

2011

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Recommended Citation

Witry MJ, Chang EH, Mormann MM, Doucette WR, Newland BA. Older Adult Perceptions of a Self-reported Medication Risk Questionnaire: A Focus Group Study. *Inov Pharm*. 2011;2(3): Article 50. <http://pubs.lib.umn.edu/innovations/vol2/iss3/4>

INNOVATIONS in pharmacy is published by the University of Minnesota Libraries Publishing.

Older adult perceptions of a self-reported medication risk questionnaire: A focus group study.

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This study was supported by a federal grant (R18HS18353-01) to evaluate quality improvements to a MTM program administered by a Medicare Part D insurance plan. MJW was supported by a fellowship from the American Foundation for Pharmaceutical Education during this study.

Disclosure: MW, EC, MM, and WD declare no conflicts of interest or financial interests for themselves or members of their immediate regarding any product or service discussed in the manuscript, including grants - pending or received -, employment, gifts, stock holdings or options, honoraria, consultancies, expert testimony, patents, and royalties. BN is Vice-president, Outcomes Pharmaceutical Health Care, from which the study questionnaire originated and where it is used for beneficiaries.

Previously presented as a podium at the Annual Meeting of the American Pharmacists Association. March 28, 2011. Seattle, Washington.

Keywords: Medication risk, self-administered questionnaire, screening tool, medication-related problem

Abstract

Background: Medication therapy management (MTM) has been shown to resolve medication-related problems and decrease health care expenses. Public and private health insurers, providers, and other stakeholders are looking for ways to involve patients in the MTM process. One option is to engage patients through the use of a medication risk questionnaire. **Objective:** To investigate older adults' perceptions of completing a medication risk questionnaire and receiving a rating of their risk for medication-related problems. **Methods:** Four, 75 to 90 minute focus groups were conducted using a semi-structured interview guide and copies of a medication risk questionnaire to collect qualitative data from 36 community dwelling older adults in Iowa, USA. Sessions were audio-recorded, transcribed, and analyzed thematically using an iterative process. **Results:** The thematic analysis yielded a general theme of comprehensive medication reviews, and two themes on the medication risk questionnaire: "process and items" and "risk category reactions." Overall, participants were unfamiliar with pharmacist services beyond counseling. They were open to the questionnaire, but suggested it would be more useful as a topic for discussion with a provider than to screen patients. Despite their medication risk rating, most did not express interest in seeking a comprehensive medication review based on the result of the questionnaire as they considered themselves at low risk for problems. **Conclusions:** Using a medication risk questionnaire as a topic for discussion could provide health insurance plans or providers an opportunity to increase beneficiary familiarity with MTM. These beneficiary perspectives may be useful to health plan administrators and MTM providers as they pursue new ways to involve patients in the medication management process.

Introduction

Medication-related problems result in significant morbidity and expense.¹⁻⁵ Research shows medication therapy management (MTM) and other pharmacist-provided interactive services are effective for improving outcomes related to these problems.^{2,6-9} The U.S. Centers for Medicare and Medicaid Services (CMS) mandate Medicare Part D plans

offer MTM to targeted beneficiaries using three claims-based eligibility criteria: number of medications, number of chronic conditions, and medication expenditures.¹⁰

While utilizing claims to determine eligibility is efficient, patients who could benefit from the service may be omitted given the established criteria. Furthermore, it circumvents patients and their ability to provide information useful for MTM targeting. Persons can report factors besides the three mandatory eligibility criteria that are associated with medication-related problems. For instance, use of over-the-counter or herbal medications can lead to potential drug interactions; or non-adherence can lead to sub-optimal outcomes.¹¹⁻¹⁴

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In addition, engaging patients in MTM targeting may increase their awareness of MTM services and expose them to the potential value of MTM. This especially is relevant for interactive, person-to-person consultations such as comprehensive medication reviews (CMRs). Part D plans are required to make annual CMRs available to targeted beneficiaries¹⁵, but beneficiary participation is optional and often must be sought out. Utilization of CMRs has been relatively low^{16,17} and authors suggest this may be due to persons not perceiving added value in these pharmacist consultations, not viewing CMR provision as a role for pharmacists, or simply lacking awareness of this Part D benefit.¹⁸⁻²¹

Pursuing alternative strategies for identifying persons who could benefit from MTM services could help increase participation.¹⁶ One MTM service administrator has attempted to engage beneficiaries in the MTM targeting process through an online medication risk questionnaire. The questionnaire (a similar version is included in Appendix A), asks patients to self-report the presence of risk factors shown in the literature to be associated with medication-related problems.^{11-14,23-41} These include multiple disease states, increasing age, living alone, higher number of medications, use of OTCs, use of multiple prescribers and pharmacies, recent hospitalization, and unintentional and intentional non-adherence. Summing the number of "yes" answers on the questionnaire provides the beneficiary with a low, medium, or high risk level for medication-related problems, and a corresponding recommendation of their need for MTM services.

