Population Health:
The Role of the Pharmacy and New Opportunities in Practice

Erika Abraham, BS, PharmD, CDE

Clinical Pharmacy Manager, Ambulatory Care Clinical Pharmacist

Mount Sinai Health Partners

Priyasha Uppal, PharmD, BCPS, CDE

Ambulatory Care Clinical Pharmacist

Mount Sinai Beth Israel

Stephen Argiro, PharmD, BCGP

MTM Clinical Pharmacist

Mount Sinai Beth Israel

Mount Sinai

Objectives for Pharmacists

1. Describe a general overview of ambulatory practice centered on population health management
2. Discuss key activities and opportunities of the pharmacist role as a population health manager
3. Describe current barriers to initiatives for population health programs
4. Discuss the emerging use and impact of technology in the current healthcare system
5. Identify ways pharmacists can use technology to get involved in providing patient care services
6. Describe best practices in providing patient care through innovative means
7. Identify the role and importance of pharmacy home visits in transitions of care
8. Describe how to implement a Medication Therapy Management (MTM) service model as a part of a home visiting pharmacy service
9. Discuss future prospects for the involvement of pharmacy home visits in population health initiatives

Objectives for Pharmacy Technicians

1. Describe general role of a pharmacy technician in organizations centered on population health
2. Discuss key activities and opportunities of the technician role
3. Discuss current barriers to initiatives for population health programs
4. Discuss the emerging use and impact of technology in the current healthcare system
5. Identify ways pharmacy technicians can use technology to get involved in providing patient care services
6. Describe best practices in providing patient care through innovative means
7. Define the role of pharmacy technicians in a pharmacy home visit program
8. Discuss how to identify patients who may benefit from pharmacy home visits
9. Identify pertinent patient information that should be obtained prior to visit

Population Health

IF OUR BEDS
ARE FILLED,
IT MEANS WE'VE FAILED.

Can Mount Sinai be serious? The answer is a resounding yes. In fact, we couldn't be more serious.

Mount Sinai's number one mission is to keep people out of the hospital. We're focused on population health management, as opposed to the traditional fee-for-service medicine. So instead of receiving care that's isolated and intermittent, patients receive care that's continuous and coordinated, much of it outside of the traditional hospital setting.

Thus the tremendous emphasis on wellness programs designed to help people stop smoking, lose weight and battle obesity, lower their blood pressure and reduce the risk of a heart attack. By being as proactive as possible, patients can better maintain their health and avoid disease.

Our Mobile Acute Care Team will treat patients at home who would otherwise require a hospital admission for certain conditions. The core team involves physicians, nurse practitioners, registered nurses, social workers, community paramedics, care coaches, physical therapists, occupational therapists, speech therapists, and home health aides.

Meanwhile, Mount Sinai's Preventable Admissions Care Team provides transitional care services to patients at high risk for readmission. After comprehensive bedside assessment, social workers partner with patients, family caregivers and healthcare providers to identify known risks such as problems with medication management and provide continuing support after discharge.

It's a sweeping change in the way that health care is delivered. And with the new system comes a new way to measure success. The number of empty beds.

mountsinai.org/myhealth

Mount Sinai

Image from: www.mountsinai.org

Mount Sinai Health Partners (MSHP)

~2,400 full time faculty physicians

About 1,200 voluntary physicians

7 hospitals spanning Manhattan, Brooklyn, and Queens

Geographic access and coverage across the five boroughs, Long Island, and beyond

Integration with ASCs & FQHCs *across New York City*

Mount Sinai Health Partners

Over 300 community locations

Committed to a vision of transforming healthcare in New York towards value-based care and population health

Population Health

"Health outcomes of a group of individuals, including the distribution of health outcomes within the group"

Morbidity, mortality	Health status	Functional status
Disease burden	Behavioral factors	Metabolic factors

Kindig D, Stoddart G. What is population health?

Population Health

Goal: To provide high-quality healthcare and improve patient satisfaction

Care provided employing best practices based on current scientific evidence

Reimbursement based on delivery of efficient care to improve patients' health
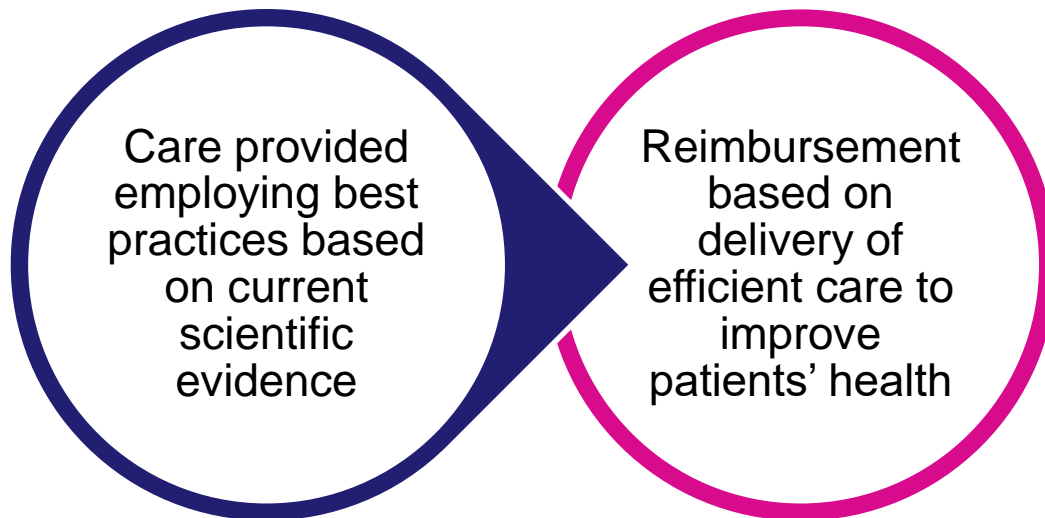
Population Health Capabilities

Value-Based Care

Quality

- Clinical gap closures
- Clinically effective care

Cost

- Preventable ED visits and inpatient admissions
- Medication selection

Ongoing health improvement across patient populations
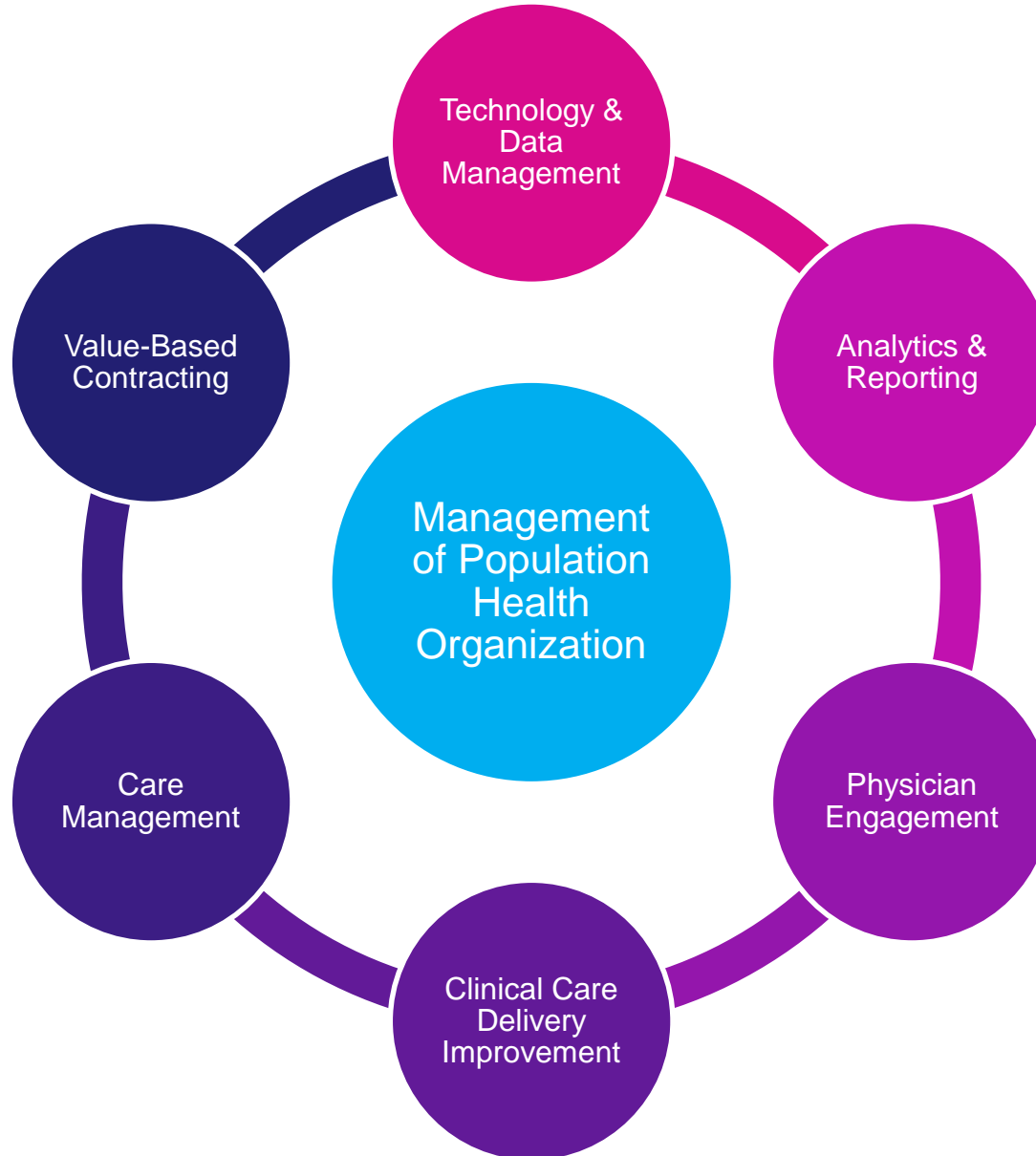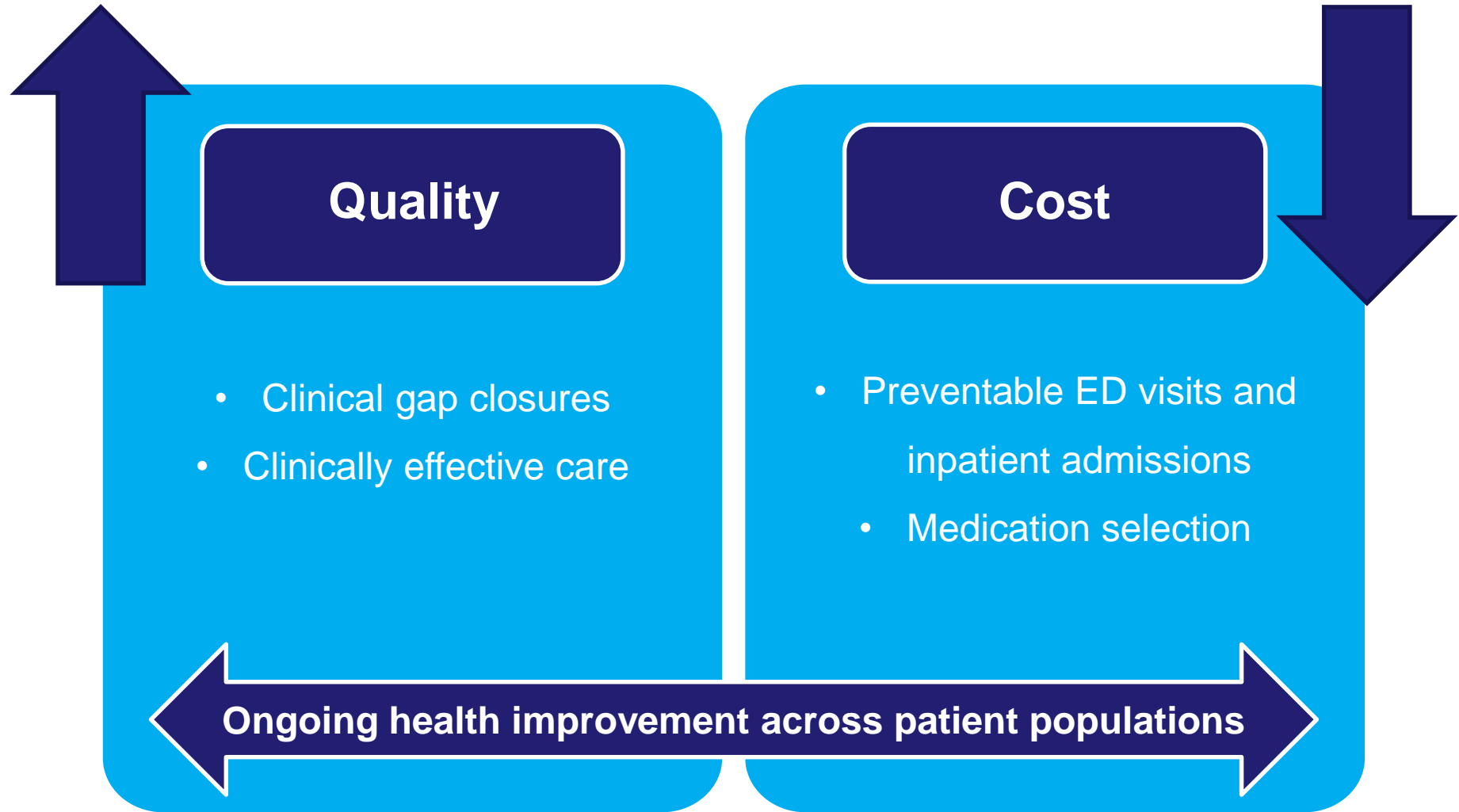
Care Models Before Value-Based Care

