

## Medication Therapy Management for Victims of Torture

Thomas Buckley, RPh, MPH  
Assistant Clinical Professor  
University of Connecticut School of Pharmacy

National Capacity Building Project  
October 26, 2011

---

---

---

---

---

---

---

---

## Objectives

1. Explain the need for comprehensive medication therapy management (MTM) in a racial/ethnic minority community afflicted with chronic disease from exposure to torture or trauma.
2. Illustrate the core components and value of MTM within the patient centered medical home model.
3. Describe the project design of partnering pharmacists with community health workers to deliver culturally and linguistically appropriate MTM services.
4. Describe the clinical, social, financial results and policy implications of providing MTM services in a high-risk patient population.

---

---

---

---

---

---

---

---

## Rationale for MTM

- Cambodian-Americans have exceptionally high prevalence of chronic mental and physical disease due to torture and trauma experienced during the Khmer Rouge regime.
- National Cambodian American Health Initiative: In 2005 declared "state of emergency" in the Cambodian community due to:
  - escalating rates of life-threatening chronic disease
  - diminishing resources of chronic care
- Lack of access to health care due to:
  - Language
  - Culture
  - Socioeconomic conditions
  - Lack of understanding of trauma issues
- Health literacy issues
  - <8<sup>th</sup> grade level, functionally illiterate in English & Khmer

---

---

---

---

---

---

---

---

## Rationale for MTM for victims of torture/trauma

- Chronic diseases → Polypharmacy
- > 50% Cambodian elderly have 3+ chronic meds
- 32% adverse events leading to hospital admission attributed to medications in U.S.
- Adverse drug reactions are 4<sup>th</sup> leading cause of death
  - The cost of drug-related morbidity and mortality exceeds the annual expenditure for drug therapy in the United States!
- MTM services: documented improvement in therapy outcomes and reduction in health care expenditures
- MTM research had not addressed individuals of ethnic/racial minorities
  - Particularly those afflicted with chronic disease from exposure to torture or trauma

---

---

---

---

---

---

---

---

---

---

## Project Introduction

- Collaboration between the Connecticut Pharmacists Foundation (CPF), Khmer Health Advocates (KHA), and Mt Carmel Cambodian Project
- Objective: Deliver culturally and linguistically appropriate MTM services to elderly high-risk Cambodians
  - Long Beach, California (via telemedicine)
  - Connecticut
  - Western Massachusetts.
- Research demonstrates that community health workers (CHWs) have provided significant improvement in participant knowledge, health behavior, satisfaction of care, health outcomes, and health care utilization.
- Thesis: Partnering pharmacists with local CHWs to educate elderly Cambodian-Americans on the appropriate use of their medications will:
  - Identify and resolve drug therapy problems
  - Optimize health outcomes

---

---

---

---

---

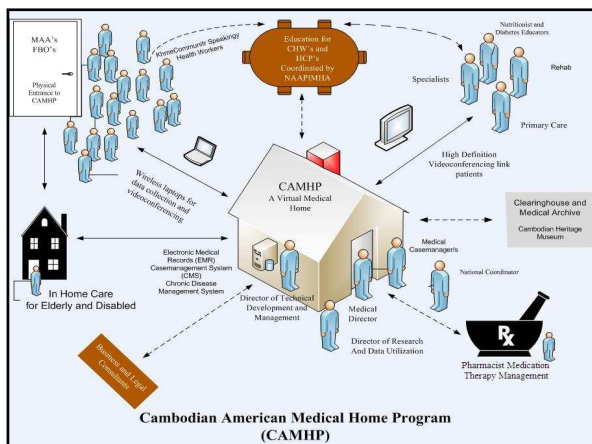
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

## Cambodian American Medical Home

- Partnership of CBOs and health care providers
- National entity providing 4 levels of support:
  1. Training and Peer Supervision from experts in the field of Cambodian health and trauma informed care
  2. Data collection and dissemination from the Cambodian Information Management System (EMR)
  3. Direct and Indirect Treatment Services
    - a. Culturally & linguistically appropriate MTM from pharmacist trained in trauma-informed care
    - b. Partnerships with local clinics and providers
    - c. Nurse case manager locally directs CHWs & health navigators
  4. Evidence-based care - objective reviewers in local entities

