

## The Evolving Role of the Pharmacist in the Healthcare System

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## Objectives

- To describe why and how healthcare is evolving
- To recognize challenges or barriers to change
- To report examples of non-dispensing pharmacist roles and associated outcomes
- To review the timeline of the evolution
- To understand national and state policy
- To consider next steps for the role of the pharmacist

## What is a pharmacist?

- Per Wikipedia on "Pharmacists":



## What is a pharmacist?

- Per Wikipedia on "Pharmacists":
  - Focus on safe and effective medication use
  - Mortar and pestle
  - Apothecary, chemists, druggists



## What is a pharmacist?

- Per Wikipedia on “Pharmacists”:
- Focus on safe and effective medication use

“The role of the pharmacist has shifted from the classical ‘lick, stick, and pour’ dispensary role, to being an integrated member of the health care team directly involved in patient care.”



## Why the evolution?

- Evolving Health Care
  - Improving quality of life
  - Improving health outcomes
  - Ensuring cost-effectiveness
- Proper medication use is essential
  - ~81% of adults take  $\geq 1$  chronic med
  - ~28% of adults  $\geq 65$  take  $\geq 5$  chronic meds
  - ~30% of children take  $\geq 1$  chronic med
  - ~ 4 billion prescriptions/year



[http://www.pharmacy.ohio-state.edu/forms/outreach/intro-to-pharmacy/Evolving\\_Scope\\_of\\_Pharmacy\\_Practice.pdf](http://www.pharmacy.ohio-state.edu/forms/outreach/intro-to-pharmacy/Evolving_Scope_of_Pharmacy_Practice.pdf)  
[http://www.pharmacist.com/sites/default/files/files/Provider%20Status%20FactSheet\\_Final.pdf](http://www.pharmacist.com/sites/default/files/files/Provider%20Status%20FactSheet_Final.pdf)

American Journal of Pharmaceutical Education 2010; 74 (10)Article S7.

## Why the evolution?

- Improper use of medications in US annually
  - Treatment of chronic conditions
    - \$1.7 trillion
    - ~ \$0.75 of every \$1.00
  - > 1.5 million preventable med-related adverse events
  - ~ \$290 billion in “mostly avoidable” costs to treat inappropriate med use adverse events
  - Non-adherence results in \$100 billion in excess hospitalizations

[http://www.pharmacist.com/sites/default/files/files/Provider%20Status%20FactSheet\\_Final.pdf](http://www.pharmacist.com/sites/default/files/files/Provider%20Status%20FactSheet_Final.pdf)

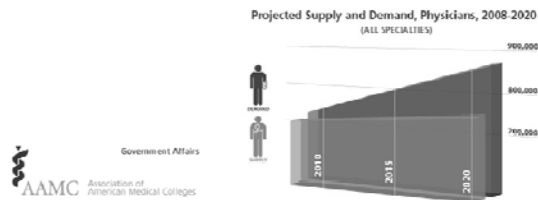
## Why the evolution?

- Increasing patient complexity = Increased demand
  - Access to providers
    - Manage patients’ medication therapy
    - Identify adverse events
    - Manage drug-related problems
    - Vital role in quality prevention
  - Demand for intensive primary care
  - Coordination, management, and integration of chronic disease care following acute episodes

Monolakis, et. al. *Am J Pharm Educ.* 2010 December 15; 74(10): S7.

## Why the evolution?

- **Physician shortage**
  - **By 2020, shortage of > 91,500 physicians**
  - **By 2025, shortage to grow to > 130,600**
  - **Equally distributed among primary care and medical specialties**



## Why the evolution?

- **Affordable Care Act**
  - **Signed March 2010**
  - **Increased access to insurance**
  - **Payment structure changing from volume to value**
  - **Creates opportunities for expanding role for pharmacists**

## Affordable Care Act (ACA)

- **Affordable care organizations (ACO) & Patient-centered medical homes (PCMH)**
  - ✓ **Optimization of every patient's medication therapy is a core element of our future health care system**
- **Hospital**
  - ✓ **Collaboration with ambulatory clinics & community pharmacies**
  - ✓ **Provide medication reconciliation**
  - ✓ **Pharmacists in reducing readmissions**

<http://www.pharmacist.com/aca-new-opportunities-hospital-pharmacists>

## Why pharmacy??

- **Comprehensive and unique education and training**
- **Pharmacists as part of Health care team =**
  - **Improved patient outcomes**
  - **↑ patient satisfaction**
  - **↓ overall health care costs**
- **Interdisciplinary approach evidence**
- **Accessibility**
- **Strong patient educators and patient coaches**

## Barriers to evolution: 7 P's

- Perception/Perspective
- Personality
- Preparation
- Policy
- Privileging
- Provider Status
- Payment

*Barriers*

## P's – Perception/Perspective

- 2009 WV Physician Survey
  - Overall positive attitude toward collaborative practice
  - Physician more likely to support MTM if
    - Primary Care
    - Fewer years of practice
    - Female
  - Physicians less likely to support MTM
    - ↑frequency of physician-pharmacist communication
    - Suspected due to refill/technical based contact