This questionnaire follows a research lineage initiated by Kocheller et al.⁴² In their study, six prognostic indicators were developed by an expert panel to screen ambulatory patients and identify those that may benefit from pharmacist monitoring. Later, Levy added four questions to create a 10-item, *self-administered* questionnaire designed to identify patients at risk for having medication-related problems.⁴³ Here, more "yes" answers on the questionnaire was associated with more medication-related problems, although the association with five of the items was not statistically significant. Most recently, Langford et al. implemented a self-administered questionnaire using the five significant items from Levy's study in a family health center.⁴⁴ Patients were divided into two groups. In one group patients were automatically referred to see a pharmacist if they self-reported "yes" to at least three of the questionnaire items. Patients in the other group were referred using traditional means (e.g. physician referral). This study showed automatic referral increased the proportion of patients meeting with a pharmacist.

These studies begin to support the ability of a medication risk questionnaire to identify patients who may benefit from MTM and increase MTM utilization. However, little about such questionnaires has been explored from the patient's perspective - particularly among older adults eligible for MTM through Medicare Part D. While several published studies have reported older adult perceptions of MTM services such as CMRs since the advent of Medicare Part D,^{18-21,45} research is needed to investigate means to increase patient demand, improve MTM targeting, and increase patient engagement in these processes.

Objectives

The objectives of this study were to investigate older adult perspectives on completing a medication risk questionnaire and on receiving a rating of their risk for medication-related problems in the context of being targeted for a comprehensive medication review.

Methods

This study used focus groups as the method of qualitative data collection due to the flexibility and efficiency in capturing responses to questions posed by the moderator in addition to discussions between participants.⁴⁶⁻⁴⁸

Four 75-90 minute focus groups were conducted in English at a public library in a private meeting space during the summer of 2010. Participants also completed an exit demographics survey which included age, gender, ethnicity, Medicare Part D prescription coverage, health status, education, and if in the past year they had talked to their doctor or pharmacist about a medication side effect or other problem. This study was approved by the Institutional Review Board at the University of Iowa.

Participants were recruited using a registry of older adults maintained by the University of Iowa College of Public Health for research on aging. One-hundred registry members randomly were selected from a total of 450 persons 65 years or older, having at least one medical condition, and living in the local area. Letters were mailed by the registry to inform these persons of the study details. Thirty-six agreed to participate and attended one of the four sessions. A \$20 gift card was offered to each attendee for participating.

The questions asked in the focus groups (Appendix B) were developed by the research team. The questions were designed to be open-ended and neutrally worded. A pretest was conducted to evaluate and improve the flow of the interview guide. Additionally, after each focus group, minor modifications were made to the interview guide to improve clarity or direction.

Focus groups primarily were moderated by MW with occasional group prompts by WD. Each session began with approximately seven questions about CMRs to provide context for the questionnaire followed by 10-15 questions relating to the questionnaire and related processes. CMRs were described to participants as a 20-30 minute, private, scheduled, sit-down service, often provided by a pharmacist. During a CMR a pharmacist and patient would discuss the patient's medications and the pharmacist would identify problems or potential problems and work with the patient and the physician to make any changes. The CMR questions were intended to get participants thinking and talking about pharmacist-provided services.

Focus group participants had the opportunity to complete the medication risk questionnaire (Appendix A) during the session (used with permission from the MTM plan administrator). Questionnaires were scored using the weights suggested by the MTM plan administrator and risk scores were provided to the participants. Most items were valued at 1-point except items 11-15 which were assigned 2-points. A score of 0-10 placed a respondent in the low category, 11-20 in the moderate category, and greater than 20 in the high category. To make participants more comfortable with sharing their thoughts about the questionnaire they were told either actual or made-up responses to the items could be used and that their questionnaire responses would not be analyzed.

Focus groups were audio-recorded, transcribed verbatim by MW, EC, and MM, and entered into Microsoft Excel. Transcripts and written notes from the focus groups were analyzed by MW, EC, and MM using an inductive approach of thematic analysis.⁴⁶ First, the coders familiarized themselves with the transcripts and met to generate initial codes. During this discussion the research team decided to separate quotes into two groups – those pertaining to CMRs and those pertaining to the medication-risk questionnaire. For the first transcript, each coder independently assigned codes to each statement to describe the nature of the statement. After individually coding this transcript, the coders met to discuss each statement and reach a consensus on the codes applied to each statement. This process resulted in a final list of codes which were used to code the remaining three transcripts. Each researcher coded one of the three remaining transcripts and the codes were reviewed by the other coders. Discrepancies were resolved using a consensus method. The codes were then collated into potential themes and reviewed by the research team. Researchers reviewed the codes, themes, and field notes to produce a description of the focus group findings. The description used representative quotes and summaries to highlight frequently voiced sentiments, unique or compelling ideas, and areas where participants

appeared to have mixed or opposing viewpoints, in order to systematically portray the range of content of the four focus groups.