Missing Pharmacist

Primary Care

Specialist

Transportation

Member

Care Manager

Home Health

Behavioral Health

Community Providers

Social Services
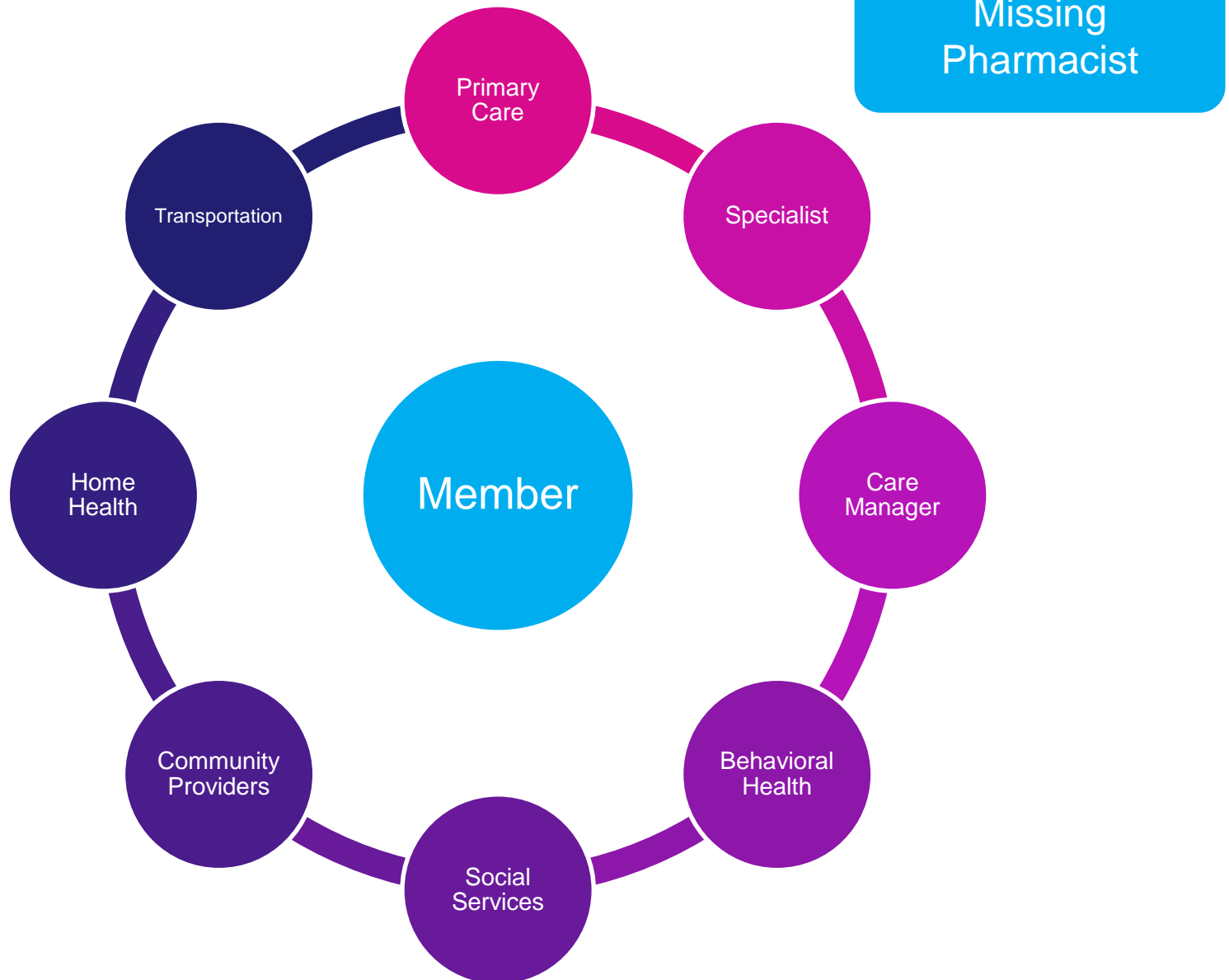
Nonadherence

Time

Cost

Education

Relationships

Patient-Specific Barriers

National Health Expenditure

▸ **2017 – $3.5 trillion**

  – 17.9% of Gross Domestic Product

  – ↑ Medicare and Medicaid spending – **37% of NHE**

  – ↑ Out of pocket spending – **10% of NHE**

  – ↑ Prescription drug spending

▸ **Projections**

  – Spending growth ~5.5%/year

  – ↑ Prices for healthcare goods and services

  – Medicare spending > Medicaid, private health insurance

$10,739

Pharmacy in Population Health

Focus on clinical quality improvements

Accessible chronic disease management resource

Expanded access to primary care
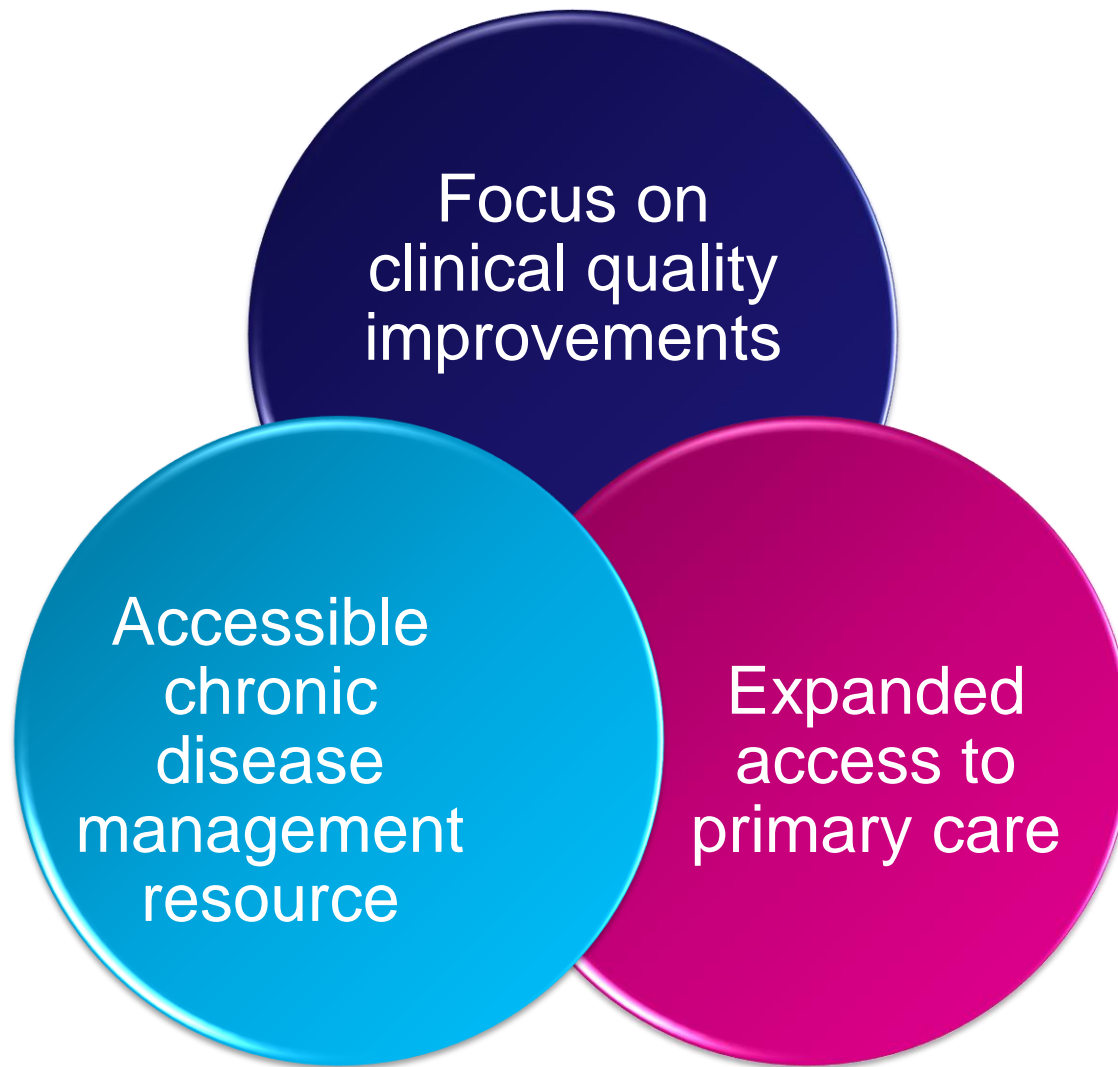
Pharmacy in Population Health