Alkhateeb FM. J Am Pharm Assoc (2003). 2009 Nov-Dec;49(6):797-800

## P's – Perception/Perspective

- 2008 Family Physicians on Collaborative Practice
  - Operational & integration challenges recognized
  - Clinical benefits seen
    - Access to reliable drug information
    - Fresh perspectives
    - ↑Security in med prescribing
- 2013 Consumers and PCPs
  - Difficult for most to envision pharmacists practicing in non-dispensing roles

Pottle K, Farrell B, Haydt S, Dolovich L, Sellors C, et al. Integrating pharmacists into family practice teams. Can Fam Physician. 2008;54:1714-5.e1-5.  
Smith M. Res Social Adm Pharm. 2013 Sep 19.

## P's – Personality

- 2013 Survey of Hospital Pharmacists in Canada
  - Stronger expression of
    - Extraversion
    - Agreeableness
    - Conscientiousness
    - Openness
  - Low levels of Neuroticism
  - Conclusion: Stability in personality

Change  
Change  
Change  
Stability  
CHANGE  
Change  
CHANGE

<http://ideaswar.com/change-and-stability-relationship-in-organizational-change/>  
Hall J. Can J Hosp Pharm. 2013 Sep;66(5):289-95

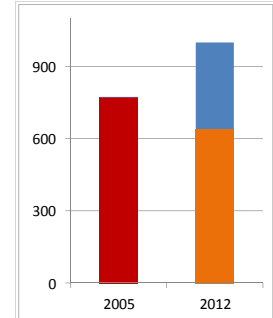
## P's – Preparation: Education

- Per IOM
  - “All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics”
- CAPE Outcomes and ACPE Accreditation Standards
  - Educational competencies of NPs, PAs, and PharmDs
    - Much commonality
    - More therapeutics for pharmacists
    - More diagnostic skills for NPs and PAs

Per Institute of Medicine Committee on the Health Professions Education Summit. Health Professions Education: A Bridge to Quality. Greiner AC, Knebel E, eds. Washington, DC: National Academies Press; 2003.

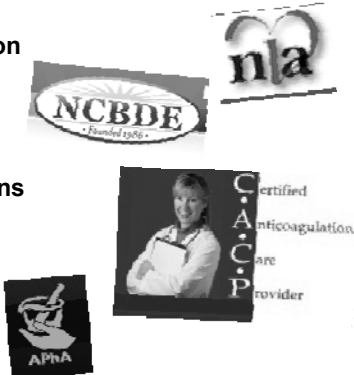
## P's – Preparation: Postgraduate

- Residency
  - Since 1930s
  - Practice preparation
  - Competitive job market advantage
  - Networking opportunities
  - Career planning
  - Professional vision



## P's – Preparation: Postgraduate

- Board Certification
- Traineeships
- Other certifications
- “Advanced Practice Pharmacist”



## P's – Policy

- National: Social Security Act
- State: Collaborative Drug Therapy Management (CDTM)
  - Team approach
  - Practice protocols/guidelines define scope
    - Initiating, modifying, and monitoring drug therapy
    - Ordering and performing laboratory & related tests
    - Assessing patient response to therapy
    - Counseling and educating patients
    - Administering medications
- Local: Institutional policy

Brennan et al. <http://www.ashp.org/DocLibrary/MemberCenter/ClinicalSpecialistsandScientists/AmbulatoryCarePetition.aspx>

## P's – Privileging

- Driving forces
  - Specialized role of pharmacist
  - Measure of competency and accountability
  - Efficiency
  - Billing
- Collaborative Practice Agreements

Monolakis, et. al. *Am J Pharm Educ.* 2010 December 15; 74(10): S7.  
Philip B, Weber R.J. *Hosp Pharm.* 2013 Feb;48(2):160-5.

## P's – Privileging

- Driving forces
  - “Through hospital medical staff actively supporting pharmacists’ privileging, the national Pharmacy Practice Model Initiative can meet its goal of integrating pharmacists as effective members of the patient care team with tangible accountability for achieving optimal drug therapy outcomes”
- C

Monolakis, et. al. *Am J Pharm Educ.* 2010 December 15; 74(10): S7.  
Philip B, Weber R.J. *Hosp Pharm.* 2013 Feb;48(2):160-5.