Our initial anticipated findings were that participants would have heightened awareness of their risk for medication-related problems after completing the questionnaire. This would result in an increased perception of the value for meeting with a pharmacist in an MTM visit and an increased desire to participate in a MTM program through their prescription drug benefit.

Each member of the research team was a pharmacist or student pharmacist at the time of the study. Although participants were told pharmacists were only one possible provider of MTM and CMRs, the researchers tended to refer to pharmacists as the default provider to add focus to the discussion. BN had a very limited role in the study analysis due to his potential stake in the research findings.

Results

All but one participant completed a demographic questionnaire at the end of their focus group. The mean age for these participants was 74, 17 (49%) were female, all were Caucasian, 25 (71%) had completed a college degree and 23 (66%) reported having Medicare Part D. The average number of prescription medications reported for this group was 3.4 (range 0 to 11), all reported their health as being good, very good, or excellent, and 16 (46%) reported having discussed a side effect, unwanted reaction, or other medication-related problem with their physician.

Three main themes emerged from the focus groups (Table 1): comprehensive medication reviews, medication risk questionnaire process and items, and medication risk questionnaire risk category reactions.

Table 1: Main themes and findings

COMPREHENSIVE MEDICATION REVIEWS
1. Questioned the need for CMRs
2. Preference for usual pharmacist, face-to-face
MEDICATION RISK QUESTIONNAIRE PROCESS AND ITEMS
1. Questioned the usefulness of the questionnaire to screen patients
2. The questionnaire should be the start of a discussion.
3. Preferred mail over telephone for questionnaire administration
4. Add poor eyesight and avoid the term "confused" for items
MEDICATION RISK QUESTIONNAIRE RISK CATEGORY REACTION
1. Did not believe they should be in their given category
2. Wanted more information and to discuss decreasing risk factors
3. Aversion to risk language
4. Medication risk was an abstract concept
5. Low urgency for getting CMR given their risk category
6. More likely to act following a personal discussion

Comprehensive Medication Reviews

MIXED VIEWS ON THE NEED FOR CMRS

Most participants were not familiar with CMRs as a Part D benefit or with pharmacists providing these types of services. Participants had mixed views on who might benefit and if a special service was needed in addition to counseling. In general, participants tended to prefer local interactions with providers with whom they have an existing relationship.

After being provided with a definition of a CMR, participants had mixed views on who would be a good candidate. Some believed everyone could benefit from this service whereas others thought persons taking numerous medications, those who have trouble managing their medications, or those who experience unwanted side effects of their medications would derive benefit.

"Anyone who is taking more than four medications certainly should have them reviewed. Whether those of us who have less have to have it done every year is another question."

An alternative view was CMRs would not be beneficial because the counseling they receive from their pharmacist is adequate.

"This would be a waste of time for me personally. Whenever I have a new medication the pharmacist talks to me. I don't have to make an appointment. He doesn't give me the medication until he's sure I understand what it's for."

Several were concerned about pharmacists proposing changes to their medication regimens and wanted to make sure the doctor would be the person making changes.

"I kind of like the doctor deciding what medications that I would want to be on."

PREFERENCE FOR USUAL PHARMACIST, FACE-TO-FACE

When asked if they would be willing to see a pharmacist other than their usual one for a CMR, there was strong preference among participants to see their own pharmacist with whom they have a relationship.

"They don't know you. They don't know what you're taking, why you're taking it, where your pharmacist does. It's kind of like your insurance, getting the things through the insurance and then they decide you don't need this. Well you know they live out of their offices in Timbuktu and they've never met you and don't know anything about you. You just feel like they've never met you and don't know anything about you."

Participants also said they would be much more willing to participate if the CMR was face-to-face rather than over the telephone.

"I would be a lot more comfortable (Many voices: Yeah, I would too). Face-to-face is much better, and if it's someone you trust like your pharmacist, then it would be really good."

Overall, participants seemed most interested in pharmacists addressing medication interactions, use of herbal and over-the-counter medications, and monitoring medication side effects during a CMR.

Medication Risk Questionnaire Process and Items

QUESTIONED THE USEFULNESS OF THE QUESTIONNAIRE TO SCREEN PATIENTS

Participants had mixed views on the utility of using this questionnaire to identify patients who could benefit from a CMR. Some expressed pharmacists should simply be able to offer the service to patients who could benefit, making the questionnaire unnecessary.

“Why can’t you just talk to your pharmacist and say, these are the drugs... I’ve never done it, but I don’t think they’d turn me away if I said I’m taking all these drugs, can you tell me a little about them?”

Several perceived the questionnaire as a potential information source for providers rather than a screening tool for the insurer.

“Filling out a form is okay, but if you know it’s going to your doctor or pharmacist... if you’re doing it for a purpose.”

THE QUESTIONNAIRE SHOULD BE THE START OF A DISCUSSION

Participants had mixed views on how the questionnaire should be administered. Participants agreed that ideally the questionnaire would be administered in the patient’s usual pharmacy or at their physician’s office. This would allow for immediate feedback and the questionnaire could serve as a tool for discussion and education.

