COMPLETED GRANT SYNOPSIS

Integrating Pharmacist Support for Thriving in Place Home Health Program

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Objectives

1) To support and improve thriving in place healthcare efforts by introducing and building pharmacist driven and supervised medication management and collaborative provider services.

2) To promote patient driven and centered methods for improving medication management, and have these methods honed and refined for application to future patients.

3) To successfully integrate pharmacist medication management efforts into the existing reimbursement structure to ensure sustainability of service provision.

4) To collaborate with area community pharmacies servicing study patients giving them clinical background, to achieve synergy in areas of MTM, coaching and adherence monitoring.

5) To formulate a successful model of service delivery by an independent pharmacist consultant in underserved community practices and pharmacies who cannot otherwise afford experienced clinical pharmacist support, thereby making a positive contribution to population health of areas with associated low health scores and/or lower quality provider practice scores at baseline.

Methods

Design	1. Collaborative Practice Agreement with an independent primary care practice, applied to opiate weaning, blood pressure, A1C, polypharmacy reduction; transfer of successful model to a second FQHC practice. Collaboration with local retail pharmacists for coaching and follow-up of difficult patient cases was inherent in the (newly regulated) collaborative practice agreement approved by the Boards of Pharmacy and Medicine. 2. Collaborative Public Health Events: Falls Prevention Week; Milo Health Fair, Medication Safety Event. (direction provided by Piscataquis Thriving in Place Collaborative). All except Falls Prevention Week were simple poster or short oral presentations promoting medication safety. During Falls Prevention Week, all eight pharmacies in the project catchment area allowed the project pharmacist and an accompanying pharmacy student to perform a medication fall risk assessment using the AHRQ (hospital) tool (1) during a two- or three-hour period in their shops. The event was advertised, and people brought their bag of medications or a list from the pharmacist to be assessed. The score and medications entailing fall risk was communicated by form letter for their next provider visit. High level issues were communicated to the pharmacist, who followed up immediately with the provider. A medication wallet-card was provided for each participating attendee, and they were also approached about whether they would like a follow-up telephone call at the end of the winter to see how they fared with respect to falls. 3. Professional Oral and Poster Presentations: Maine Society of Health System Pharmacists Annual Meeting oral CDTM presentation; Maine Quality Forum Annual Meetings poster and breakout session; APhA Annual Meeting, San Francisco, (Poster, Innovative Practices Session, Community Pharmacy Foundation Session; BMJ/IHI International Forum poster/short oral presentation/video, (London, England).

4. Pharmacy Student Preceptorship (University of New England College of Pharmacy): assisted with Falls Prevention Week medication screening and follow-up; collaborative practice agreement group teaching.
5. Miscellaneous individual health professional and provider consultations within catchment area: medication safety problem resolution for a care management organization.

Results

A) Outcome Evaluation:

i) At the outset of the grant, one calculation, i.e. valuation of preventable ADEs that would reasonably have entailed a hospital episode or ER visit was envisioned, and applied to Falls Prevention Week (2,3). On further examination, it was observed that all participants were 65 years or older, so the valuation of $1983 from Fields (4) was applicable for 84 of the 85 interventions, plus current Maine healthcare cost of one prevented hip fracture (5) and one prevented case of chronic kidney disease based on hazard ratios associated with proton pump inhibitors. (6,7,8) Also, due to legal limitations on reporting outcomes externally under collaborative practice agreement, and the unwillingness (with reason) of one community healthcare organization to divulge details where grant project efforts halted a number medication errors, a second literature valuation method was adopted, that being one discrete valuation per person for pharmaceutical care interventions provided by pharmacist (9). We also added a valuation for one unanticipated confirmed smoking cessation in a 59-year-old white male (10,11), and institutionalization costs to CMS avoided (12). This amounts to $280,890 for Fall Prevention Week + $219,851 for collaborative practice and the community organization + one smoking cessation valued at $250,390 + institutionalization avoidance for 3 persons x $1,704/month x 19 months to date = $32,376. Grand Total: $783,507, all adjusted healthcare inflation as of most recent valuation in 2015 recommended by the AHRQ (3), then adjusted from 2015 to 2017 using CPI (13). This is conservative at best, as cost estimates are not reckoning on the compound effect of preventable adverse drug effects on healthcare expenditure they tend to have. Additionally, dollars saved based on prevented institutionalization stopped being reckoned at project close, whereas in reality, all three patients were thriving well at home, and could continue to do so, thus increasing the value of the original pharmacist intervention with time.

ii) Return on investment: using the result determined above, a cost value was attributed, and compared with funds invested (grant amount/ reimbursement dollars/other source(s) of revenue) including additional time in kind and administrative expenses donated by Dragatsi & Co. for direct patient activity, $783,507/98,725 = **7.9 : 1.** (Based on grant dollars alone, **15.7 : 1**).

iii) **100% of study patients remained in their homes** over the course of one year after pharmacist intervention without becoming institutionalized (i.e. remained home based). One 84-year old patient had an uneventful elective procedure (diagnostic colonoscopy), and one patient had non-pain related ER visit in the opiate weaning group.

B) Process Evaluation: Project progress was monitored through quarterly reports to the Community Pharmacy Foundation. Although we were not able to test chronic disease management codes and reimbursement outcomes during the grant period due to a slower roll-out in the primary demonstration practice. This delay was caused by staffing rearrangement by external key trainers, who were responsible for practice transformation roll-out and timelines involving chronic care management reimbursement codes in Maine. Otherwise, all other timelines were met.

C) Other Outcomes:

i) Morphine Sulfate Equivalent (MSE) load was reduced by 43% in 30 patients in 6 months; in the 4 months following where pharmacist intervention was directed outside the clinic, 5 patients left the practice, overall MSE reduction in 25 patients was 39.3% after 10 months at project close.

ii) During Falls Prevention Week $280,890 worth of preventable adverse drug events was identified in 25 patients. Originally in October, $279,103 was reported based on Burton (2) valuation adjusted to 2015 CPI/GDP as previously discussed.

iii) Eight of eleven smokers initiated smoking cessation efforts in the new year (2017). One patient quit successfully by project end. This has been factored into the ROI.

iv) Falls Prevention Week: The number of falls was reduced from more than 40 (one patient estimated 20+ falls with injury in the previous year) to 2 falls post-intervention during the winter of 2016-2017. Most falls occurred during the winter months pre-intervention. Medications associated with fall risk using the AHRQ screening tool were discussed with the provider, discontinued, or changed. Pharmacists, patients, and providers were educated on appropriate use of calcium supplementation, the importance of magnesium status/diuretics/proton pump inhibitor weaning when used inappropriately or without supplementation (most reliable method, Epsom salts baths).

v) Three patients of the 93 intervened upon during the demonstration project avoided imminent long-term institutionalization due to pharmacist medication-related recommendations. This has been factored into the ROI.

vi) Favorable results occurred involving blood pressure, AIC and polypharmacy reduction. Under Maine collaborative practice agreement regulations, the degree of improvement cannot be shared outside the practice, except in compliance with MACRA by the practice.

Conclusion

Multi-modal integration of a consultant pharmacist into underserved ambulatory care can extend provider and pharmacist capabilities, improve healthcare delivery and patient outcomes, reduce and avoid unnecessary cost and promote provider status.