▸ **Patient-centered medical home**

– Care coordination through primary care services

– Comprehensive care

– Use of technology

▸ **Pharmacist role in**

– Medication use

– Medication adherence

– Outcomes
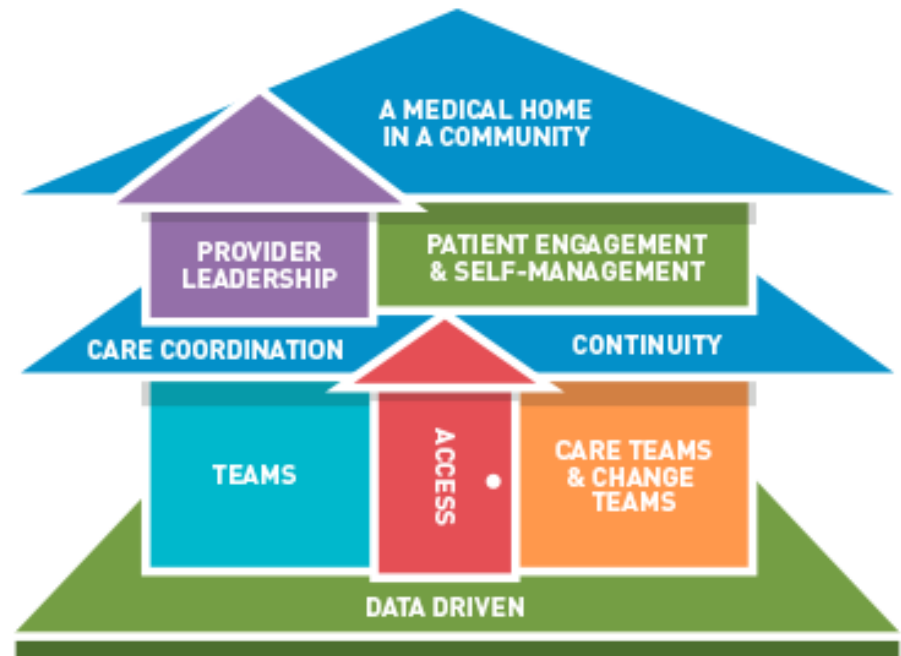
Mount Sinai Health System Ambulatory Care Pharmacy Services

Inflammatory Bowel Disease

MTM Home Visits

Respiratory

Internal Medicine Transitions of Care

Primary Care

Endocrine

Nephrology

Cardiology
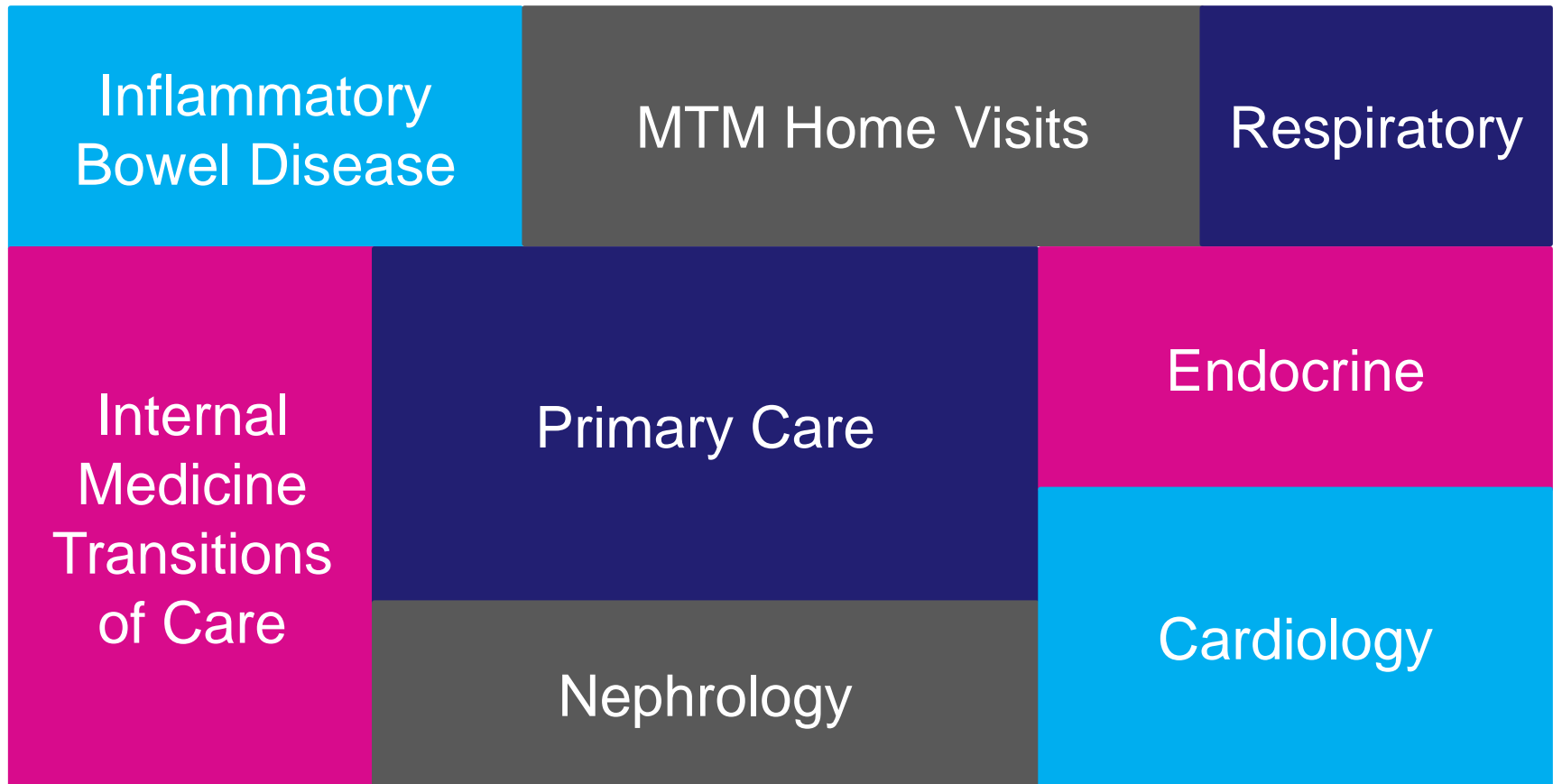
MSHP Primary Care Pharmacy Services

- ‣ Diabetes

- ‣ Hypertension

- ‣ Asthma/COPD

- ‣ Polypharmacy, Medication Reconciliation

- ‣ Annual Wellness Visits

CDTM established

MSHP Primary Care Pharmacy Services

Patient Identification

- Provider referrals
- Care coordinator referrals
- Population health patient identification tools

Patient Enrolled

- Patient contacted for scheduling of initial appointment

PharmD Visits

- Initial appointment conducted, follow-ups scheduled and conducted as in-person or telemonitoring visits
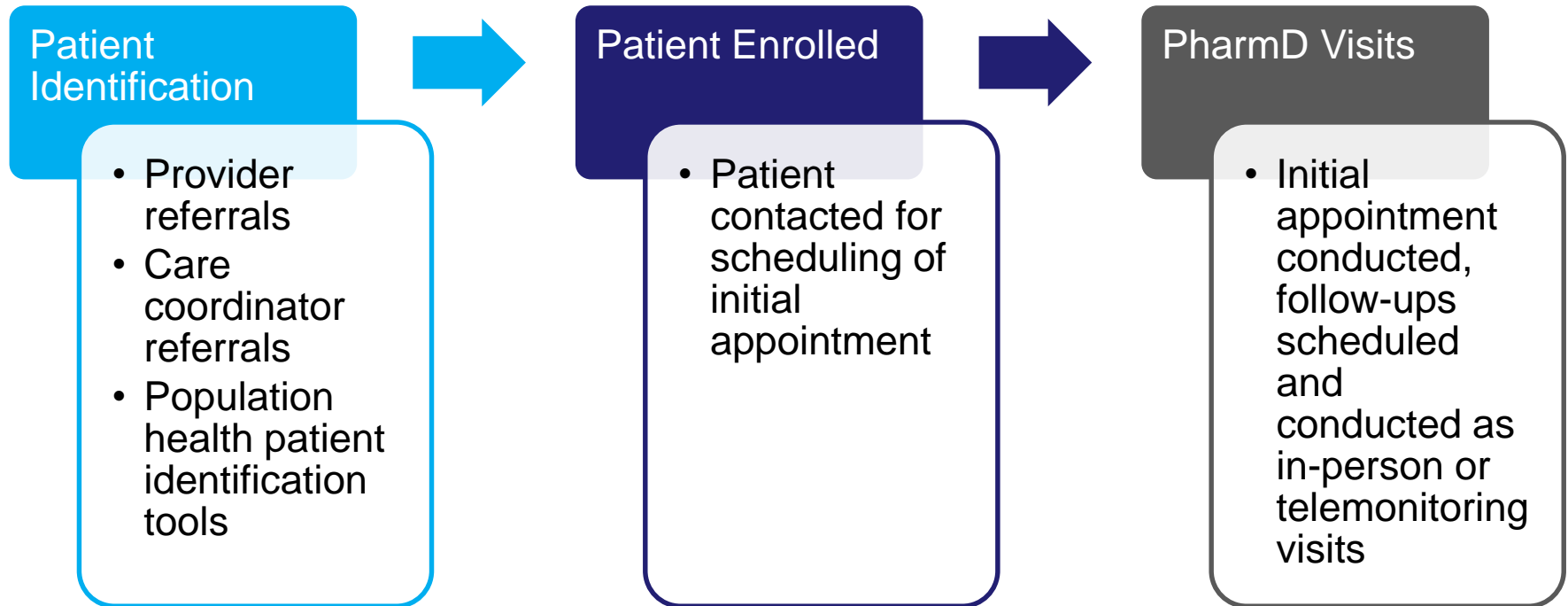
MSHP Primary Care Pharmacy Services

▸ **Medication reconciliation and review**

  – Updating electronic medical record medication list

▸ **Assessment of current health status**

  – Achievement of therapeutic goals

  – Functional status, quality of life

▸ **Identification of preventative care needs**

  – Immunizations, screenings, etc.