“I think it’s real good to have someone look at your medications and tell you what they think of, or any red-flags that go up. But rather than being called, if someone at the drug store would just ask when I am there if I would like this service, I think that would be better.”

PREFERRED MAIL OVER TELEPHONE FOR QUESTIONNAIRE ADMINISTRATION

Most were wary of being called at home to complete the questionnaire. First, many reported not answering calls from an unknown number. Second, several wanted more time to think about their answers than telephone would allow and were concerned about the fidelity of how their answers would be recorded.

“I prefer mail because then you get to think about it a little longer.”

“I would rather fill it out myself than to give it to somebody else and trust that they wrote the same thing down that I said, because that’s a source of error.”

ADD POOR EYESIGHT AND AVOID THE TERM “CONFUSED” FOR ITEMS

Participants had several recommendations for additions, modifications, and clarifications to the questionnaire items (Appendix 1). Notably, several participants suggested “poor eyesight” would be important to add as a condition as patients with low vision might be at risk for taking the wrong medication doses (e.g. warfarin). Participants across focus groups also reacted strongly to question 11 which asked if they ever get confused about having taken a dose of a

medication. The general consensus was “forget” would be more appropriate than “confused.”

“I don’t get confused, I just get busy and I forget.”

Medication Risk Questionnaire Risk Category Reactions

DID NOT BELIEVE THEY SHOULD BE IN THEIR GIVEN CATEGORY

Many were surprised by the risk category they received after filling out the questionnaire and questioned its validity. Some questionnaire items were not seen as risk factors by some members of the group.

“I was a little surprised... though I have multiple doctors and multiple medications, I really felt confident in the doctors who I have... I didn’t know what the categories are, but I expected I’d be in low.”

WANTED MORE INFORMATION AND TO DISCUSS DECREASING RISK FACTORS

Some participants desired to learn more about the responses which led them to be in their risk category.

“I need to see what I’m doing wrong.”

“If a person tells me I am a bad golfer, that doesn’t tell me much. But if they tell me my swing is bad, my stance am I using the wrong club...”

Participants were particularly interested in learning about modifiable risk factors. Some suggested the questionnaire administration could be “more of an educational process” where the items could lead to a discussion with a doctor or other health care professionals.

“I think particularly for the questions here, these are the ones that could really lead to a discussion with a doctor, or whoever would want to know if you were on or would take vitamins, herbals, medicines, things like that... I think that’s crucial and an important part of this whole discussion.”

AVERSION TO RISK LANGUAGE

Furthermore, some of the participants expressed discomfort with the terms “risk” and “risk factors.”

“[Risk factor] in my mind is a red flag. And rather than have a red flag come up, I would rather that it be a white flag, a nice neutral word like ‘predictor’ is not I have it, but it might predict something.”

MEDICATION RISK WAS AN ABSTRACT CONCEPT

Despite completing the 15-item questionnaire minutes earlier and being told the questionnaire consisted of questions

shown to be related to medication problems, many were unable to connect how their responses contributed to their risk category.

“What are the risk factors? I’m interested in that. Everyone talks about risk factors, low number, multiple, high...”

The concept of an overall risk index may have been too abstract for many participants to comprehend and comment on in depth. One suggestion from the respondents was to eliminate the ‘low, moderate, high’ descriptions.

“Maybe you don’t need this score, maybe when they get something they just get one line that says based on your questionnaire we think you could learn a lot from a conference. Or say from your questionnaire it doesn’t appear that the conference is going to be much benefit to you. Instead of saying something like low, moderate or high. Just give them one response, based on your questionnaire it looks like...”

Some suggested the rating and recommendation part of the questionnaire should focus more on the benefit of MTM for the person completing the questionnaire.

“I think phrasing it in terms of why. You need to sell this person on it. It’s good for you – not just you are a good candidate... we get that from Publishers Clearinghouse®.”

LOW URGENCY FOR GETTING A CMR AFTER GETTING THEIR RATING

When asked who they would talk to after receiving their risk category, the participants mentioned their physicians and pharmacists. However, trust in a provider also appeared for some to lead to inaction.

“I guess I might ask the pharmacist... They’ve always been very helpful and informative, so I just have a feeling of trust that I probably wouldn’t do anything... or at least would just mention it and see what the response would be.”

Overall there was little urgency among the groups.

“I would probably simply wait until the next time I was at the pharmacy and talk to them then and set something up. I don’t think I would make any special effort. I suppose if I was in high I would make a special effort. I would follow up but not make a big deal out of it.”

MORE LIKELY TO ACT FOLLOWING A PERSONAL DISCUSSION

Some participants doubted they would act on a recommendation made by a questionnaire from someone at the insurance company, whereas they might be more inclined to act on a recommendation from one of their providers.

