

Baseline Description of Seven Pharmacies Involved in An Evaluation of a New Practice Model

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Background

- Significant changes in pharmacy practice have occurred in Iowa
 - Mandatory technician certification since 2010
 - Advancement to all PharmD programs in the Colleges of Pharmacy
- Efforts are underway to more accurately describe the capabilities and role of the community pharmacist
- Pharmacists can improve patients' clinical and financial outcomes of medication therapy
- The current practice model poses several barriers to pharmacists' ability to provide Medication Therapy Management (MTM) services
- According to the 2013 MTM Digest, the top three barriers to MTM services are:
 - Lack of insurance companies paying for MTM services
 - Pharmacists have inadequate time
 - Payment for MTM services is too low
- A recent study performed by Kjos and Andreski found that in Iowa the most frequent barriers to MTM services were:
 - Lack of availability of pharmacists' time
 - Insufficient staffing levels
 - High levels of dispensing activities
- In light of these advancements and challenges, there is a need and opportunity to redefine the practice of community pharmacy
- In 2010, The New Practice Model Task Force (NPMTF) was established to coordinate efforts in Iowa

Objective

- The object of this study was to describe characteristics of seven Midwestern retail pharmacies before implementation of a new practice model.
- These baseline characteristics will be used to evaluate the impact of a Tech-Check-Tech (TCT) program on
 - Patient safety measures
 - Facilitating the provision of pharmacist-provided MTM
 - Workplace satisfaction for pharmacy technicians and pharmacists

Methods

- Seven community pharmacies in Iowa were recruited to participate in a demonstration project approved by the state board of pharmacy
- Pharmacies that were involved in the state association and had shown an interest in practice improvement were recruited
 - Pharmacies were required to be providing or prepared to provide patient care services
- Before baseline measurements were allowed:
 - Pharmacies were required to sign a letter of commitment to provide resources and training for their staff
 - Technicians were required to complete advanced training on prescription dispensing and verification
 - Pharmacists were required to complete training on tech-check-tech process and implementation
- Dispensing errors were determined for 50 refills per day for 15 weekdays for refilled prescriptions
 - Errors were further defined and categorized by the NPMTF as potential patient safety errors and administrative errors
- Baseline measurements were performed to define the task composition of the pharmacists' workday
 - Pharmacists submitted self-reported time spent in five categories of activities
- The amount of pharmacist provided MTM services were also collected
 - Self-reported services in thirteen categories
 - The reimbursement status of each service
- Pharmacies manually recorded information which was then submitted via an online survey
- Pharmacy workplace satisfaction was measured with previously validated measures by an online survey
 - Comparisons were made between technicians and pharmacists using t-tests

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Results

Table 1- Pharmacy Demographics

Characteristic	
Prescriptions Filled	40,299 (±20,414)
Ownership	Small Chain = 6 Independent = 1
Location	Urban = 5 Rural = 2

Table 2- Dispensing Errors

Error Type	Mean (±SD)	Range
Wrong Drug	0.14 (0.38)	0 - 1
Wrong Strength	0.00	0
Safety Cap	1.14 (1.68)	0 - 4
Wrong Amount	0.29 (0.76)	0 - 2
Other Errors	0.57 (1.13)	0 - 3
Total Errors	2.14 (1.86)	0 - 5
Potential Patient Safety Error Rate	0.022% (0.054%)	0 - 0.13%
Administrative Error Rate	0.207% (0.235%)	0 - 0.59%
Total Error Rate	0.229% (0.229%)	0 - 0.59%

Total Prescriptions Checked = 4,813
Combined Error Rate = 0.311%

Table 3- Pharmacist Workday Composition

Activity (% of Work Day)	Mean (±SD)	Range
Dispensing	67.30% (13.48%)	38.73% - 80.81%
Management	9.19% (2.29%)	5.81% - 12.79%
Patient Care	15.96% (3.11%)	11.03% - 19.39%
Practice Development	3.46% (5.05%)	0.25% - 14.43%
Other	4.10% (5.70%)	0% - 14.66%

Table 4- Patient Care Activities

Services (per Pharmacist Hour)	Mean (±SD)	Range
Reimbursed	0.2804 (0.5514)	0 - 1.51
Non-Reimbursed	9.5914 (12.0500)	0.13 - 33.43
Total	9.8719 (12.5195)	0.14 - 34.94

Table 5- Workplace Satisfaction

Index (Possible Score)	Overall Mean (±SD)	Pharmacists Mean (±SD)	Technicians Mean (±SD)
Job Satisfaction (30)	24.22 (3.637)	24.29 (3.158)	24.15 (4.082)
Role Overload (28)	17.89 (4.618)	17.88 (4.936)	17.90 (4.456)
Role Ambiguity (21)	18.35 (2.574)	18.59 (2.063)	18.15 (2.978)
Role Conflict (21)	12.68 (5.603)	14.35 (5.147)	11.25 (5.702)
Stress (75)	47.51 (9.176)	47.94 (8.295)	47.15 (10.064)
Profession Choice (50)	47.51 (9.176)	39.71 (5.687)	37.35 (8.468)

N=37 Technicians=20 Pharmacists=17

Discussion

- The rate of dispensing errors was very small (0.23%)
- Findings supported previously reported barriers to providing patient care
 - A majority of the pharmacist's time (67.4%) was spent in dispensing activities
 - A very small portion (2.84%) of pharmacist services were reimbursable
- No differences were found between technicians and pharmacists on 6 measures of workplace satisfaction
- These same measures will be recorded during the 18 month TCT pilot and compared to this baseline

Limitations

- Inability to compare error rates due to lack of other published data
- Self-reporting of workday composition may lead to social desirability bias

References

American Pharmacists Association. Medication Therapy Management Digest: Pharmacists Emerging as Interdisciplinary Health Care Team Members. Washington, DC: American Pharmacists Association; March 2013.

Morrell T, Schmitz N, Andreski M, Kjos A, Gainer K, Embracing Challenges in a Complex Environment: A Study of Pharmacists' Workload Dynamics and Provision of MTM. Presented at the 159th Annual Meeting of the American Pharmacists Association, New Orleans, LA, March 11, 2012.