---

---

---

---

---

---

---

---

---

---

## “Why Pharmacists Belong In The Medical Home”

- Marie Smith (UConn)
- David Bates (Brigham&Women’s)
- Thomas Bodenheimer (UCSF)
- Paul Cleary (Yale)



Health Affairs, May 2010; 29(5): 906-913

---

---

---

---

---

---

---

---

---

---

## Pharmacists in Medical Home

- Pharmacists “are well trained health professionals, yet they are often underused.”
- “...the complementary knowledge and skills of pharmacists and prescribers can lead to improved patient care and medication use – especially for chronic conditions.”
- “The medical home movement provides an opportunity to examine innovative approaches to expanding patient-centered pharmaceutical care in a collaborative, team-based practice model.”

Source: Marie Smith, David W. Bates, Thomas Bodenheimer, and Paul D. Cleary, “Why Pharmacists Belong In The Medical Home. *Health Affairs*, May 2010; 29(5): 906-913.

---

---

---

---

---

---

---

---

---

---

### MTM Core Components

1. Develop a **comprehensive, active medication profile** (including "traditional therapies")
2. Perform a **systematic assessment of each medication** for appropriateness, efficacy, safety, and adherence (in this sequence) to achieve optimal treatment goals;
3. **Identify, resolve, monitor, and prevent drug therapy problems** in collaboration with the PCP and other prescribers:
  - drug therapy problems include: allergies, inappropriate medication selection, omissions, duplications, low or excessive dosages, drug interactions, adverse events, cultural competency and health literacy challenges, adherence issues, and costly regimens
4. **Collaborate with the patient's PCP, specialists, and health care professionals** to optimize medication therapy and achieve treatment goals

---

---

---

---

---

---

---

---

---

---

### MTM Core Components (cont'd)

5. Provide the **patient** with a **personal medication record** that can be shared with caregivers, prescribers (PCPs and specialists), and across care transitions
6. Providing the patient with a **medication action plan** to empower them to work on **medication self-management goals** and share **decision-making**
7. Sending the patient's PCP (and other providers, as needed) **the pharmacists' care plan with evidence-based recommendations on identified drug therapy problems** for review and action prior to inclusion in the patient's medical record;
8. Schedule **follow-up patient visits, as needed, to resolve drug therapy problems** and to **evaluate the patient's progress toward achievement of medication self-management goals.**

---

---

---

---

---

---

---

---

---

---

### Project Goals

- **By the end of 12 months, the delivery of a culturally appropriate MTM program to an elderly Cambodian American community will:**
  1. **Identify & resolve social determinants of health as barriers to optimal therapeutic outcomes in a trauma/torture community.**
  2. **Improve patients' drug therapy outcomes by at least 20%.**
  3. **Demonstrate similar improvement of drug therapy outcomes between face-to-face and telemedicine-provided care.**
  4. **Reduce potentially inappropriate medication use in the elderly by at least 20%.**
  5. **Demonstrate that a reduction in total annual health expenditures exceeds the cost of providing these services**

---

---

---

---

---

---

---

---

---

---

## Project Methods

- Goal of reaching:
  - 50 patients in Connecticut/Western Massachusetts (face-to-face consultation in home or clinic setting)
  - 50 patients in Long Beach, California (local CHW in their home or clinic and pharmacists in Connecticut via telemedicine)
- Population identification
  - Connecticut/Western Massachusetts: case finding in the KHA provider network.
  - California: Mount Carmel Cambodian Project, an affiliate organization within the National Cambodian American Health Initiative
  - CHWs screen elderly patients to determine their use of chronic medications
  - Patients matching the criteria (at least 2 chronic conditions and 3 chronic medications) will be eligible for participation in the project
  - Patients randomly selected and asked if they would like to participate in the project until the site number reaches 50 patients

---

---

---

---

---

---

---

---

---

---

## Project Methods

- Initial visit (pharmacist & CHW):
  - Developed comprehensive medication record of prescription and non-prescription therapies
  - Identification and potential resolution of drug-therapy problems (including medication adherence)
  - A medication action plan for the patient
  - MTM report for the patient's provider.
- Follow-up visits occurred quarterly (with a goal of 4 total visits) to monitor progress with the plan
- Patient received written report at each visit:
  - Med list (drug picture) matched to condition
  - List of medication-related problems (MRPs) – drug to condition
  - Medication action plan (what they need to do prior to next visit)
- Primary care provider receives MTM report after each visit:
  - Med list matched to condition
  - MRPs match drug with condition
  - Pharmacist recommendations to patient and provider