“The pharmacist ought to be able to say you’ve got enough medications here that you’d benefit from it... My pharmacist said that? I’ll do it. If my doctor said that... But other than that, this isn’t gonna send me to that program now.”

Discussion

This study investigates the use of a medication risk questionnaire in the MTM targeting process. Previous research suggests a self-administered medication risk questionnaire could be useful for screening patients at risk for medication-related problems who may benefit from meeting with a pharmacist.⁴⁴ Findings from the present study suggest an additional role for a self-reported questionnaire could be to engage patients in the MTM targeting process.

COMPREHENSIVE MEDICATION REVIEWS

Each focus group began with an introductory discussion of comprehensive medication reviews (CMRs) to provide context for the questionnaire. In general, participant perspectives on CMRs corroborate previous authors’ findings that patients are relatively uninformed about MTM services such as CMRs and their provision by pharmacists.^{20,49,50} In addition, they did not perceive differences between the prescription counseling they receive at their local pharmacy and the CMR service described by the focus group moderator. The authors of this study join others in identifying a need for payers and providers to bolster MTM marketing to increase public awareness of MTM services such as CMRs.^{18-20,49} Engaging beneficiaries in MTM targeting may provide an additional opportunity to inform them about the purposes, benefits, and processes of MTM; especially in relation to patient-specific factors that influence the extent to which a patient may benefit from MTM. This study suggests such engagement could occur following administration of a medication risk questionnaire at the patient’s usual pharmacy.

MEDICATION RISK QUESTIONNAIRE PROCESS

Several issues emerged from the thematic analysis related to the medication risk questionnaire process. First, focus group participants did not find connecting their self-reported risk factors, their rating, and their recommendation to be intuitive. Participants may have needed more information throughout the process to understand the connection between the risk factors and medication-related problems.

This finding goes against our original notion that the questionnaire alone would help patients see that MTM could be beneficial based on their personal situation. Learning about risk factors could help beneficiaries make more informed decisions about how actively they want to participate in their plan's MTM program. For example, a pharmacist could discuss the risks of taking non-prescription medications in the presence of prescription medications and how she could help check for interactions. Providing details about risk factors and engaging in a discussion with a health professional about MTM could be desirable for patients who display a desire for more information.

RISK PERCEPTION AND THE PHARMACIST

Participants seemed to recognize the potential for MTM to benefit others; however, they perceived low personal risk. Part of this sentiment could be explained the general good health of the participants. This sentiment also is supported by the participants who expressed high levels of confidence in the care provided by their physicians and pharmacists and hence, did not perceive a need to add MTM services. A medication risk questionnaire could be useful in helping patients identify a need for a CMR even though they may feel healthy. Pharmacists may consider using the technique of personal selling (e.g. asking probing questions and presenting benefits) and the strategy of motivational interviewing (e.g. expressing empathy and developing discrepancy) in addition to the questionnaire to increase awareness of MTM and demonstrate how it may be of value to the patient.^{51,52}

Participants were averse to the focus of the questionnaire feedback centering on risk factors. Instead, some suggested focusing on the benefits of MTM services rather than using an overall risk rating. This finding partially may be due to the social undesirability of having risk factors as evident by several participants regarding the questionnaire results as inaccurate. Nevertheless, focusing on benefits could be important since participants initially had a difficult time envisioning how MTM services were different than the counseling already received at the point of dispensing. Informing patients about specific benefits may increase their interest in pursuing MTM services.

PHARMACIST-PATIENT RELATIONSHIP

Consistent with previous research, a few participants were wary of pharmacists instead of physicians making recommendations for medication regimen changes.²¹ While there was uncertainty of pharmacists in this advanced role, participants expressed significant satisfaction and trust with their pharmacist in more traditional roles. Pharmacists hoping to expand services could capitalize on the relationships and

trust with their patients and personally offer MTM services to eligible beneficiaries.⁵¹

Participants favored face-to-face interactions for MTM services and questionnaire administration. This is consistent with the positions of several pharmacy professional organizations.¹⁶ Our participants mostly viewed telephone MTM services as acceptable only when other alternatives were not available, for example, participants utilizing mail-order pharmacy. The focus group participants, however, may not be representative of all patients, as the characteristics making them comfortable enough to sign up for focus groups may be similar to those driving their desire for face-to-face interactions with health care providers. Therefore, further investigation of MTM and CMR delivery is warranted, especially as others have reported high satisfaction with telephone MTM services.⁴⁵

Overall, participants in these focus groups were more interested in the questionnaire as a topic for discussion with a health care provider than as a screening or eligibility tool. Thus, it appears that completing such a questionnaire and discussing the results with their physician or pharmacist would support engaging patients in the MTM targeting process.

Limitations

The older adults in these focus groups were well-educated, in good health, and lived in one Midwestern city in the USA. Future studies should target persons with poorer health, lower income and education, and minority status as these groups are likely to have different perspectives, especially considering they likely have a greater need for medication management. Also, participants were aware the investigators were from a college of pharmacy. While this may have altered expressions from some participants, most appeared forthcoming with positive and negative opinions of community pharmacists.