▸ **Individualized goal-setting**

▸ **Care plan preparation and execution**

Interventions

Medication initiation	**Patient education: disease state**	**Medication reconciliation**
Medication discontinuation	**Patient education: self-management strategies, lifestyle counseling**	**Telephonic outreach to pharmacy**
Dosage adjustment	**Device teaching**	**Blisterpack, pill tray initiation**
Therapeutic interchange	**E-prescribing: new meds & refills**	**Referrals**
Medication adherence barrier identified & resolved	**Medication-related monitoring**	**Coordination of care**

MSHP Primary Care Pharmacy Services

Embedded clinical pharmacy services

- High-volume faculty and resident practice sites
- Large concentration of patients with uncontrolled chronic diseases

Clinical support for providers

- Medication management and chronic disease care plan execution
- Clinical coordination across care team members

Clinical support for MSHP

- Clinic-based resource for high-risk patients with complex needs
- Greater opportunity for measure achievements and gap closures

Support system for patients

- Patients report higher satisfaction when pharmacists are offered as part of their clinical team

Value-Based Care: Leveraging Pharmacy

Priorities	Quality	+	Patient & Provider Satisfaction	+	Cost / Utilization
Ambulatory Clinical Pharmacists Delivered Support	✓ Medication Optimization ✓ Chronic Disease Management ✓ AWVs* ✓ Complex Medication Reconciliation ✓ Medication Adherence		✓ Improved patient understanding & self-management skills ✓ Personalized patient care experience ✓ Coordination with care management team		✓ Decrease preventable visits related to chronic diseases and complications ✓ MTM services ✓ Medication clinical support

*AWV = Annual Wellness Visit

Technology in Healthcare

Telehealth – Definition

Badowski ME, Walker S, Bacchus S, . Providing comprehensive medication management in telehealth. *Pharmacotherapy*. 2018;38:2.

Telehealth – History

First Radiological Images Sent Via Telephone

American Recovery and Reinvestment Act created funds for HITECH (Health Information for Economic and Clinical Health)

The Health Resources and Services Administration received $16 million to expand access to telehealth services in rural areas

1993

2010

1948

2009

Founding of the American Telemedicine Association

CMS Rules on Meaningful Use of Electronic Health Records

2016

IOM (Institute of Medicine). 2012. The role of telehealth in an evolving health care environment: Workshop summary. Washington, DC: The National Academies Press

Use of Telehealth

- Currently, ~200 telemedicine networks with ~3,500 service sites exist in the US

- In 2011, the Veterans Health Administration delivered over 300,000 remote consultations using telemedicine

- More than 50% of U.S. hospitals now use some form of telemedicine

- Nationwide survey showed that 3.5% of patients had utilized a video consultation, but 52% were willing to

American Telemedicine Association
Welch, Brandon M et al. Patient preferences for direct-to-consumer telemedicine services: a nationwide survey. BMC health services research. 2017;17(1):784.

Big Data in Healthcare

- Health data accumulated from multiple sources available in high volume
- Technology converts this data into useful, actionable information
- Healthcare industry has growing interested in Big Data
  - Shift from pay-for-service model to a value-based care model
  - Improve medical and financial decision making
  - Increase efficiency in delivering quality evidence-based healthcare

Sources of Big Data in Health Care

Government agencies · Patient portals · Research studies · Payer records · Generic databases · BIG DATA IN HEALTH CARE · Smart phones · Electronic health records (EHR) · Wearable devices · Search engine data · Public records
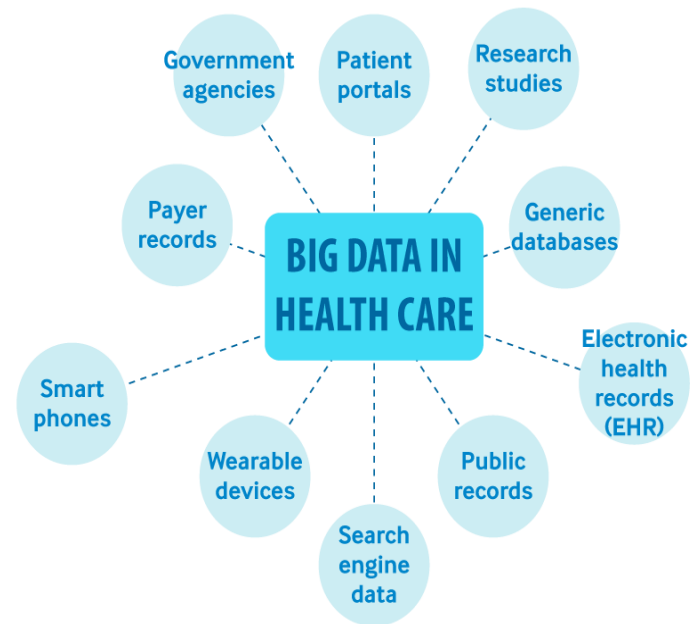
NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society

NEJM Catalyst. Healthcare Big Data and the Promise of Value-Based Care. NEJM Group. 1 Jan 2018. https://catalyst.nejm.org/big-data-healthcare/

Big Data in Healthcare Examples

- Improve health, diagnostic, errors, and cost

  - FitBit partnered with UHC to reward members for exercising regularly

  - OneDrop ties data from multiple sources (nutrition trackers, food libraries, Dexcom) for DM management

  - Apple's HealthKit, CareKit, ResearchKit

  - Apple Heart Study – ongoing

  - Precision Medicine Initiative

  - MedAware uses big data to alert for potential prescription errors

  - Analytic technology to identify high users of healthcare

AND MORE!

NEJM Catalyst. Healthcare Big Data and the Promise of Value-Based Care. NEJM Group. 1 Jan 2018. https://catalyst.nejm.org/big-data-healthcare/
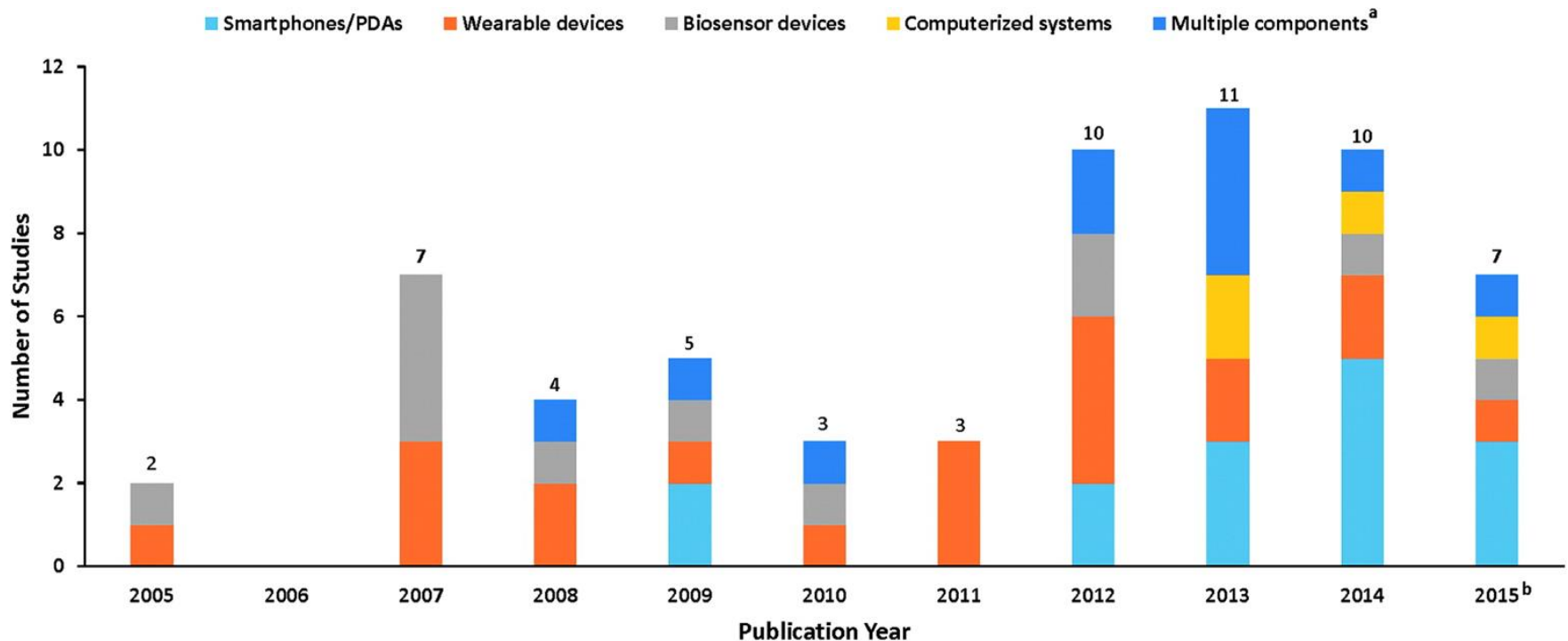
Telehealth Success Stories

- **Intermountain Healthcare**
  - Virtual visits resulted in a total claims cost reduction of $367 and patients saw an average savings of $146.93 per visit with telehealth

- **BayCare System System**
  - Virtual wound care platform to reduce wait time from weeks to hours

- **Beacon Health System**
  - Platform for urgent care, nutrition and behavioral health services to reduce wait time

- **Mercy Virtual Care Center**
  - Digital-only hospital specializing in telehealth nationally resulting in cost savings

American Hospital Association. Telehealth: Delivering the Right Care, at the Right Place, at the Right Time. July 2017. https://www.aha.org/system/files/content/17/telehealth-case-examples.pdf

Remote Patient Monitoring (RPM)

- Use of digital technology to collect health data from individuals and electronically transmit the information to healthcare providers
- Examples: blood pressure, blood glucose, electrocardiogram, fluid status, INR, oxygen saturation, pulse, spirometry, temperature, and weight

Vegesna, A., Tran, M., Angelaccio, M. & Arcona, S. Remote patient monitoring via non-invasive digital technologies: a systematic review. *Telemed. J. E. Health* 23, 3–17 (2017).