## P's – Provider Status & Payment

### THE PURSUIT OF PROVIDER STATUS

- Lack of Provider status
  - Limits access to pharmacists’ patient care services and achievable benefits
- Payment
  - Low reimbursement rate relative to physician

American Pharmacists Association  
empowering medication users • advancing patient care

AMCP  
Academy of  
Managed Care  
Pharmacy®

## Where are we in the process? Example roles

- |   |   |   |   |
|---|---|---|---|
| ☒ Disaster Medicine                                   | ☒ Pharmacist-supervised Diabetes Treatment Clinic | ☒ Anticoagulation Management                  | ☒ Substance Abuse (prevention, education, and assistance) |
| ☒ Antimicrobial Stewardship                           | ☒ Transplant Clinic                               | ☒ Hypertension Management                     | ☒ Osteoporosis  |
| ☒ Pharmacogenetic Testing                             | ☒ Medicare Annual Wellness Visits                 | ☒ Antiarrhythmic Medication Monitoring Clinic | ☒ Immunizations   |
| ☒ Improving Adherence                                 | ☒ Smoking Cessation                               | ☒ Motivational Interviewing                   | ☒ Protect Your Stent                                      |
| ☒ Screening Chronic Disease States                    | ☒ Pain Management Clinic                          | ☒ Obesity Care                                | ☒ Spirometry Service                                      |
| ☒ Home Care   | ☒ Health Information Technology                   | ☒ Medication Safety                           | ☒ Anemia Clinic   |
| ☒ Drug Information Centers                            |   | ☒ Transition of Care                          | ☒ Comprehensive Medication Review                         |
| ☒ Discharge Counseling                                |   | ☒ Pediatric Clinics                           |   |
| ☒ Allergy and Asthma Clinic                           |   | ☒ Geriatric Clinics                           |   |
| ☒ Facilitation of Operation and Leadership Committees |   | ☒ Emergency Department                        |   |
|   |   | ☒ Lipid Management                            |   |
|   |   | ☒ Heart Failure                               |   |

## Where are we in the process? Example roles

Disaster Medicine	Pharmacist-supervised Diabetes Treatment Clinic	Anticoagulation Management	Substance Abuse (prevention, education, and assistance)
Antimicrobial Stewardship	Transplant Clinic	Hypertension Management	Osteoporosis
Pharmacogenetic Testing	Medicare Annual Wellness Visits	Antiarrhythmic Medication Monitoring Clinic	Immunizations
Improving Adherence	Smoking Cessation	Motivational Interviewing	Protect Your Stent
Screening Chronic Disease States	Pain Management Clinic	Obesity Care	Spirometry Service
Home Care	Health Information Technology	Medication Safety	Anemia Clinic
Drug Information Centers		Transition of Care	Comprehensive Medication Review
Discharge Counseling		Pediatric Clinics	
Allergy and Asthma Clinic		Geriatric Clinics	
Facilitation of Operation and Leadership Committees		Emergency Department	
		Lipid Management	
		Heart Failure	

## MTM: Role and Outcomes

- Fairview Health Services
  - Started 1990, standardized 1998, Δ 2006 to MTM: Medication Therapy Management

*de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95*

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"The provision of pharmaceutical care services by a licensed pharmacist to optimize the therapeutic outcomes of the patient's medications"

*de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95*

## MTM: Role and Outcomes

- Fairview Health Services
  - Started 1990, standardized 1998, Δ 2006 to MTM: Medication Therapy Management
  - 10 years of clinical, economic, and humanistic outcomes related MTM
  - 9068 patient records
    - 33,706 documented encounters (mean 3.7 per pt)
    - 33631 drug therapy problems identified and addressed
    - 85% of patients had ≥ 1 drug therapy problem

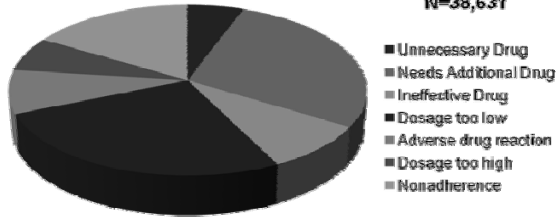
"The provision of pharmaceutical care services by a licensed pharmacist to optimize the therapeutic outcomes of the patient's medications"

*de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95*

## MTM: Outcomes

### Drug Therapy Problems Identified & Addressed by MTM Pharmacists

N=38,631

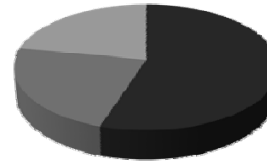


de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95

## MTM: Outcomes

### Clinical Status Assessment

#### Medical Conditions



12,851 conditions in 4,849 pts not at goal

During the course of MTM services

- 7,068 (55.0%) improved
- 2,956 (23.0%) unchanged
- 2,827 (22.0%) worsened

Improved Unchanged Worsened

de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95

## MTM: Return on Investment

**\$2,913,850 savings total**  
**(\$86 per encounter)**

**\$2,258,302 costs total**  
**(\$67 per encounter)**

Health Care Savings
Clinic outpatient visit avoided
Specialty office visit avoided
Employee work days saved
Laboratory service avoided
Urgent care visit avoided
Emergency room visit avoided
Hospital admission avoided
Nursing home admissions
Home health visit

de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95

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**= Estimated ROI of \$1.29 per \$1**

de Oliveira R. J Manag Care Pharm. 2010;16(3):185-95



## MTM outcomes

- Patient satisfaction
  - 95% of respondents agreed or strongly agreed that their overall health and wellbeing had improved because of MTM
- Conclusion
  - Impact of an MTM program in a large integrated health care system suggest improved clinical, financial, and humanistic outcomes

de Oliveira R. *J Manag Care Pharm.* 2010;16(3):185-95

## Where are we in the process?

- The healthcare team
  - Each with unique core set of skills & training
  - Services directly impact quality & cost
  - Improved communication and collaboration
- Physicians + Non-physician professionals working together as teams  
= Patients have improved outcomes



Monolakis, et. al. *Am J Pharm Educ.* 2010 December 15; 74(10): S7.