Conclusion

This study describes qualitative findings from four focus groups of older adults regarding a medication risk questionnaire. Most participants expressed little urgency for pursuing a CMR after receiving their questionnaire results. This may be due to participant aversion to the risk-centered focus of the questionnaire and to their perception of low personal risk for medication-related problems. Participants were, however, interested in discussing the questionnaire with their physician or pharmacist. This may be an opportunity to discuss the potential benefits of MTM with patients who are unfamiliar with the service. The approach of engaging beneficiaries in MTM services through a medication

risk questionnaire warrants further investigation. This study can be useful to MTM plan administrators and MTM providers as they pursue new ways to engage patients in MTM services.

References

1. Chrischilles EA, Segar ET, Wallace RB. Self-reported adverse drug reactions and related resource use. A study of community-dwelling persons 65 years of age and older. *Ann Intern Med.* 1992;117:634-40.
2. Hanlon JT, Weinberger M, Samsa GP, et al. A randomized, controlled trial of a clinical pharmacist intervention to improve inappropriate prescribing in elderly outpatients with polypharmacy. *Am J Med.* 1996;100:428-37.
3. Laroche ML, Charmes JP, Nouaille Y, Picard N, Merle L. Is inappropriate medication use a major cause of adverse drug reactions in the elderly? *Br J Clin Pharmacol.* 2007;63:177-86.
4. Gurwitz JH, Field TS, Harrold L, et al. Incidence and preventability of adverse drug events among older persons in the ambulatory setting. *JAMA.* 2003;289:1107-16.
5. Johnson JA, Bootman JL. Drug-related morbidity and mortality. A cost of illness model. *Arch Intern Med.* 1995;155:1949-56.
6. Chrischilles EA, Carter BL, Lund BC, et al. Evaluation of the Iowa Medicaid Pharmaceutical Case Management program. *J Am Pharm Assoc.* 2004;44:337-49.
7. Tsuyuki RT, Johnson JA, teo KK, et al. A randomized trial of the effect of community pharmacist intervention on cholesterol risk management. *Arch Intern Med.* 2002;162:1149-55.
8. Cranor CW, Christensen DB. The Asheville Project: Short-term outcomes of a community pharmacy diabetes care program. *J Am Pharm Assoc.* 2003;43:149-59.
9. Nkansha N, Mostovetsky O, Yu C, et al. Effect of outpatient pharmacists' non-dispensing roles on patient outcomes and prescribing patterns. *Cochrane Database Syst Rev.* 2010;(7):CD000336.
10. Centers for Medicare and Medicaid Services. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003. <http://www.cms.gov/MMAUpdate/downloads/PL108-173summary.pdf> (accessed 2011 June 13).
11. Clifford S, Barber N, Horne R. Understanding different beliefs held by adheres, unintentional nonadherers, and intentional nonadherers: Application of the necessity-concerns framework. *J Psychosom Res.* 2008;64:41-6.
12. Lowry KP, Dudley TK, Oddone EZ, Bosworth HB. Intentional and unintentional nonadherence to antihypertensive medication. *Ann Pharmacother.* 2005;39:1198-203.
13. Hersh EV, Pindo A, Moore PA. Adverse drug interactions involving common prescription and over-the-counter analgesic agents. *Clin Ther.* 2007;29 Suppl:2477-97.
14. Ernst E. The risk-benefit profile of commonly used herbal therapies: ginko, St. John's wort, ginseng, Echinacea, saw palmetto, and kava. *Ann Intern Med.* 2002;136:42-53.
15. Centers for Medicare and Medicaid Services. 2010 CMS Call Letter. www.cms.gov/PrescriptionDrugCovContra/Downloads/2010CallLetter.pdf (accessed 2011 June 13).
16. Academy of Managed Care Pharmacy. Sound medication therapy management programs, version 2.0 with validation study. *J Manag Care Pharm.* 2008;14(1 suppl B):S2-44.
17. Barnett MJ, Frank J, Wehring H, et al. Analysis of pharmacist-provided medication therapy management (MTM) services in community pharmacies over 7 years. *J Manag Care Pharm.* 2009;15:18-31.
18. Garcia GM, Snyder ME, McGrath SH, Smith RB, Somma McGivney M. Generating demand for pharmacist-provided medication therapy management: Identifying patient preferred marketing strategies. *J Am Pharm Assoc.* 2009;49:611-6.
19. Truong HA, Layson-Wolf C, de Bittner MR, Owen JA, Haupt S. Perceptions of patients on Medicare Part D medication therapy management services. *J Am Pharm Assoc.* 2009;49:392-8.
20. Law AV, Okamoto MP, Brock K. Perceptions of Medicare Part D enrollees about pharmacists and their role as providers of medication therapy management. *J Am Pharm Assoc.* 48:648-53.
21. Doucette WR, Witry MJ, Alkhateeb F, Farris KB, Urmie JM. Attitudes of Medicare beneficiaries toward pharmacist-provided medication therapy management activities as part of the Medicare Part D benefit. *J Am Pharm Assoc.* 2007;758-62.
22. Volume CI, Burbuck LM, Farris KB. Reassessing the MAI: elderly people's opinions about medication appropriateness. *Int J Pharm Pract.* 1999;7:129-37.
23. Chrischilles EA, VanGilder R, Wright K, Kelly M, Wallace RB. Inappropriate medication use as a risk factor for self-reported adverse drug effects in older adults. *J Am Geriatr Soc.* 2009;57:1000-6.
24. Johnson M, Griffiths R, Piper M, Langdon R. Risk factors for an untoward medication event among elders in a community-based nursing caseloads in Australia. *Public Health Nurs.* 2005;22:36-44.
25. Hutchinson TA, Flegel KM, Kramer MS, Leduc DG, Kong HH. Frequency, severity, and risk factors for adverse drug reactions in adult out-patients: A prospective study *J Chron Dis.* 1986;39:533-42.