RPM – Pharmacist-Led Services

Study	Patient Population	Study Design/ Duration	Intervention	Comparator	Key Findings
Green et al	Uncontrolled hypertension (n=730)	RCT / 12 month	Home BP monitor and web-based interaction with PharmD	1. Usual Care 2. Home BP/Web interaction with physician	BP improved 25% more with PharmD intervention
Shane-McWhorter et al	Uncontrolled diabetes and/or hypertension (n=109)	Pre-Post observational/ 7 months	Authentidate™ Electronic House Call™ or Interactive Voice Response system with BP monitor, patient glucometer, electronic digital scale	None	Decrease in mean Hgba1c, BP, LDL post-intervention
Aberger EW et al	Uncontrolled hypertension (n=66)	Pre-Post observational/ 1 month	Electronic, uploadable BP monitor and web-based interaction with PharmD	None	Decrease in mean BP post-intervention

Green BB et al. Effectiveness of home blood pressure monitoring, Web communication, and pharmacist care on hypertension control: A randomized controlled trial. JAMA 2008;299:2857–2867.
Shane-McWhorter L et al. The Utah Remote Monitoring Project: Improving health care one patient at a time. Diabetes Technol Ther2014;16:653–660
Aberger EW et al. Enhancing patient engagement and blood pressure management for renal transplant recipients via home electronic monitoring and web-enabled collaborative care. Telemed J E Health 2014;20:850–4

Video Consultation – Pharmacist-Led Services

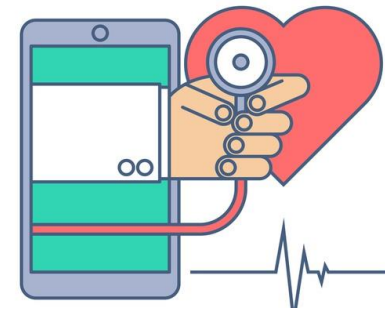Two-way interactive audio-video technology which connects users in a real-time encounter

Study	Patient Population	Study Design/ Duration	Intervention	Comparator Group	Key Findings
Young et al (2014)	Inmates in a correctional facility with HIV	Cohort study/ 6 months	Scheduled Video Consultation with multidisciplinary team	Usual Care	Improved virologic suppression, viral load, and CD4 values
Baker et al (2019)	Uncontrolled Type 2 Diabetes	Cohort study / 6 months	Clinical video telehealth (CVT) with PharmD	None	Reduction in HgbA1c

Young JD et al. Improved virologic suppression with HIV subspecialty care in a large prison system using telemedicine: an observational study with historical controls. Clin Infect Dis. 2014;59:123–126.

Baker JW et al. Utilizing clinical video telehealth to improve access and optimize pharmacists' role in diabetes management. Journal of the American Pharmacists Association , Volume 59 , Issue 2 , S63 - S66

Telephone Services – Pharmacist-Led Services

- Systematic review evaluating impact of clinical pharmacists services delivered via telemedicine in ambulatory care setting

  - Majority mode of communication was telephone

  - Largely chronic care disease management

  - Higher positive impact rate observed for scheduled and continuous models compared to responsive/reactive

Niznik JD et al. Impact of clinical pharmacist services delivered via telemedicine in the outpatient or ambulatory care setting: A systematic review. Res Social Adm Pharm 2017. doi: 10.1016/j.sapharm.2017.10.011

Mobile Health – (mHealth)

- Use of mobile and wireless technologies to support the achievement of health objectives

- Examples in chronic disease management

  - Bluetooth connected wireless inflation blood pressure cuffs
    - Withings, iHealthLabs, IcMe

  - Diabetes glucometers
    - iBG Star, Dario, OneDrop

  - Medication adherence
    - GlowCap, Clever Cap, AiCure
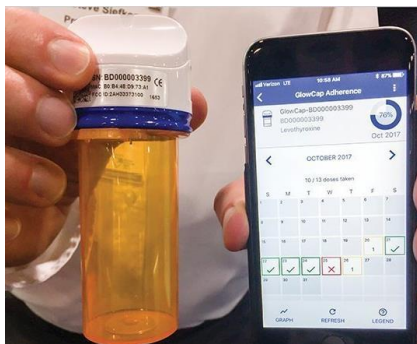
Telehealth – Provider to Provider

- Interoperability within health systems

  - Allows for seamless communication between providers

- Secure video conferencing

- Secure messaging platforms

- E-Consults

  - Systematic review shows that overall impact on access measures, acceptability, cost, and provider satisfaction is positive

Liddy, C et al. A systematic review of asynchronous, provider-to-provider, electronic consultation services to improve access to specialty care available worldwide. *Telemed J E Health*. Epub ahead of print 21 June 2018.

Telehealth – Reimbursement

- New York State Telehealth Parity Law

  - Requires commercial, Medicaid and state employee health plans to cover telehealth services

  - Does NOT require coverage for store-and-forward and remote patient monitoring telehealth

- Medicare CMS update 2019

  - Now reimbursing for virtual check-ins, remote evaluation of pre-recorded patient information and inter-professional internet consultation - no restrictions

  - New CPT codes for Chronic Care Remote Physiologic Monitoring – no restrictions

    - Ex: CPT code 99457: "Remote physiologic monitoring treatment management services, 20 minutes or more of clinical staff/physician/other qualified healthcare professional time in a calendar month requiring interactive communication with the patient/caregiver during the month."
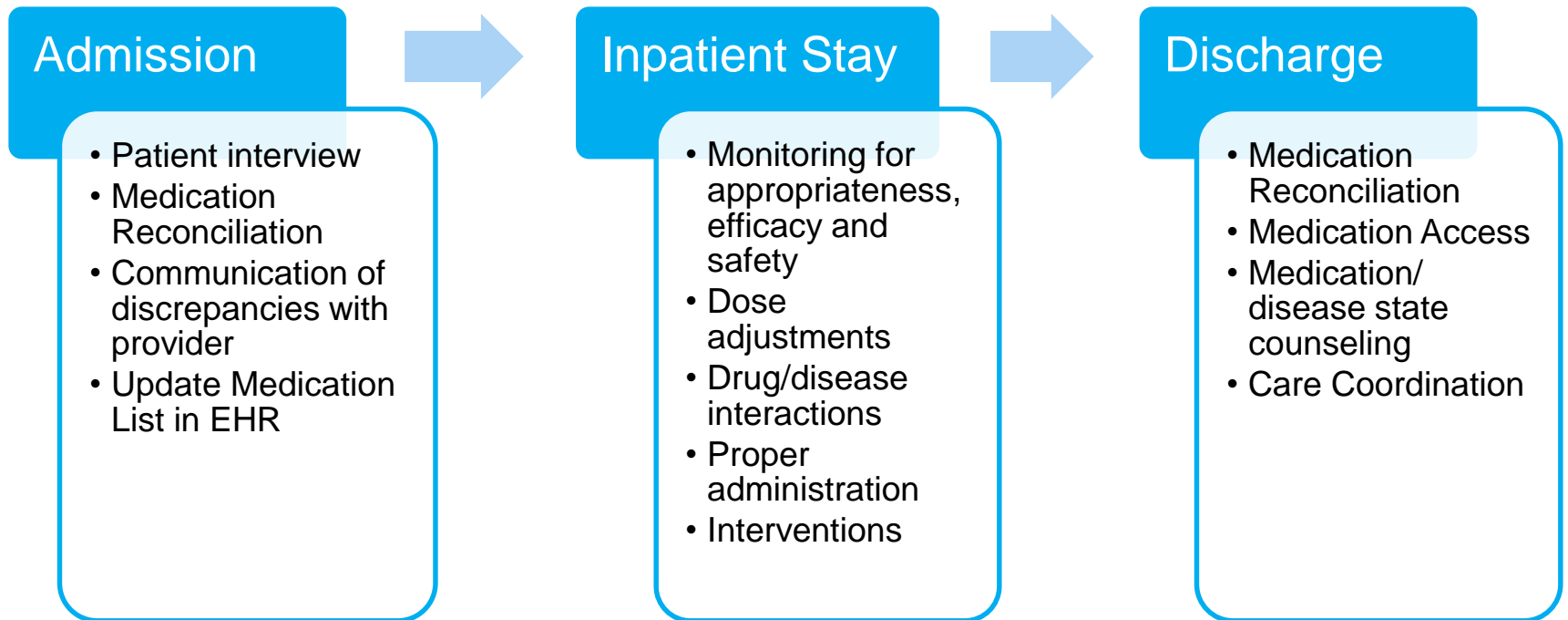
Mount Sinai Health System

- Telemedicine/Remote Patient Monitoring
  - Clinical pharmacists conduct telephone visits for chronic disease management (diabetes, hypertension, smoking cessation)
  - Livongo for diabetes management used by Diabetes Alliance CDE's

- mHealth
  - MountSinaiNow - phone or video visit for employee
  - Text for patient adherence

- Big Data analytics
  - Lumeris for value-based care delivery

- Provider-to-Provider

  - Pharmacist E-Consults (hypertension, medication management, mental health)

  - Cureatr for secure messaging

Home-Based Care

Implementing a Home Visiting Pharmacist Program

Transitions of Care

Admission
- Patient interview
- Medication Reconciliation
- Communication of discrepancies with provider
- Update Medication List in EHR

Inpatient Stay
- Monitoring for appropriateness, efficacy and safety
- Dose adjustments
- Drug/disease interactions
- Proper administration
- Interventions

Discharge
- Medication Reconciliation
- Medication Access
- Medication/ disease state counseling
- Care Coordination

Transitions of Care

Hospital

TRANSITIONAL CARE CONTINUITY

Skilled Nursing Facility

Rehabilitation Center

Home

What Happens at Home?

