost information

Conclusion

- PCCPS interventions can have a favorable impact on quality parameters in hypertension, hyperlipidemia and osteoporosis.
- These interventions can have measurable impact on morbidity and mortality.
- Utilizing available literature and reported costs, the economic return on investment of PCCPS interventions related to these disease states can be calculated.

Disclosures

- Neither author has anything to disclose.

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