26. Haijar ER, Hanlon JT, Artz MB, et al. Adverse drug reaction risk factors in older outpatients. *Am J Geriatr Pharmacother.* 2003;1:82-9.
27. Routledge PA, O'Mahony MS, Woodhouse KW. Adverse drug reactions in elderly patients. *Br J Clin Pharmacol.* 2003;57:121-6.
28. Carbonin P, Pahor M, Bernabei R, Sgadari A. Is age an independent risk factor of adverse drug reactions in hospitalized medical patients? *J Am Geriatr Soc.* 1991;39:1093-9.
29. Haijar ER, Cafiero AC, Hanlon JT. Polypharmacy in elderly patients. *Am J Geriatr Pharmacother.* 2007;5:345-51.
30. Veehof LJ, Stewart RE, Meyboon-de Jong B, Haaijer-Ruskamp FM. Adverse drug reactions and polypharmacy in the elderly in general practice. *Eur J Clin Pharmacol.* 1999;55:533-6.
31. Col N, Fanale JE, Kronholm P. The role of medication noncompliance and adverse drug reactions in hospitalizations of the elderly. *Arch Intern Med.* 1990;150:841-5.
32. Saltsman CL, Hamilton RA. Risk factors for patient hospitalization. *Am J Health Syst Pharm.* 1999;56:450-3.
33. Tamblyn RM, McLeod PJ, Abramhamowicz M, Laprise R. Do too many cooks spoil the broth? Multiple physician involvement in medical management of elderly patients and potentially inappropriate drug combinations. *CMAJ.* 1996;154:1177-84.
34. McCombs JS, Nichol MB, Sclar DA. Single pharmacy patronage and adverse drug reactions: A case study of cimetidine. *J Res Pharmaceut Econ.* 1993;5:3-24.
35. McCombs JS, Liu G, Shi J, et al. The Kaiser Permanente/USC patient consultation study: Change in the use and cost of health care services. *Am J Health Syst Pharm.* 1998;55:2485-99.
36. Pahor M, Guralink JM, Gambassi G, et al. The impact of age on risk of adverse drug reactions to digoxin. *J Clin Epidemiol.* 1993;46:1305-14.
37. DiMatteo MR. Social support and patient adherence to medical treatment: A meta-analysis. *Health Psychol.* 2004;23:207-18.
38. Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. Adverse drug events occurring following hospital discharge. *J Gen Intern Med.* 2005;20:317-23.
39. Hanlon JT, Pieper CF, Haijar RJ, et al. Incidence and predictors of all and preventable adverse drug reactions in frail elderly persons after hospital stay. *J Gerontol A Biol Sci Med Sci.* 2006;61:511-5.
40. Seeman TE, Guralnik JM, Kalplan GA, Knudsen L, Cohen R. The health consequences of multiple morbidity in the elderly: The Alameda County study. *J Aging Health.* 1989;1:50-66.
41. Beyth RJ, Shorr RI. Epidemiology of adverse drug reactions in the elderly by drug class. *Drugs Aging.* 1999;3:231-9.
42. Koecheler JA, Abramowitz PW, Swim SE, Daniels CE. Indicators for the selection of ambulatory patients who warrant pharmacist monitoring. *Am J Hosp Pharm.* 1989;46:729-32.
43. Barenholtz Levy H. Self-administered medication-risk questionnaire in an elderly population. *Ann Pharmacother.* 2003;37:982-7.
44. Langford BJ, Jorgenson D, Kwan D, Papoushek C. Implementation of a self-administered questionnaire to identify patients at risk for medication-related problems in a family health center. *Pharmacotherapy.* 2006;26:260-8.
45. Moczygemba LR, Barner JC, Lawson KA, Godley P, Johnsrud M. Patient satisfaction with a pharmacist-provided telephone medication therapy management program. *Res Social Adm Phar.* 2010;6(2):143-54.
46. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77-101.
47. Greenbaum TL. Moderating focus groups: A practical guide for group facilitation. Thousand Oaks, CA: Sage Publications, 1999.
48. Huston SA, Hobson EH. Using focus groups to inform pharmacy research. *Res Social Adm Pharm.* 2008;186-205.
49. Garcia GM, Snyder ME, McGrath SH, et al. Generating demand for pharmacist-provided medication therapy management: Identifying patient-preferred marketing strategies. *J Am Pharm Assoc* 2009;49:611-6.
50. Chewing B, Schommer JC. Increasing clients' knowledge of community pharmacists' roles. *Pharm Res.* 1996;13:1299-1304.
51. McDonough RP, Doucette WR. Using personal selling skills to promote pharmacy services. *J Am Pharm Assoc.* 2003;43:363-74.
52. Miller WR, Rollnick S, ed. Motivational interviewing: Preparing people for change. 2nd ed. New York: The Guilford Press, 2002.