2003	2005
• 19% of patients had adverse reaction after discharge • 66% of these were drug events	• 11% ADE • 27% preventable • Risk for ADE increased as number of prescriptions at discharge increased

https://www.pathologylabinpune.in/2018/08/what-is-transition-care-or-followup-care.html. Accessed 3/8/19

Forster et al *Ann Intern Med* 2003; 138(3):161-167

Forster et al. J Gen Intern Med. 2005 April; 20(4): 317-323

Transitions of Care Activities

▸ Medication reconciliation

▸ Discharge medication counseling

▸ Follow-up phone calls

▸ Post-discharge clinic visits/medication therapy management (MTM) sessions

Phatak, et al. J Hosp Med. 2016 January; 11(1):39-44

Medication Therapy Management

▸ "A distinct service or group of services that optimize therapeutic outcomes for individual patients. Medication Therapy Management services are independent of, but can occur in conjunction with the provision of a medication product"

Burns et al. J Am Pharm Assoc (2003). 2008 May-Jun;48(3):341-53

Core Elements of MTM

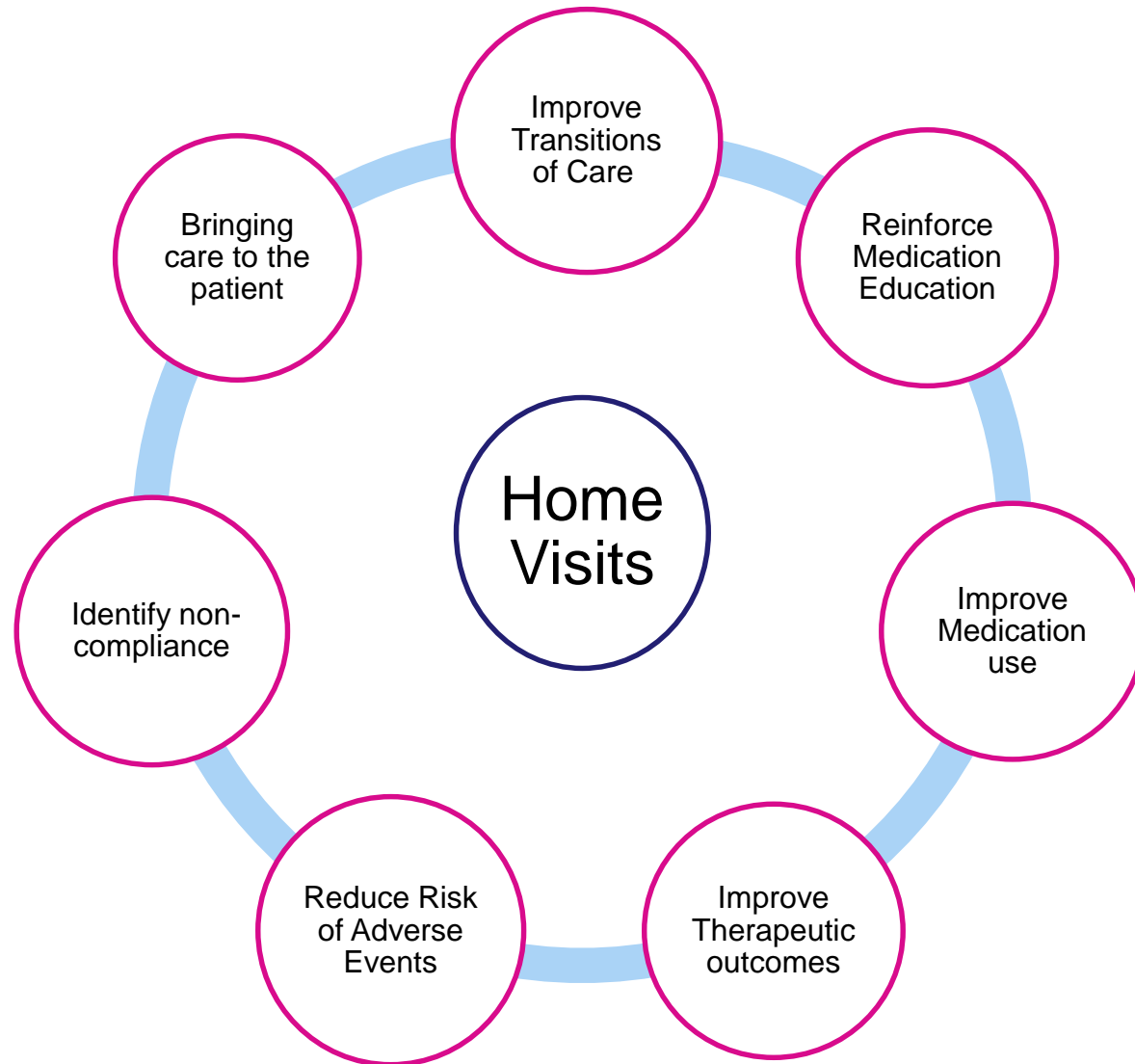| Medication Therapy Review (MTR)	Personal Medication Record (PMR)	Medication-related Action Plan (MAP)

Intervention/ Referral	Documentation and Follow-up

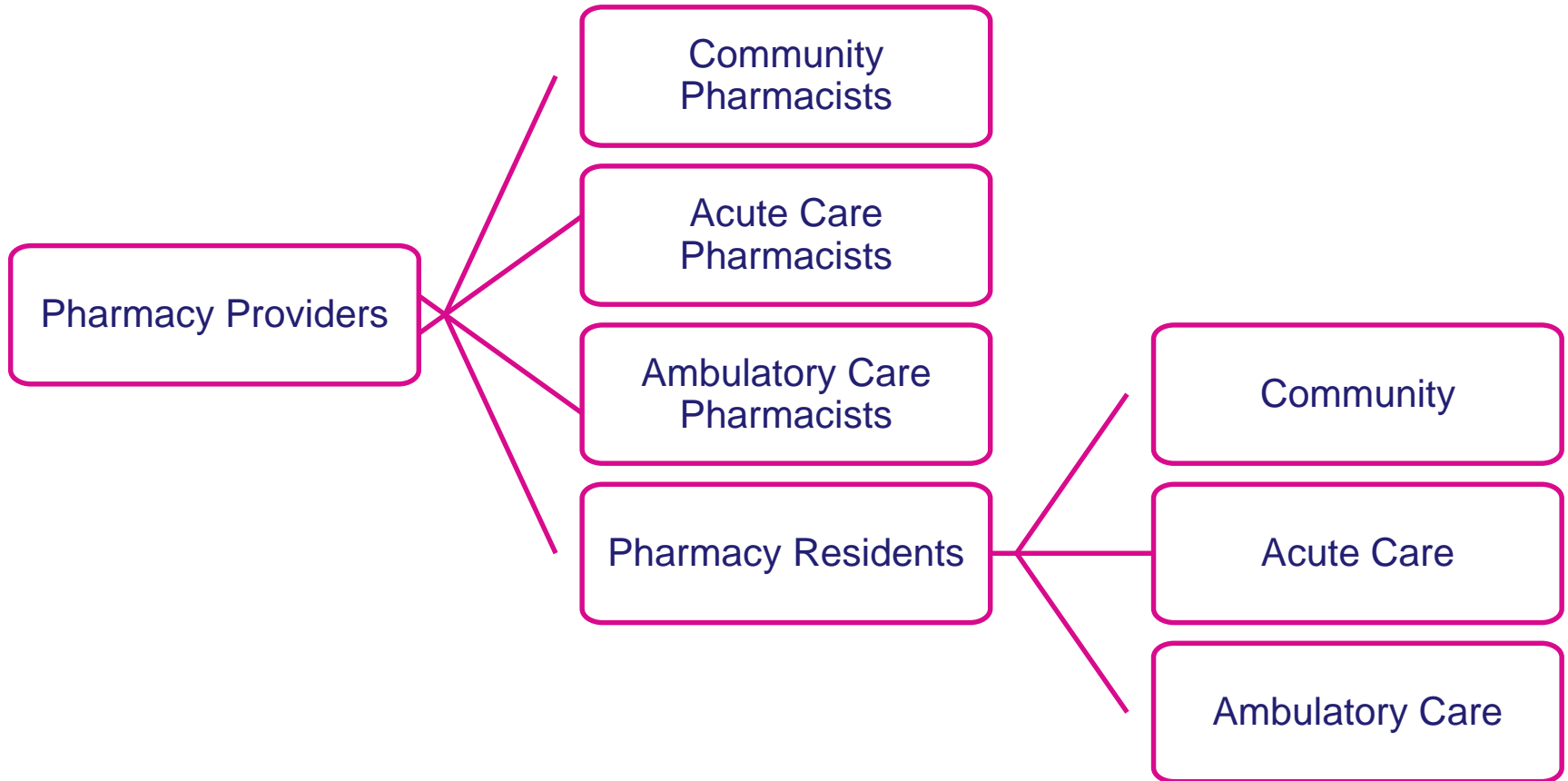Burns et al. J Am Pharm Assoc (2003). 2008 May-Jun;48(3):341-53

Barriers to Traditional MTM Services

- Lack of pharmacists resources

- Patient appointment non-compliance

- Caregiver unavailability

- Patients refusal/forgetting to bring medications

Reidt, et al. *J Am Pharm Assoc* 2016 Mar-Apr; 56(2):178-83

Benefits of Home Visits

Forster et al. *Ann Intern Med.* 2003 Feb 4.; 138(3):161-67
Reidt, et al. *Home Healthcare Nurse.* February 2013; 31(2): 80-87

Who Can Perform Home Visits?

Home Visits:
What is the Evidence?