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Monolakis, et. al. *Am J Pharm Educ.* 2010 December 15; 74(10): S7.

## Healthcare Team outcomes: Kaiser Permanente Colorado Environment

### Roles of the Pharmacist

- Collaborate with health care teams
- Med-related recommendations to prescribers
- Assist patients in achieving goals
- Specialized pharmacy services
  - ID, mental health, oncology, palliative care, solid organ transplant, CVD, anticoagulation
- Provide preventive care
  - Immunizations, smoking cessation, MTM
- Drug information
- Cost-effective prescribing feedback
- Guideline development

Monolakis, et. al. *Am J Pharm Educ.* 2010 December 15; 74(10): S7.

### Healthcare Team outcomes: Kaiser Permanente Colorado Environment

- Anticoagulation
  - Physician-approved guidelines and telepharmacy
  - Pharmacists provide comprehensive anticoagulation services
    - Management of excessive anticoagulation
    - Interruption of anticoagulation therapy for invasive procedures
  - Reduced bleeding complications and adverse events

Helling et al. J Am Pharm Assoc. 2006;46:67-76  
Monolakis, et. al. Am J Pharm Educ. 2010 December 15; 74(10): S7.

### Healthcare Team outcomes: Kaiser Permanente Colorado Environment

- Clinical Pharmacy Cardiac Risk Service (CPCRS)
  - Manage lipid-lowering & antihypertensive meds
    - Initiation, dose adjustments, & follow-up labs
  - Review of 8,014 patients
    - 92% LDL-C levels < 130 mg/dL
    - 73% LDL-C levels < 100 mg/dL
    - 30% ↓ recurrence of CAD complications = \$9 million cost savings over 6-years

Helling et al. J Am Pharm Assoc. 2006;46:67-76  
Monolakis, et. al. Am J Pharm Educ. 2010 December 15; 74(10): S7.

### Healthcare Team outcomes: Kaiser Permanente Colorado Environment

- Clinical Pharmacy International Travel Clinic (CPITC)
  - Advise pts traveling to international destinations
  - Discuss prevention
    - i.e. Traveler's diarrhea & Mosquito-borne diseases
  - Provide info on vaccines to protect travelers
  - Schedule immunizations
  - ~9,500 telephone consultations/year



Image from CDC

Helling et al. J Am Pharm Assoc. 2006;46:67-76  
Monolakis, et. al. Am J Pharm Educ. 2010 December 15; 74(10): S7.

### The Department of Veterans Affairs (VA)

- Pharmacist role
  - Traditional dispensing
  - Quality assurance
  - Patient's health care team
    - Similar to Kaiser
    - Health information technology
    - Manage VA Drug Formulary
    - Additionally, can prescribe under protocol
      - Anticoag, HTN, HLD, DM, CHF, psychiatry, transplantation



Monolakis, et. al. Am J Pharm Educ. 2010 December 15; 74(10): S7.

## VA Outcomes: Economic Benefit

### Savings Benefit

- For every \$1 invested > \$4 in benefit seen
- \$368,000 savings benefit for each clinical pharmacist

### Cost Avoidance

- 600 recommendations, 92% were accepted by providers
- Improved clinical outcomes in >30%
- Avoided harm in 90%
- Cost avoidance ~\$700 each; total savings = \$420,155

### Example

- 2007 Pharmacist-run smoking cessation program
- 16% quit rate
- Annual savings = \$691,200; net cost benefit = \$551,200

Patel RJ et al. *Am J Managed Care*. 1999; 5:465-74  
 Lee et al. *Am J Health-Syst Pharm*. 2002; 59:2070-7  
 Monolakis, et. al. *Am J Pharm Educ*. 2010 December 15; 74(10): S7

## Osteoporosis

- **Ukrop's Pharmacy and Wellness Centers**
  - **Setting: Community Grocery-Store**
    - Health care screenings, MTM services, Disease management, Patient education programs
  - **Pharmacist Role Highlight: Osteoporosis**
    - Perform bone mineral density screening
    - Facilitate identification, education, and referral of patients to collaborative community health management services focused on osteoporosis monitoring and management