Appendix A: Medication Risk Assessment Questionnaire

Medication Risk Assessment Form

This is a voluntary questionnaire regarding medications. You may use your own information, make up information, or just simply read over the assessment form. After answering these questions we will provide you with a score that reflects your risk of medication-related complications. Based on your evaluation of this assessment form or your medication risk score we would like to hear your responses to receiving such risk information. Please place a check mark next to the information that applies to you. Feel free to ask any questions if you are not sure exactly what a question is asking.

1. What medical condition(s) have you been diagnosed or treated for?

<input type="checkbox"/> Acid Reflux	<input type="checkbox"/> Depression	<input type="checkbox"/> Osteoporosis
<input type="checkbox"/> Arthritis	<input type="checkbox"/> Diabetes	<input type="checkbox"/> Ulcer
<input type="checkbox"/> Asthma/COPD	<input type="checkbox"/> Heart Failure	<input type="checkbox"/> Chronic Pain
<input type="checkbox"/> Hypertension (High Blood Pressure)	<input type="checkbox"/> Migraine	<input type="checkbox"/> Prostate Condition
<input type="checkbox"/> Dyslipidemia (High Cholesterol)	<input type="checkbox"/> Transplant	<input type="checkbox"/> Thyroid Condition
2. How many prescription medications do you currently take on a regular basis?

<input type="checkbox"/> None	<input type="checkbox"/> 1-3	<input type="checkbox"/> 4+
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3. Are you 65 years of age or older?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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4. Do you live alone?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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5. Do you have more than one person prescribe medications for you?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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6. Do you sometimes get prescriptions filled at more than one pharmacy, including mail-order?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------
7. Do you take any non-prescription or over-the-counter medications regularly?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------
8. Do you take any vitamins, herbals, or supplements regularly?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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9. Have you ever experienced a reaction to a medication that caused you to visit the ER or hospital?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------
10. Have you been admitted to the hospital in the past 30 days?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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11. Do you sometimes get confused whether or not you have taken a dose of your medication?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------
12. Do you ever take any medications without knowing what they are for?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------
13. Do you sometimes experience unwanted side effects from any of your medications?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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14. Do you sometimes feel that your medications are not working?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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15. Do you sometimes have problems affording your medications?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
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Medication Risk Assessment Rating

Based on your responses to this assessment form, your medication risk index is:

- _____ Low You have a low number of risk factors that are associated with medication-related complications. You may wish to consider Medication Therapy Management (MTM) services if you experience health changes or would like preventative assistance.
- _____ Moderate You have multiple risk factors associated with experiencing medication-related complications. You are a good candidate for Medication Therapy Management (MTM) services.
- _____ High You have a high number of risk factors associated with experiencing medication-related complications. You are an excellent candidate for Medication Therapy Management (MTM) services.

Appendix B: Questions from Focus Group Interview Guides

- Introduction, CMR Discussion
 - What do you think of getting a Comprehensive Medication Review?
 - Do you think you need a CMR if you get counseling when you pick up your prescriptions?
 - What do you think puts patients at risk for having medication problems?
 - What if your local pharmacist didn't offer the Comprehensive Medication Reviews, would you be willing to go to a pharmacist at a different pharmacy
 - What do you think about having a CMR over the telephone?
- Questionnaire-related Questions
 - Are there any questions you didn't like or thought were unrelated to having medication problems?
 - Are there any questions you think are associated with medication problems we didn't ask?
 - Would you fill out a questionnaire like this if your Medicare Part D plan sent it to you in the mail? What if you had to score it at home?
 - What if they called to have it filled out over the phone?
 - What if the questionnaire was on a website?
 - What if your pharmacist asked you to fill it out at the pharmacy?
 - What concerns would you have and how could these concerns be addressed?
 - What do you think about the wording for the categories?
 - Was anyone surprised or concerned by their rating? And if so, why?
 - What would you do? Who would you talk to?
 - Would getting your rating make you want to sign up for a medication therapy management service?