---

---

---

---

---

---

---

---

---

---

## Results

- 96 total patients (627 screened), 217 total visits (2.3/patient)
- The average patient had 6.6 medical conditions and was on 10.3 medications
  - 73% CVD, 68% pain, 53% diabetes, 52% depression/PTSD
- 604 medication related problems (MRPs) were identified, or 6.3 per patient
- 81% of MRPs involved medication appropriateness, effectiveness, or safety; 19% were due to non-adherence
  - MRPs are *systems* rather than *patient* issues

---

---

---

---

---

---

---

---

---

---

### MRPs Major Categories

- Need additional drug therapy: 30%
- Dose too low: 22%
- Non-adherence (compliance): 19%
- Adverse drug reaction: 16%
- Unnecessary drug therapy: 5%
- Different drug needed: 5%
- Dose too high: 3%

---

---

---

---

---

---

---

---

### Clinical Results

- 93% of MRPs were resolved during the study period (with < 4 hours of MTM/patient)
- Inappropriate medication use decreased 34.5% (194 inappropriate drug use MRPs reduced to 67)
- Depression screen (mean Hopkins score) improved 24.5% ( $p=0.022$ ) from initial to final MTM visit

---

---

---

---

---

---

---

---

### Clinical Results

- Medication adherence behavior (Modified Morisky Survey) improved 22.5% ( $p=0.027$ )
  - Significantly more high adherers identified than low adherers ( $p=0.022$ ) from first to final visit
- Relating adherence to beliefs about medicine:
  - Low adherence correlated with overall negative health beliefs ( $p=0.015$ ); low adherence strongly correlated with how they felt about meds in general (not their specific meds), and how prescribers use meds ( $p<0.001$ )
  - Reinforces importance of communication/relationship

---

---

---

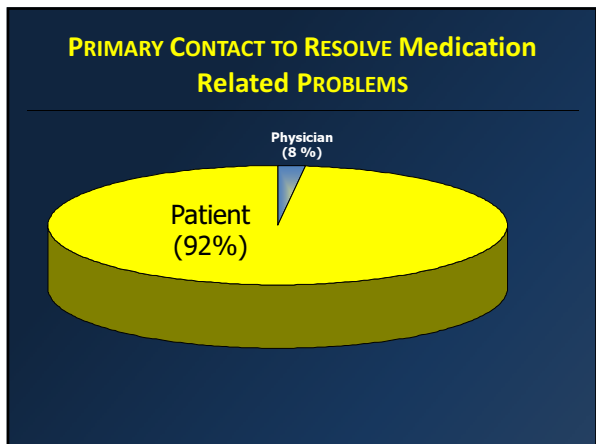
---

---

---

---

---



---

---

---

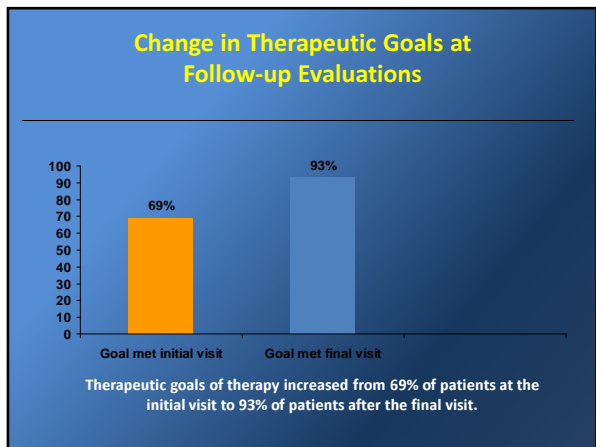
---

---

---

---

---



---

---

---

---

---

---

---

---

- ### Patient & Provider survey
- Positive patient experiences = 88%
    - Improved communication/empowerment
    - Clinical improvement
    - Health education
    - Referrals (improved access)
  - Challenging experiences = 42%
    - Cross-cultural communication
    - Technology
    - Fear of medical professionals
    - Patient isolation

