UNIVERSITY OF HAWAII AT HILO
DANIEL K. INOUYE COLLEGE OF PHARMACY

John M. Pezzuto, PhD, Professor and Founding Dean
Founded in 2006
Vision: Improve health in Hawaii and throughout the Pacific
A key strategic priority: Optimizing role of pharmacists and ensuring appropriate compensation
Graduated first class of PharmD in 2011
Also offer:
  - BS in Pharmacy Studies
  - MS in Clinical Psychopharmacology
  - PhD in Pharmaceutical Sciences
  - CPE (we are the only organization in the state that is an accredited provider of both CME and CPE)
Home of the UH-H Center for Rural Health Science

PHARM-2-PHARM
The Vision
The Aims
The Model
The Partners
The Project

DATA FROM 2004 TO 2009 SHOWED¹,...

- The number of independent and rural pharmacies decreased significantly after the implementation of Medicare Part D
- The number of communities that saw their only pharmacy close increased
- An unintended consequence of Medicare Part D

NATIONAL EFFORTS TO REDUCE DRUG SPEND*

- The Data:
  - Spending on outpatient prescription drugs has increased at double-digit rates over the past decade.
- A unilateral response:
  - Closed or highly restrictive formularies, in which insurance providers would only cover certain drugs.
- A predictable result:
  - Excluding specific medications or therapeutic classes led to considerable dissatisfaction among patients and physicians.
- The impact of health plan tinkering:
  - Adding an additional level of co-payment, increasing existing co-payments, and requiring mandatory generic substitutes all reduced health insurance plan payments significantly


DRUG SPEND PROBLEM SOLVED?

- **Authors' worries**: Pharmacy benefit managers and their sponsors may be designing prescription benefit packages that reduce the costs of pharmaceuticals but increase overall medical costs. There is little evidence about whether lower pharmaceutical use resulting from higher patient cost-sharing adversely affects clinical outcomes.
- Can these worries be addressed with better data and collaboration?

A BETTER APPROACH....

- **Beginning in 1999**, Fairview Health Services of Minneapolis/St. Paul implemented the Collaborative Practice of Pharmaceutical Care at 6 of 15 primary care clinics, where pharmacists now play an integral role in the delivery of care.
- **RESULTS**:
  - Improvements in clinical outcomes
  - Reductions in cost

IMPROVED OUTCOMES


REDUCED TOTAL COST OF CARE (NOTE INCREASE IN DRUG COSTS)


WHY NOW?

- Previous obstacles to community pharmacy innovation:
  - Lack of payment/reimbursement
  - Lack of pharmacists (workforce shortage)
  - CMS funding to "support local projects in communities across the nation that aim to deliver better care and better health at lower costs"
  - Health Care Innovation Award program
  - $1 billion in awards
  - Pharm2Pharm is one of 107 projects selected out of about 3,000 (only a few of these selected projects involve leveraging community pharmacists)
  - Pharm2Pharm project will pay community pharmacists $695 per patient enrolled per year on the assumption that there will be ROI to CMS

NO LONGER A PHARMACIST SHORTAGE?

- [http://www.pharmacymanpower.com/about.jsp](http://www.pharmacymanpower.com/about.jsp)
DEMAND BY PRACTICE SETTING: MARCH 2013

<table>
<thead>
<tr>
<th>Setting</th>
<th>Demand Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>2.78</td>
</tr>
<tr>
<td>Institutional</td>
<td>3.22</td>
</tr>
<tr>
<td>Multiple</td>
<td>3.23</td>
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</tbody>
</table>

Community refers to community pharmacists of all types: independent, chain, supermarket and mass merchandisers.
Institutional refers to pharmacies affiliated with hospitals and health care systems.
Multiple refers to pharmacies affiliated with large organizations that include community, clinic and inpatient pharmacies.

Region and Divisional Demand Index - Mar 2013
Regions and divisions refer to geographic areas defined by the U.S. Bureau of the Census.

<table>
<thead>
<tr>
<th>Region/Division</th>
<th>States</th>
<th>Demand Index</th>
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</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>CT, MA, ME, NH, RI, VT</td>
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</tr>
<tr>
<td>New England</td>
<td></td>
<td>2.44</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>NJ, WV, PA</td>
<td>2.52</td>
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<tr>
<td>South</td>
<td>DE, DC, FL, GA, MD, NC, SC, VA, WV</td>
<td>3.28</td>
</tr>
<tr>
<td>South Atlantic</td>
<td></td>
<td>2.95</td>
</tr>
<tr>
<td>East South Central</td>
<td>AL, WI, MS, TN</td>
<td>3.39</td>
</tr>
<tr>
<td>West South Central</td>
<td>AR, LA, OK, TX</td>
<td>3.71</td>
</tr>
<tr>
<td>Midwest</td>
<td></td>
<td>8.18</td>
</tr>
<tr>
<td>East North Central</td>
<td>IL, IN, MI, OH, WI</td>
<td>3.09</td>
</tr>
<tr>
<td>West North Central</td>
<td>IA, KS, MN, MO, NE, ND, SD</td>
<td>3.39</td>
</tr>
<tr>
<td>West</td>
<td></td>
<td>3.48</td>
</tr>
<tr>
<td>Mountain</td>
<td>AZ, CO, ID, MT, NV, UT, WY</td>
<td>3.37</td>
</tr>
<tr>
<td>Pacific</td>
<td>AK, CA, HI, OR, WA</td>
<td>3.61</td>
</tr>
</tbody>
</table>