Goode J et al. *J Am Pharm Assoc*. 2004; 44; 2:152-60

## Osteoporosis: Ukrop's Screening Outcomes

- Pt survey of 305 screened 3 to 6 months later
  - **Risk of future fracture**
    - 37% high
    - 33% moderate
    - 30% low
  - 78% no prior knowledge
  - **In the moderate- and high-risk categories**
    - 37% scheduled and completed a physician visit
    - 19% had a diagnostic scan
    - 24% were initiated on osteoporosis therapy



Goode J et al. *J Am Pharm Assoc*. 2004; 44; 2:152-60

## HTN Management: RCTs

### Community pharmacy-based MTM

- Pharmacist management of pts w/ DM & HTN
- % pts at goal blood pressure
  - ↓ 20.0% to 6.67% in the control group
  - ↑ 16.0% to 48.0% in MTM group

### Physician/pharmacist collaboration

- Effect on mean BP from baseline to 6-month follow-up
  - ↓ by 6.8/4.5 mmHg in control group
  - ↓ by 20.7/9.7 mmHg in collaborative care group

de Oliveira R. *J Manag Care Pharm*. 2010;16(3):185-95

## HTN: Telemonitoring & Pharmacist Management

- Cluster randomized clinical trial
- N=450
  - Usual care (n=222)
  - Telemonitoring and Pharmacist management (n=228)
- Duration: 12 months intervention & 6 months follow-up
- Telemonitoring intervention
  - Pt received home BP telemonitors
  - Transmitted data to pharmacists who adjusted antihypertensive therapy

Margolis KL, et al. *JAMA*. 2013;310(1):46-56.

## HTN: Telemonitoring & Pharmacist Management

Table 2. Composite and Blood Pressure (BP) Control

	Telemonitoring Intervention		Usual Care		Differential Change From Baseline, % (95% CI)	P Value <sup>a</sup>
	No. of Patients	% (95% CI)	No. of Patients	% (95% CI)		
Composite BP control						
At 6 and 12 mo	112	57.3 (44.8-68.7)	58	26.0 (21.3-31.8)	27.3 (11.8-40.6)	.001
At 6, 12, and 18 mo	96	50.9 (36.9-64.8)	42	21.3 (14.4-30.4)	29.6 (13.1-46.0)	.002
BP control						
At 0 mo	140	71.9 (65.6-77.3)	89	45.2 (39.2-51.3)	26.6 (18.1-33.1)	<.001
At 12 mo	121	71.2 (67.0-75.5)	100	47.8 (43.8-50.7)	18.4 (7.8-27.0)	.005
At 18 mo	135	71.9 (65.0-77.8)	104	57.1 (51.5-62.6)	14.7 (7.0-21.4)	.003

<sup>a</sup>Study group difference for composite BP control and at each individual time point.

Home BP telemonitoring and pharmacist case management achieved better BP control compared with usual care

Margolis KL, et al. *JAMA*. 2013;310(1):46-56

## Diabetes

- Pharmacist-supervised Diabetes Treatment Clinic
- Intervention
  - BG values transmitted via phone or secure message
  - Pharmacists provide med management, frequent follow-up, and education
- Results: n=85 in 3 month review
  - Mean HbA1c ↓ by >1%
  - No episodes of severe hypoglycemia
- Conclusion
  - Integration of a pharmacist into a multidisciplinary Patient-Aligned Care Team in a high-risk diabetic population was successful and is suggested to have a positive impact

Collier IA, Baker DM. *Am J Health-Syst Pharm*. 2014;71:27-36

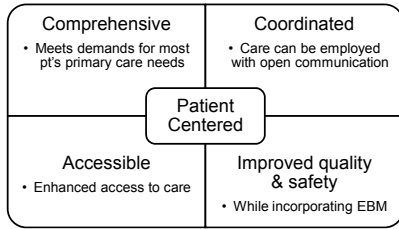
## Medicare Annual Wellness Visits

- Initial Medicare Annual Wellness visit (AWV) administered by clinical pharmacist practitioner (CPP)
  - August 2011 – May 2012
  - 441 interventions during 98 visits
  - 4.5 interventions per AWW
  - All reimbursable up to a maximum of \$159.38 per visit
- Conclusion
  - Medicare AMV administered by a CPP resulted in a wide variety of patient interventions and reimbursement for services provided

Warshany K et al. *Am J Health-Syst Pharm*. 2014;71:44-9

# PCMH

- Patient Centered Medical Home (PCMH) model
- Coordinated and comprehensive delivery of primary care to all age groups
- 5 Main attributes and functions:



Nigro SC et al. Pharmacotherapy. 2014;34(1):96-108

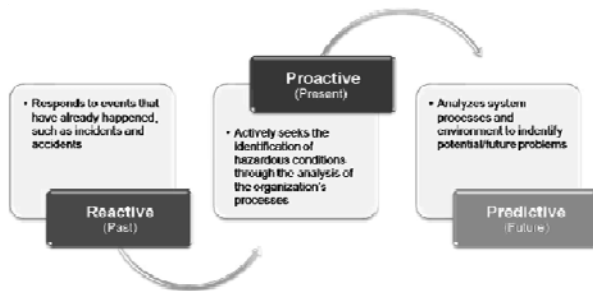
# PCMH: Role of Pharmacist is Fundamental