Populations Studied

- Medicare Advantage

- High risk medications

- Post-discharge

- Clinic referral

- Heart failure

Australia

Home Medicines Review – Australia

	Primary Care	Residential Aged Care Facilities	Government Funded	Referral by GP	Goal: Achieve Quality Use of Medicines (QUM)	Pharmacist Certification Required
Home Medicines Review	✓		✓	✓	✓	✓
Residential Medication Management Review		✓	✓	✓	✓	✓

Key Steps in Process

Step	Home Medicines Review	Residential Medication Management Review
1	Identification of patient, based on need	Identification of the resident in the aged care facility, based on need
2	Referral of the patient to their preferred pharmacy or pharmacist by GP	Referral of the resident to RMMR service provider
3	Pharmacist visits patient at home and obtains comprehensive medication history	Pharmacist gathers resident information from resident, family or next of kin, aged care facility staff members, and resident's case notes
4	Pharmacist documents their medication review findings and recommendations in a report for the GP	Pharmacist documents their medication review findings and recommendations in a report for the GP and notes that this has been completed on the medication chart and resident's case notes
5	GP and patient formulate a medication plan based on the pharmacist medication review report	Post-RMMR discussion between pharmacist and GP, preferably face-to-face

Hennepin County Medical Center

Background

Hennepin Health

- Minneapolis, MN
- Pharmacists in 18 clinics
- 10,000 MTM encounters annually
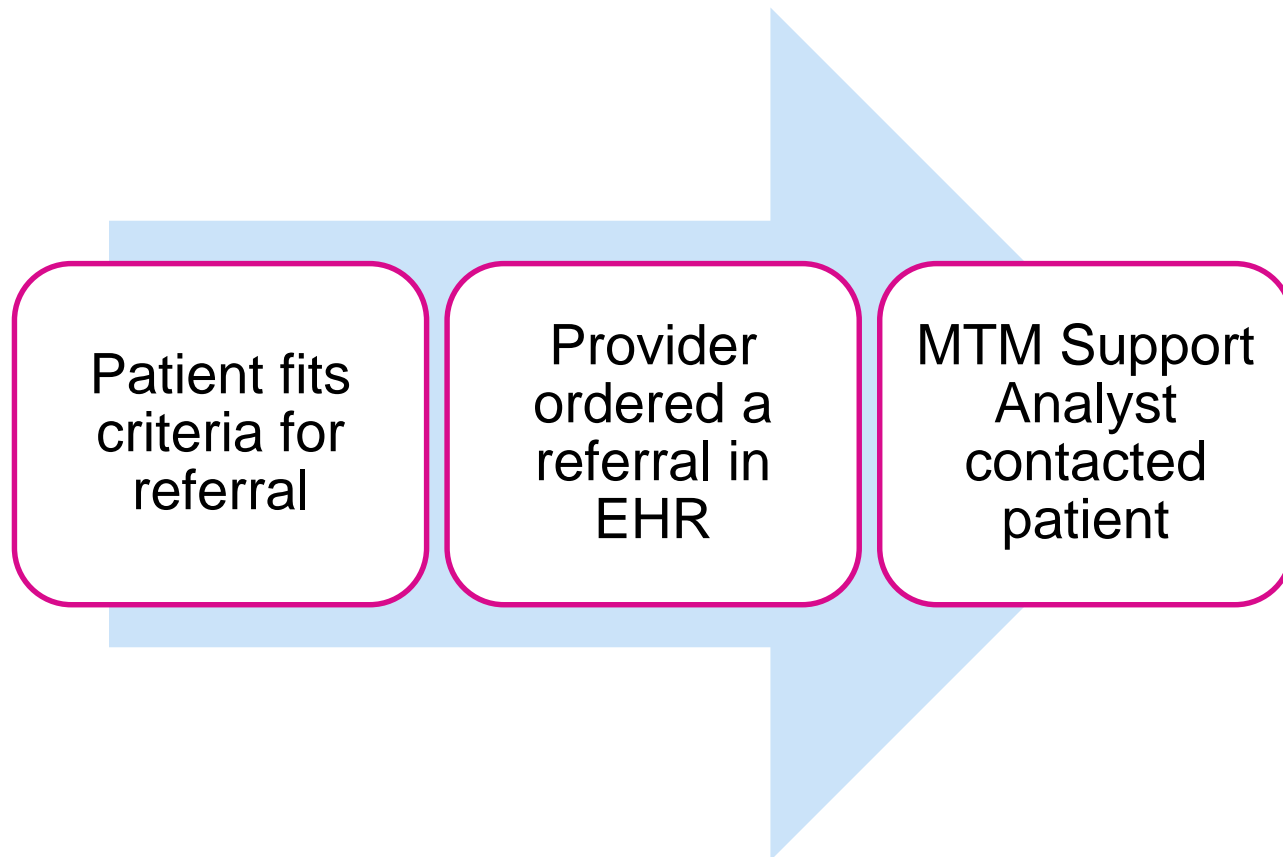- Full time MTM Support Analyst

Pharmacist Training

- Credentialing/Privileging
- Credentialed through insurance plans

Services Provided

- Comprehensive Medication Review
- Targeted disease state management
- Therapeutic drug monitoring
- Patient education
- Adherence support

Reidt, et al. *J Am Pharm Assoc* 2016 Mar-Apr; 56(2):178-83

Referral Process

Patient fits criteria for referral → Provider ordered a referral in EHR → MTM Support Analyst contacted patient

Reidt, et al. *J Am Pharm Assoc* 2016 Mar-Apr; 56(2):178-83

Program Referral

Referrals by Provider	
Clinic	**# of Referrals (%)**
Physician	27 (51)
NP, PA	11 (21)
Pharmacist	12 (23)
RN	1 (2)
Patient self-referral	2 (4)
Referrals by Clinic	
Clinic	**# of Referrals (%)**
Internal Medicine	33 (62)
Senior Care	12 (23)
Coordinated Care	7 (13)
Psychology	1 (2)

Majority of referrals were due to either patient non-adherence, transportation barriers or that a medication reconciliation was required for a home health care nurse

Reidt, et al. *J Am Pharm Assoc* 2016 Mar-Apr; 56(2):178-83

Results

Medication Related Problems	n (%)
Indication	35 (18)
Effectiveness	44(22)
Safety	39 (20)
Compliance	80 (40)
Total	198

Takeaway

- Opportunity to bridge communication gaps

- Offer chance for caregivers to be involved

- Pharmacist ability to observe environmental factors

- Pharmacists as a bridge to ambulatory clinic visits

Reidt, et al. *J Am Pharm Assoc* 2016 Mar-Apr; 56(2):178-83

Patients Perception of Home Visits

Patients Perception

Referral

Referred by Harris County Area Agency on Aging (HCAAA)

Home Visit

1. Medication Review

2. Medication Reconciliation

3. Medication Action Plan

4. Emergency Preparedness Plan

5. Documentation and Referral

Survey

1. Patient satisfaction

2. Opinion of Knowledge level gained
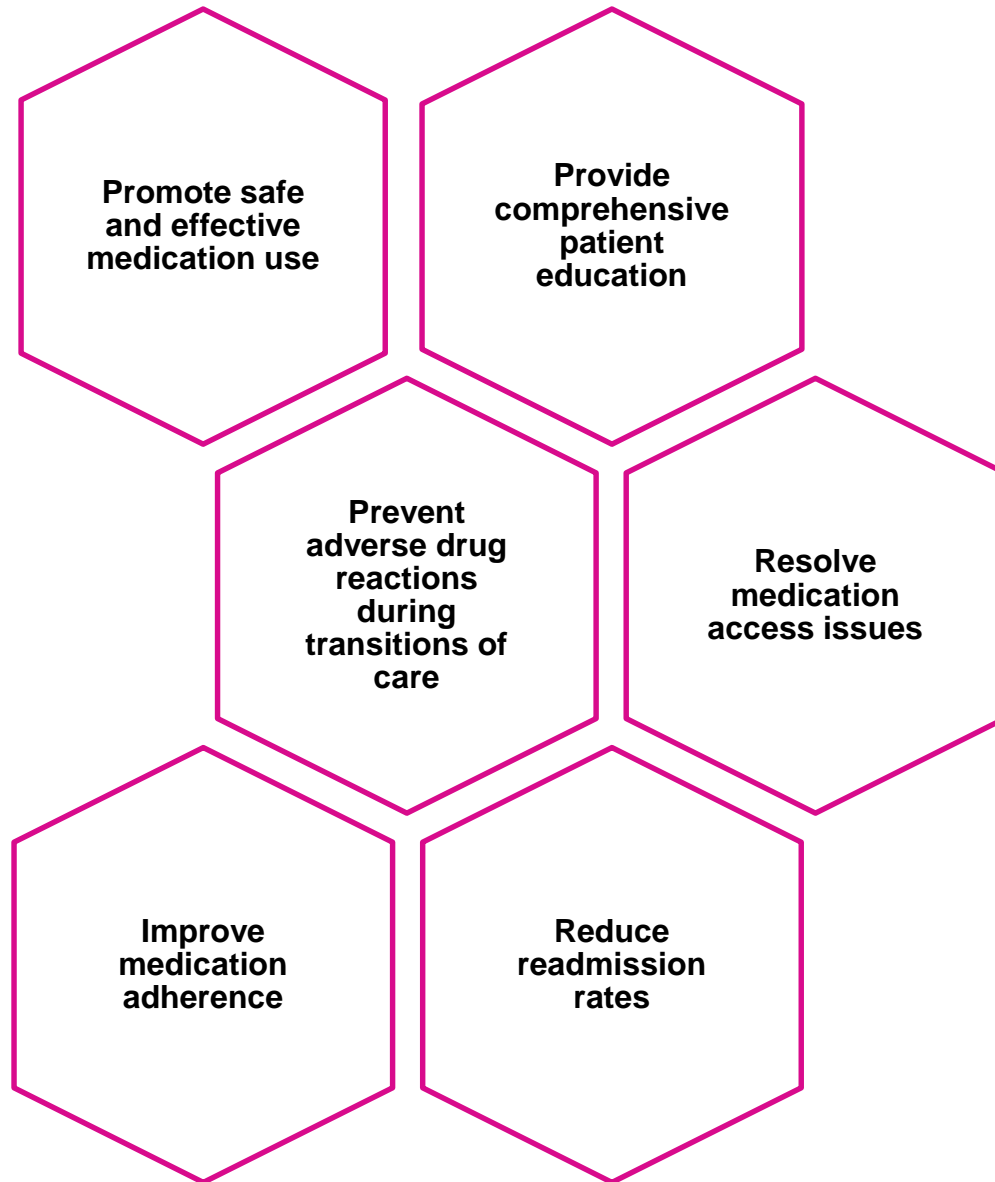
3. Impact counseling would have on physician visits

Moultry AM, Poon IO. Consult Pharm. 2008 Nov; 23(11): 877-885

Program Assessment

Survey Question	# of Responses	%
Knowledge of medication before home visit *Very Knowledgeable* *Somewhat Knowledgeable* *Not Knowledgeable*	12 5 1	66.7 27.8 5.6
Knowledge of medication after home visit Very Knowledgeable Somewhat Knowledgeable Not Knowledgeable	13 5 0	72.2 27.8 0
Received explanation of importance of dietary and lifestyle modifications *Yes* *No*	13 5	72.2 27.8
Suggested Frequency of Drug Regimen Review *Every 6 months* *Every12 months* *As needed* *With every change of med*	6 4 3 5	33.3 22.2 16.7 27.8