A CRITICAL TIME FOR PHARMACISTS
2010: “Over the past year or so, the pharmacy job market has turned 180° from a candidate-driven market to an employer-driven market”

THE GOOD NEWS
Unprecedented national focus on improving healthcare quality & cost-efficiency
Extensive evidence that expanding services offered by pharmacists accomplishes both

OFFICE OF THE CHIEF PHARMACIST:
A REPORT TO THE U.S. SURGEON GENERAL 2011

“Failure to recognize expanded roles of pharmacists limits the potential for patients and our health care system to benefit from access to additional quality primary care services. Exclusion of pharmacists as health care providers also eliminates any subsequent service-sustaining compensation. Pharmacists are increasingly requested by many health systems, providers, and primary care teams to improve outcomes and delivery of care. However, in terms of pharmacist services, as the complexity or level of clinical service increases, the revenue generation potential is reduced. This is in stark contrast to the clinical services provided by other health professionals.”


ASSESSING TRUE DEMAND

“Demand” = ease of filling open positions by employers (e.g., Pharmacy Manpower Project)
• Does not accurately reflect need for pharmacists for optimal patient care (i.e., captures only one aspect of demand)
• Distortions due to payers not recognizing pharmacists as providers

“Demand” = the number of pharmacists required to improve healthcare quality and cost-efficiency
• Is more accurate (i.e., takes a broader view of demand)
• Is much greater
• e.g., HRSA: pharmacist demand derived from demand for pharmaceuticals and role of pharmacists in providing medication services that patients require
(http://bhpr.hrsa.gov/healthworkforce/reports/pharmsupply20042030.pdf)
PHARM-2-PHARM AIMS

Better health
Better care
Lower costs

Specifically, reduce annual medication-related hospitalizations & ER visit rates and total cost of care among elderly/others at risk in rural Hawaii*

*According to Hawaii Health Information Corporation, there were over 15,000 medication-related ER visits and over 700 medication-related hospitalizations among elderly in rural counties of Hawaii in 2010, resulting in over $63,000,000 in charges to payers.

MODEL

A formal hospital pharmacist-to-community pharmacist collaboration (called "pharmacist-to-pharmacist" or "Pharm2Pharm")

Designed to address gaps in care among patients at risk as they transition from hospital to community settings

Designed to leverage accessibility of community pharmacists in rural Hawaii*

*In Hawaii, the 2012 physician shortage in the metropolitan county of Honolulu is 33% of current supply compared to a shortage of 44% across the three rural counties targeted in this project (http://www.ahec.hawaii.edu/workforce.html)
MODEL INNOVATIONS

Pharmacists collaborating across the continuum of care
Pharmacist review of medication reconciliation *
Pharmacist-coordinated medication management **
Integration of pharmacists into care teams
Payment restructuring for pharmacist services

* Hospital pharmacists found unexplained discrepancies between preadmission medication regimens and discharge medication orders in 49% of all general medicine patients in a large teaching hospital.
** Ambulatory care pharmacist consultations focused on selected high-risk patients resulted in significantly lower non-elective hospitalization and mortality.

PARTNERS

Operating partners
- Rural hospitals
- Hawaii Community Pharmacist Association members
Other partners
- Hawaii Health Information Exchange (our state-designated entity)
- Altarum Institute

PROJECT

- 3 year cooperative agreement
- July 1, 2012 through June 30, 2015
- Total award = $14.3MM
- Budget approval annually
- Target savings = $27.1MM in cost avoidance

PROJECT WORK-STREAMS

Workforce development
- Re-tool current pharmacies via CPE
- Adopt PharmD student rotations
Pharm2Pharm service operations
- Standard operating procedures
- Medication protocols
- Collaborative practice agreements
Supporting HIT
- Surescripts network interface with HHIE
- Rural hospital interface with HHIE
- EMR and Secure Electronic Communication for community pharmacists
Project administration
- Staffing
- Administering contracts
- Planning, Monitoring and Evaluation
- CMS communications

CARE COORDINATION....