## Example Pharmacist Roles

- Disease State Management
- Favorable effects known
- Optimization of medication management
- Assessing med effectiveness
- Optimizing costs of drug therapy
- To improve medication adherence
- Perform comprehensive med reviews

Nigro SC et al. Pharmacotherapy. 2014;34(1):96-108

# Evolution of the Pharmacist's Role

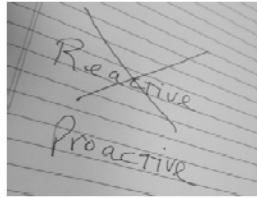


# The Evolving Role of the Pharmacist in the Healthcare System

**Trisha Jordan, PharmD, MS**  
 Associate Pharmacy Director  
 University Hospitals  
 Health-System Pharmacy Administration  
 Residency Coordinator  
 The Ohio State University Wexner Medical Center

## Evolution of the Pharmacist's Role

- Therapeutic medication monitoring
  - Utilization of therapeutic levels
- Parenteral Nutrition management
- High risk medication consult
  - Anticoagulants
  - Pulmonary hypertension
- Order set development
- Technology assessment
- Emergency Response



## Pharmacist Role Medication Cost Control



## Pharmacist Role Medication Cost Control

- High cost targets
- Identify waste
  - IV bag size conversion
- IV to PO conversion
- Commercial to manual preparation
  - Extended dating for IV preparations
  - JIT preparation for high cost medications
- Attending only ordering
- Formulary dosage review
- Formulary non-stock status

## Pharmacist Role Medication Assistance



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## Pharmacist Role in Medication Assistance

- Recommend therapeutic/generic alternatives
- Provide drug information
- Correspond with prescribers
- Counsel patients
  - Medications
  - Administration technique (i.e. enoxaparin)
- Keep current on Medicare and Medicaid coverage policies
- Facilitate reimbursement for off-label indications
  - Literature research and support
  - Appeals

## Role of Medication Assistance Coordinator

- Screen for assistance
- Coordinate benefits
- Enroll patients into programs
  - Manufacturer assistance programs
  - Disease-based assistance programs
  - Medicare Part D prescription drug benefits
  - Social Security
  - Low income subsidy
- Provide co-pay assistance for under-insured
- Provide vouchers for use of charity funds

## Pharmacist Role in Core Measures

- 44 core measures
  - 22 (50%) medication related
- Act as a resource to promote compliance
- Ensure documentation
  - Pharmacist provide documentation
  - Analysis of charts with missing documentation
    - Pharmacists prevented failure 96% cases
- Ensure all eligible patients receive necessary medications as soon as clinically possible

Oliphant, CS J Pharm Pract. 2013 Dec 10

## Role in the Emergency Department

- Pharmacist role
  - Medication Storage
  - Medication order intervention & adjustment
  - Medication history
  - Question resolution
  - Emergency response
- Evolving role
  - Antimicrobial stewardship

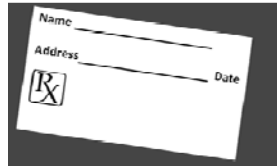


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## Antimicrobial Stewardship

- Optimize use of antimicrobials
- Positive outcomes in the inpatient setting
- Emergency Department (ED) patients not included in most programs



May L. *Ann Emerg Med.* 2012; Nov 2.  
 Dellit T, et. al. *Clin Infect Dis.* 2007; 44:159-177.

## ED Pharmacist-Managed Antimicrobial Stewardship

- 47-bed, level 3 trauma center
- 80,000 visits annually
- Retrospective evaluation of medical records
- ED physician vs. pharmacist managed culture review
- Primary outcomes:
  - Frequency of antimicrobial modifications
  - Occurrence of ED readmission within 96 hours

Randolph. *Am J Health-Syst Pharm.* 2011; 68:916-919.

## ED Pharmacist-Managed Antimicrobial Stewardship

	Physician Reviewed	Pharmacist Reviewed
Number of culture reports	2278	2361
Number of antimicrobial modifications	12% (275/2278)	15% (355/2361)
Rate of readmission within 96 hours	19% (432/2278)	7% (165/2361)*

\*p < .001

Randolph. *Am J Health-Syst Pharm.* 2011; 68:916-919.