---

---

---

---

---

---

---

---

## Financial Results

- Cost avoidance was estimated using evidence-based analytics from Assurance© software
- Calculating the costs of providing MTM:
  - Pharmacist & CHW costs for each patient
  - Compared to total of direct cost savings (drug changes or drug prevention costs) and cost avoidance (health care costs & prevention savings).
  - Health expenditure savings included clinic, ED, urgent care, lab, and specialty office visits avoided; work days saved, and drug therapy changes

---

---

---

---

---

---

---

---

---

---

### Health Care Cost Avoidance\*

Health Care Cost Avoidance*	96 patients 217 encounters	
	# of events	\$ Savings
Clinic outpatient visit avoided	381	\$69,342
Specialty office visits avoided	179	\$100,956
Drug Savings	202	\$13,820
Employee work days saved	85	\$27,200
Laboratory service avoided	25	\$1,250
Urgent care visit avoided	54	\$9,828
Emergency department visit avoided	147	\$120,687
<b>Total</b>	<b>1,073</b>	<b>\$343,083</b>

\*Health care cost avoidance represented by U.S. national averages for 2008 (AHRQ Medical Expenditure Panel Survey) *Pharmaceutical Care Practice: The Clinician's Guide*, McGraw-Hill, New York, NY, 2011

---

---

---

---

---

---

---

---

---

---

### Summary of Service Savings and Costs

	Savings	Cost	Net
Health Care:	\$329,263	\$5,747	\$323,516
Drugs:	\$13,820	\$3,507	\$10,313
Pharmacist & CHW		\$42,715	
<b>Totals:</b>	<b>\$343,083</b>	<b>\$51,969</b>	<b>\$291,114</b> <b>(5.6 : 1)</b>
Per Encounter:	\$1581.03	\$239.49	\$1,341.54
Per Patient:	\$3573.78	\$541.34	<b>\$3,032.44</b>

---

---

---

---

---

---

---

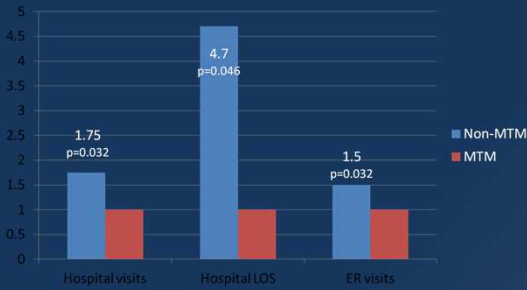
---

---

---



### Hospital/ED Utilization Rate Comparison



Survey of 140 Cambodian Americans during MTM study period  
Matched controls of conditions: MTM patients vs non-MTM patients

---

---

---

---

---

---

---

---

---

---

### Financial Results

#### Comparison with other studies (using only pharmacists, not CHWs)

- Savings/cost ratio ranges in MTM studies from 4:1 to 12:1 – utilizing direct and/or indirect cost savings
  - 2010 CT Medicaid MTM Medicaid study showed direct cost savings (drug & health care utilization; cost avoidance not included) of 4:1
  - 2008 Minnesota MTM Medicaid (direct & indirect cost savings) = 12:1

---

---

---

---

---

---

---

---

---

---

### Culturally Appropriate MTM Conclusions

- Despite limitations, powerful results demonstrated both medically and financially
- Goal of reducing potentially inappropriate medication use by greater than 20% exceeded
  - Achieved a 34.5% reduction
- Almost all MRPs were resolved (93%)

---

---

---

---

---

---

---

---

---

---

### Culturally Appropriate MTM Conclusions

- Empowered high-risk trauma/torture patients
- Reduced the burden on caregivers and the need for higher cost medical care
- Therapy goals at 93% by end of project
  - Therapy outcomes improved 24%
- Cost:savings ROI of nearly 6:1
  - <15% of total trauma care per patient

---

---

---

---

---

---

---

---

### Culturally Appropriate MTM Conclusions

- Using new technologies, culturally and linguistically appropriate MTM was able to be provided to an isolated high-risk trauma patient population
- Consistent with current health reform initiatives, these results support a patient-centered medical home model which includes MTM to eliminate health disparities

---

---

---

---

---

---

---

---

**“Pharmaceuticals are the most common medical intervention, and their potential for both help and harm is enormous. Ensuring the American people get the most benefit is a critical component of improving the national health care system.”**

*The Institute of Medicine*

**“Drugs don’t work in people that don’t take them.”**

*C. Everett Koop, MD  
Former U.S. Surgeon General*

---

---

---

---

---

---

---

---