The Promise
The Puzzle

U.S. HEALTH CARE EXPENDITURES

HEALTH SERVICES RESEARCH

CHIPREN

- Chronic conditions
- Acute illness
- Traumatic injury or poisoning
- Mental
- Routine Preventative Health Care
- Pregnancy/birth
- Other

47%

25%

8%

7%

6%

5%
Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries
15 Randomized Trials

Deborah Peikes, PhD, MPP
Arnold Chen, MD, MSc
Jennifer Yeh, MD, MSc
Barry Brown, PhD

FFS Medicare patients who volunteered to participate between April 2002 and June 2005 were randomly assigned to treatment or control (usual care) status. Each program received a negotiated monthly fee per patient from Medicare.

Targeted CHF, CAD, DM, COPD.

OVERALL RESULTS

Only 2 of the 15 programs showed significant reductions in hospitalizations and Medicare expenditures. However one of those was not viable and dropped out of the project. None of the programs generated net savings. None of the programs improved adherence measures. Only a few of the many quality indicators showed improvement.

MINING THE SUCCESSES

The most successful program, Health Quality Partners, risk-stratified its patients at enrollment. Treatment-control group differences were concentrated entirely in the program's highest severity cases (approximately 30% of the sample).

TOP 2 VS. OTHERS

DIFFERENTIATING FEATURES:

<table>
<thead>
<tr>
<th>Top 2</th>
<th>Others (10 with sufficient sample size)</th>
</tr>
</thead>
<tbody>
<tr>
<td># of in person contacts per month per patient</td>
<td>Nearly 1</td>
</tr>
<tr>
<td>Population enrolled</td>
<td>Average monthly Medicare expenditures of $900-$1200</td>
</tr>
<tr>
<td>Teaching enrollees how to take their meds</td>
<td>Yes</td>
</tr>
<tr>
<td>Local hospital collaboration</td>
<td>Close collaboration</td>
</tr>
<tr>
<td>Opportunities to interact informally with physicians</td>
<td>Frequent opportunities / continuity of care coordinator per physician</td>
</tr>
</tbody>
</table>

Pharm2Pharm model: timeline

<table>
<thead>
<tr>
<th>DISCHARGE</th>
<th>END OF ONE YEAR</th>
<th>GOAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen/enroll</td>
<td>Community Consulting Pharmacist</td>
<td>Improve health</td>
</tr>
<tr>
<td>Med rec</td>
<td>Immediate contact</td>
<td>Prevent ER visits</td>
</tr>
<tr>
<td>Education</td>
<td>≥ 12 visits</td>
<td>Prevent readmissions</td>
</tr>
<tr>
<td>Formal handoff</td>
<td>Quarterly visits to prescribers</td>
<td>Lower total cost of care</td>
</tr>
</tbody>
</table>

Pharm2Pharm model: enrollment

Include

- Rx med(s) with narrow therapeutic index
- Rx med(s) with risk of adverse events
- Rx med(s) (e.g., ASA, aspirin)
- Has ≥ 2 or more chronic comorbid conditions
- ER visit and/or non-elective hospitalization within past year
- Dementia / psychosis
- Hospitalization related to suicide attempt
- Death

Exclude

- Not expected to be discharged to home (e.g., SNF, hospice)
- Not full-time county resident
- Diabetes / hypertension
- Inpatient readmission
Pharm2Pharm model...medication reconciliation

Hospital Consulting Pharmacist

Reconcile with home meds
Compare with med rec from nurse
Resolve any discrepancies

Pharm2Pharm model...patient education

General

• Patient is at risk
• Importance of taking meds properly
• Disease states
• Community pharmacy selection

Specific

• Purpose of each med
• Monitoring each med
• Potential side effects
• How to take each med
• Which meds NOT to take

Pharm2Pharm model...formal handoff

Hospital Consulting Pharmacist

Information transmitted to CCP
Demographics
Allergies
Nursing assessment of ADLs
Discharge care plan
Preadmission medications
Discharge medications
Follow up physician/contact
Primary care provider/contact
HCP clinical notes
HCP contact info

Pharm2Pharm model...immediate post-discharge contact

Hospital Consulting Pharmacist

Within 1 day of discharge...
• Confirm patient picked up meds
• Confirm patient understands meds (what to take and not to take, and how)
• Confirm patient has an appointment with follow up provider
• Schedule Visit 1, within 3 days of discharge

Pharm2Pharm model...> 12 visits

Community Consulting Pharmacist

Patient visit with CCP
• Functional status
• Patient’s goals
• Med rec
• Drug therapy problems
• Adherence counseling/coaching

CCP follow up with prescribers (if needed)
• Recommend solutions to drug therapy problems

THREE-YEAR FOCUS

LAUNCH
Year 1
- Staff
- Contracts
- SOPs & tools
- Training
- Evaluation Plan
- Enrollment

IMPROVE
Year 2
- CQI
- HIT
- Provider collaborations

SUSTAIN
Year 3
- Payment models
- Partnerships
ACKNOWLEDGEMENT OF FEDERAL FUNDING

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Its contents are solely the responsibility of the authors and do not necessarily represent the official views of HHS or any of its agencies.