## Pharmacist Role in Medication Reconciliation



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## Pharmacist Role in Medication Reconciliation

- National Patient Safety Goal 2006
- Significant challenges to implementation
  - Patient: cognitive
  - Healthcare: time and personnel
- Best strategy is still unclear
  - Incorporating pharmacist improved accuracy
    - Cost and time prohibitive
    - Target approach using alternative staff

## Transitions of Care

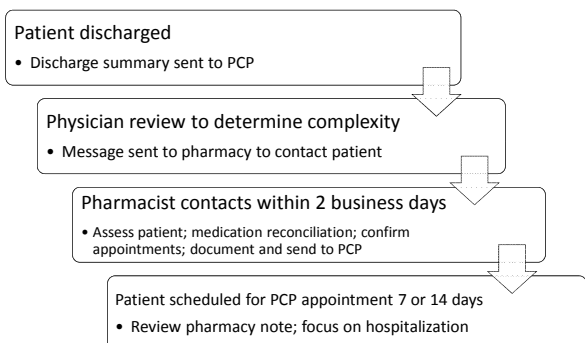
- New codes beginning in January 2013
  - Developed to address non face-to-face work required to coordinate services during care transitions
- 99495
  - Moderate complexity patient
- 99496
  - High complexity patient

## Transitional Care Coordination

- Contact with patient/caregiver within 2 business days of discharge
  - Face-to-face, telephonic, electronic
  - Emphasis on medication reconciliation, activities of daily living, patient education, services needed by patient/family
- Face-to-face visit with physician within 7 or 14 days
- Continued coordination for 30 days post-discharge

[www.ama-assn.org/advocacy/feeschedule.cfm?printPage=1&](http://www.ama-assn.org/advocacy/feeschedule.cfm?printPage=1&)

## Transitional Care Coordination Workflow



## Transitions of Care

- **3 rural Wisconsin pharmacies performing medication reconciliation post-discharge**
  - Pharmacist schedule one-on-one counseling with patients
- **N=60**
- **At least 1 medication discrepancy during transitions of care for 95% patients**
  - New medication started
  - Dosing changes
  - Medication stopped

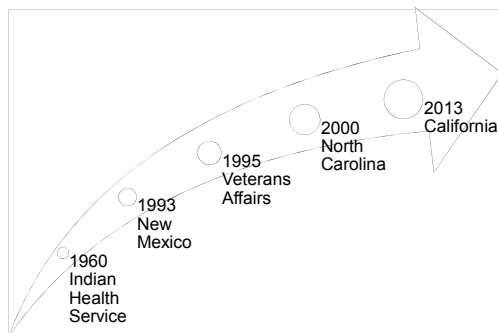
Freund JE, et. al. *Innovations*. 2013; 4(2):117

## Transitions of Care

- **University of Kansas**
  - **October 2012: Pharmacy practice model with HF emphasis**
    - Pharmacy medication reconciliation at admission and discharge
    - Intensive discharge counseling
    - Pharmacist: Patient – 1:30 (non-ICU)
    - Pharmacist in HF clinic
  - **30-day readmission rate dropped from 22.6% to 14.7%**
  - **Targeting HF, MI, pneumonia, and COPD patients**

<http://www.ashp.org/menu/News/PharmacyNews/NewsArticle.aspx?id=3860>

## Evolution of Pharmacy Practice

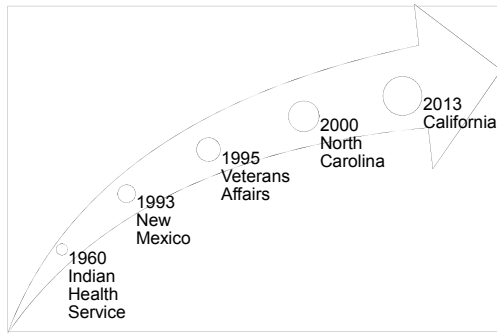


## Evolution of Pharmacy Practice

- **Collaborative Drug Therapy Management (CDTM)**
  - Agreement between a physician & pharmacist
    - Defined scope of practice
    - Settings
- **Indian Health Services**
  - Consultation rooms
  - Monitoring protocols
  - Pharmacy practitioner training program
- **New Mexico**
  - Pharmacist Prescriptive Authority Act
  - Meet identified need

Monolakis, et. al. *Am J Pharm Educ*. 2010 December 15; 74(10): S7.

## Evolution of Pharmacy Practice



## Veterans Affairs Medical Centers

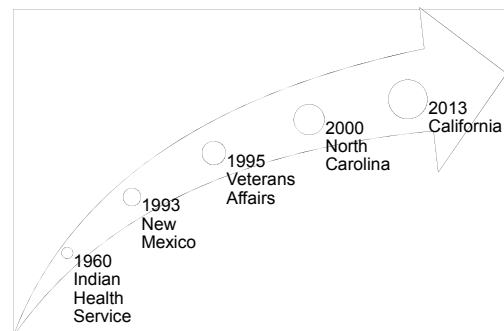
- **Veterans Affairs Medical Centers**
  - **Clinical Pharmacist Specialists (CPSs)**
  - **Mid-level providers similar to NP/PAs**
  - **Protocols allow for:**
    - **Initiation, modification and discontinuation of medications**
    - **Order and review lab tests**
    - **Administer medications**
    - **Provide preventative services**
    - **Perform limited physical exams**

## North Carolina

- **Pharmacists with additional licensure can provide higher level of care for patients**
  - **Prescriptive authority, can apply for DEA**
- **Only North Carolina's FORM program is solely pharmacy based, with pharmacy providers receiving a professional service fee per patient per quarter**
  - **3<sup>rd</sup> parties manage MTM programs**
  - **Accepts patients taking more than 11 medications each month**
- **Obtaining reimbursement for their non-dispensing services is a challenge**

Daigle L. ASHP 20081-8;.