Survey Question	# of Responses	%
Satisfaction with service *Very satisfied* *Somewhat satisfied* *Not satisfied*	13 4 1	72.2 22.2 5.6
Will recommend service to others *Strongly recommend* *Have doubts about recommending* *Will advise others against it*	18 0 0	100 0 0
Preferred Location of Service *Home* *Community Pharmacy* *Other*	15 3 0	83.3 16.7 0
Feels service would reduce doctor visits *Yes* *No*	11 4	73.3 26.7

Moultry AM, Poon IO. Consult Pharm. 2008 Nov; 23(11): 877-885

Visiting Pharmacist Program at MSBI

Goals of Visiting Pharmacist Program

Promote safe and effective medication use

Provide comprehensive patient education

Prevent adverse drug reactions during transitions of care

Resolve medication access issues

Improve medication adherence

Reduce readmission rates

Program Eligibility

Inclusion Criteria		Exclusion Criteria
Diagnosis	COPD	Homeless
	Heart Failure	
	Myocardial Infarction	
	Uncontrolled HTN	
	Diabetes	
Discharged from MSBI		Active Drug User
History of Non-compliance		Out of Area
		Discharged to Skilled Nursing Facility

Referrals at MSBI

- Telephone or face-to-face referrals

- Admissions report generated from ED daily

- Providers who refer to program

  - Attending Physicians

  - Resident Physicians

  - Unit-based pharmacists

  - Transitions of Care pharmacists

  - Registered Nurses

  - Nurse Practitioners

  - Hospital at Home Program Admitting Physician

Scheduling and Pre-Visit Planning

Prior to discharge

- Patient counseling
- Appointment scheduling (5-7 days after discharge)
- Get follow-up phone number address
- Provide pharmacist contact information

Prior to visit

- Call patient to confirm appointment
- Confirm address
- Ask about potential barriers to entering home
- Address potential safety issues
- Review medication records

The Visit

Visit Components

- Core Components of MTM Session

    - Complete Medication Review (CMR)

    - Personal Medication Record (PMR) – Delivered via mail

    - Medication Action Plan (MAP) – Delivered via mail

    - Documentation

    - Intervention

- Medication Reconciliation

- Device/Inhaler education

- Care coordination

- Resolving medication access issues

Comprehensive Medication Review

- Medication Reconciliation
  - Call to pharmacy
  - Patient interview
  - Hospital Discharge Instructions
  - EHR records (if available)
  - Call to providers (if necessary)
- Identification of Medication Related Problems (MRPs)
- Medication Counseling

Personal Medication Record

PERSONAL MEDICATION RECORD

Name	DOB
Address	Date
	Phone
My Pharmacy:	

DRUG ALLERGIES:

In the morning I take:

Drug Name	Dose	How many?	What it's for	Special Instructions

In the afternoon I take:

Drug Name	Dose	How many?	What it's for	Special Instructions

At bedtime I take:

Drug Name	Dose	How many?	What it's for	Special Instructions

Medicines I only take as needed

Drug Name	Dose	How many?	What it's for	Special Instructions

Medication Action Plan

MEDICATION ACTION PLAN for XXXXX DOB: X/XX/XXXX	

This action plan will help you get the best results from your medications if you:
    1. Read "what we talked about"
    2. Take the steps listed in the "What I need to do" boxes
    3. Fill in "What I did and when I did it."
    4. Fill in "My follow-up plan" and "Questions I want to ask."	

DATE PREPARED: 1/10/2019	
WHAT WE TALKED ABOUT:	
WHAT I NEED TO DO:	**WHAT I DID AND WHEN I DID IT:**
WHAT WE TALKED ABOUT:	
WHAT I NEED TO DO:	**WHAT I DID AND WHEN I DID IT:**
WHAT WE TALKED ABOUT:	
WHAT I NEED TO DO:	**WHAT I DID AND WHEN I DID IT:**
WHAT WE TALKED ABOUT:	
WHAT I NEED TO DO:	**WHAT I DID AND WHEN I DID IT:**
WHAT WE TALKED ABOUT:	
WHAT I NEED TO DO:	**WHAT I DID AND WHEN I DID IT:**

Documentation/Referral

▸ Document in outpatient EHR

▸ Document Interventions

▸ Reconcile Medications

▸ Fax note to provider if not within the Mount Sinai system

▸ Referral

- Smoking Cessation

- Care management

- Social Work

- PCP/specialist

Intervention

Intervention	% Total
Medication reconciliation	15.5
Device training*	26.77
Therapeutic recommendation	9.86
Therapeutic duplication	12.68
Drug has no indication	1.41
Drug counseling	23.94
Contraindication	4.23
Lab monitoring request	1.41
Referral	1.41
Pill box organization	2.82

*Includes inhaler teaching, insulin teaching, blood sugar monitor teaching

Barriers at Beth Israel

- ‣ Resources

- ‣ Provider referral

- ‣ Patient refusal

- ‣ Demographics and discharge plan

22 Patients have declined service

Reason for Exclusion	n (%)
Shelter/homeless	18 (15.8)
Discharged to rehab facility	34 (29.8)
Active drug use	17 (14.9)
Out of geographic area	45 (38.5)
Total	114

Future Considerations

Mount Sinai Health System Ambulatory Care Pharmacy Services

Credentialing and privileging

Billing
- Medication Therapy Management (MTM/CDTM)
- Annual Wellness Visit (AWV)

Expansion of services
- Pharmacy residents
- Pharmacy technicians

Expansion of CDTM
- Behavioral Health
- Heart Failure

Collaboration
- Inpatient transitions of care team
- Care management
- Ambulatory P&T Committee

Expansion of Services

▸ **PGY-2 Ambulatory Care Pharmacy residency**

- Population health focus

- Clinic-based, resident-led services

▸ **Pharmacy technicians**

- Telephonic outreach

- Support for:

  - ✓ Population health initiatives

  - ✓ Medication adherence measures, MTM

  - ✓ Prior authorizations

References

1. Image from: https://www.mountsinai.org/files/MSHealth/Assets/HS/Newsroom/PDFs/MSHS-Our-Beds-Campaign.pdf.

2. Kindig D, Stoddart G. What is population health? Am J Public Health 2003;93:380–383.

3. NHE Fact Sheet. Centers for Medicare and Medicaid Services. Updated Feb 2019. https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html.

4. Image from: http://www.foma.org/patient-centered-medical-home.html

5. Badowski ME, Walker S, Bacchus S, . Providing comprehensive medication management in telehealth. *Pharmacotherapy*. 2018;38:2.

6. IOM (Institute of Medicine). 2012. The role of telehealth in an evolving health care environment: Workshop summary. Washington, DC: The National Academies Press.

7. Welch, Brandon M et al. Patient preferences for direct-to-consumer telemedicine services: a nationwide survey. BMC health services research. 2017;17(1):784.

8. NEJM Catalyst. Healthcare Big Data and the Promise of Value-Based Care. NEJM Group. 1 Jan 2018. https://catalyst.nejm.org/big-data-healthcare/.

9. American Hospital Association. Telehealth: Delivering the Right Care, at the Right Place, at the Right Time. July 2017. https://www.aha.org/system/files/content/17/telehealth-case-examples.pdf.

10. Vegesna, A., Tran, M., Angelaccio, M. & Arcona, S. Remote patient monitoring via non-invasive digital technologies: a systematic review. *Telemed. J. E. Health* 23, 3–17 (2017).

11. Green BB et al. Effectiveness of home blood pressure monitoring, Web communication, and pharmacist care on hypertension control: A randomized controlled trial. JAMA 2008;299:2857–2867.

12. Shane-McWhorter L et al. The Utah Remote Monitoring Project: Improving health care one patient at a time. Diabetes Technol Ther2014;16:653–660.

References

13. Aberger EW et al. Enhancing patient engagement and blood pressure management for renal transplant recipients via home electronic monitoring and web-enabled collaborative care. Telemed J E Health 2014;20:850–4.

14. Young JD et al. Improved virologic suppression with HIV subspecialty care in a large prison system using telemedicine: an observational study with historical controls. Clin Infect Dis. 2014;59:123–126.

15. Baker JW et al. Utilizing clinical video telehealth to improve access and optimize pharmacists' role in diabetes management. Journal of the American Pharmacists Association , Volume 59 , Issue 2 , S63 - S66.

16. Niznik JD et al. Impact of clinical pharmacist services delivered via telemedicine in the outpatient or ambulatory care setting: A systematic review. Res Social Adm Pharm 2017. doi: 10.1016/j.sapharm.2017.10.011.

17. Liddy, C et al. A systematic review of asynchronous, provider-to-provider, electronic consultation services to improve access to specialty care available worldwide. *Telemed J E Health*. Epub ahead of print 21 June 2018.

18. https://www.pathologylabinpune.in/2018/08/what-is-transition-care-or-followup-care.html. Accessed 3/8/19.

19. Forster et al *Ann Intern Med* 2003; 138(3):161-167.

20. Forster et al. J Gen Intern Med. 2005 April; 20(4): 317-323.

21. Phatak, et al. J Hosp Med. 2016 January; 11(1):39-44

22. Burns et al. J Am Pharm Assoc (2003). 2008 May-Jun;48(3):341-53

21. Reidt, et al. *J Am Pharm Assoc* 2016 Mar-Apr; 56(2):178-83

22. Forster et al. *Ann Intern Med.* 2003 Feb 4.; 138(3):161-67

23. Reidt, et al. *Home Healthcare Nurse.* February 2013; 31(2): 80-87

24. Kalista, et al. J Am Pharm Assoc. 2015; 55:438-442 (Heart Failure and Post-discharge)

25. Stafford L, et al. *Annals of Pharmacotherapy*. 2011; 45(3)325-334 (Warfarin/Post-discharge)

26. Moultry AM, Poon IO. Consult Pharm. 2008 Nov; 23(11): 877-885

Thank You

Erika Abraham, BS, PharmD, CDE
Erika.DaCosta@mountsinai.org

Priyasha Uppal, PharmD, BCPS, CDE
Priyasha.Uppal@mountsinai.org

Stephen Argiro, PharmD, BCGP
Stephen.Argiro@mountsinai.org