## Evolution of Pharmacy Practice



## California

- SB 493
  - Series of 4 laws to address provider shortage
  - Pharmacist as providers
  - Expansion of Medi-Cal program
  - Advanced Practice Pharmacist
  - Requires
    - Certification
    - Post graduate residency training
    - Year experience with CDTM

<http://www.californiahealthline.org/capitol-desk/2013/8/panel-oks-amended-mid-level-provider-bills>

## California

- SB 493 – Scope of Practice
  - Administer drugs and biologics when ordered by a prescriber
  - Order and interpret tests for the purpose of monitoring and managing the efficacy and toxicity
  - Consult, train, and provide education about drug therapy and disease prevention and management
  - Provide travel recommendations per the CDC
- Provisions that may be approved later this year:
  - Initiate, adjust, and discontinue drug therapy pursuant to an order by a patient's treating prescriber and in accordance with established protocols

<http://www.californiahealthline.org/capitol-desk/2013/8/panel-oks-amended-mid-level-provider-bills>

## Nationally

- Social Security Act
  - Definition of a healthcare provider
    - MD, NP, RD, OD, social worker
  - Provider = Reimbursement
- May 16, 2012 CMS published a rule expanding the definition of medical staff
  - Pharmacists included
  - Allows non-physician providers to have privileges
    - Can request formal privileges
    - Extent of privileges are based on training and scope of practiced

Yap, Diana. CMS Expands Hospital Medical Staff Concept to Include Nonphysicians. APhA. June 6, 2013.

## Credentialing and Privileging

- TJC
  - Allows for non-physician providers to be appointed
  - Privileges must be within scope defined by law
  - Once granted practitioner is bound by bylaws
- Historically
  - Pharmacists have not participated
  - Practice determined by state law

1) Blair M, et. al. *Am J Health-Syst Pharm.* 2007;64:2372-81  
2) Galt, K. *Am J Health-Syst Pharm.* 2004;61:661-70

## Ohio Law – ORC:4729-39

- **Ambulatory consult agreement**
  - Separate agreement for each individual for a specific diagnosis
  - Agreement must be in writing
  - Agreement between MD, RPh and patient
  - Before making any changes the pharmacist must attempt to contact and confer with the MD
  - Pharmacist must send a written report of all actions taken
  - Consult may be terminated at any time

## Ohio Law – ORC:4729-39

- **Institutional consult agreement**
  - Policy must be in place
  - Agreement must be in writing and consistent with hospital's policy on consult agreements
  - Agreement must be communicated to the patient
  - Actions must be documented in the medical record
  - Communications between the pharmacist and physician must take place
  - Consult may be terminated by any party at any time

## Ohio Law – OAC:4729-29

- **Institutional policy for consult agreement must include**
  - Appropriate credentialing process for each pharmacist
  - Delineation of pharmacist scope of practice via privileges
  - Quality assurance mechanism

## Current Ohio Legislation – SB 240

- **ORC: 4729-01**
  - Consult agreement would be expanded to one or more physician
- **ORC: 4729-39**
  - Would allow pharmacists to:
    - Manage individual drug therapy
    - Order blood tests
  - Eliminate burdensome paperwork
  - Eliminate need for consult policies in institutional settings

## Legislation in Ohio toward Expanding Roles

- **SB 79: Immunization expansion: Allowing pharmacists and pharmacy interns to administer all CDC-recommended vaccines to patients who are seven years or older**
  - Rabies vaccine
- **HB 44: Pharmacists and pharmacy interns could dispense limited quantities of drugs without a written, oral or electronic prescription during a declared public health emergency.**

## Payer Recognition of Pharmacists

- **State Medicaid programs recognize pharmacists as providers**
  - 9 states are experimenting (including Ohio)
  - Provide MTM services to select patients
  - Goal to improve outcomes and lower cost
- **Share key characteristics**
  - Pharmacist based
  - CPT billing
  - Most created with College of Pharmacy faculty

Daigle L. ASHP 20081-8;.

## State of Ohio Health Programs

- **Ohio's MTM program is operated by Bureau for Children with Medical Handicaps**
  - Commenced in 2004
  - Physician prescribes services
  - 1500 eligible patients with either asthma or diabetes
- **Ohio's RxEaze program is operated by Molina Healthcare, Inc**
  - Polypharmacy MTM services
  - 5 or more chronic medications
  - 400 patients in pilot program

Daigle L. ASHP 20081-8;.

**“The role of the pharmacist has shifted from the classical ‘lick, stick, and pour’ dispensary role, to being an integrated member of the health care team directly involved in patient care.”**

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