



Co-located, Integrated Community Specialists in Primary Care

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Overview

- Background Trends and Challenges
- Systematic Review / Meta-Analysis on Co-Located Specialty Care in Primary Care Settings
- Mayo Clinic Integrated Community Specialist Model and Experience



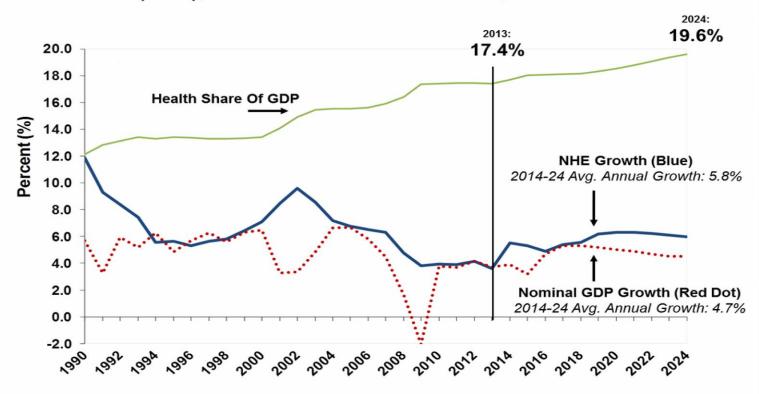
Disclosures

None



Rising Healthcare Costs – US

Growth in National Health Expenditures (NHE), Gross Domestic Product (GDP), and the Health Share of GDP, 1990-2024



Source: Keehan S et al., "National health expenditure projections, 2014–24: Spending Growth Faster Than Recent Trends," Health Aff (Millwood) 2015; (To be published online 28 July 2015).



Rising Healthcare Costs – Canada

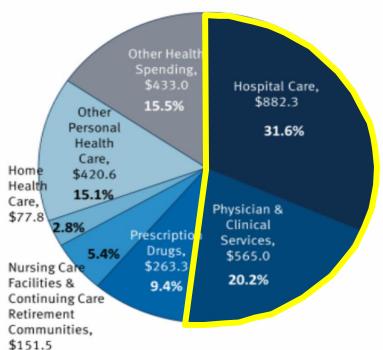




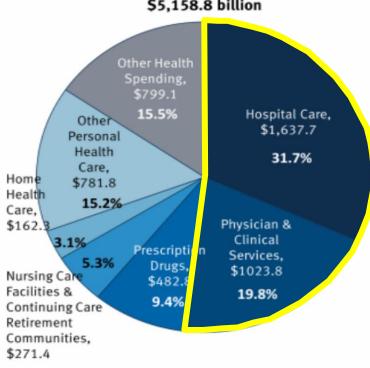
Allocation of US Healthcare Spending

Distribution of National Health Expenditures, by Type of Service (in Billions), 2012 and 2023

2012 NHE Total Expenditures: \$2,793.4 billion

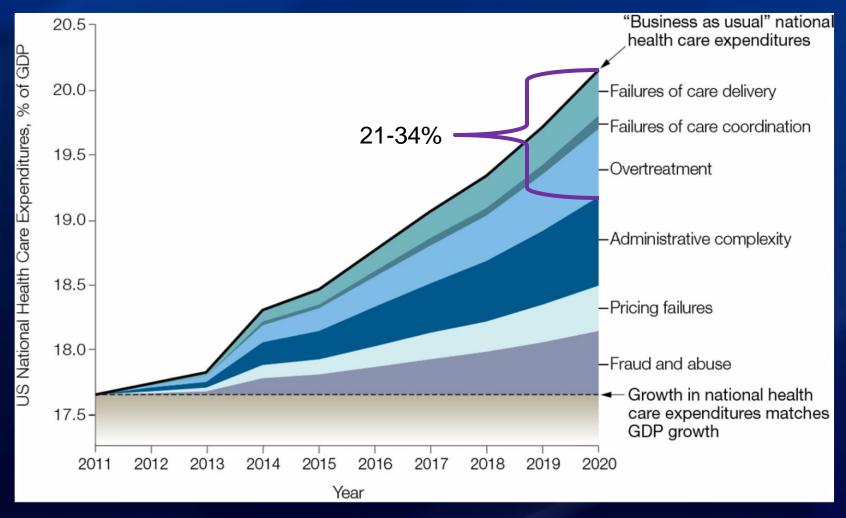


Projected 2022 NHE Total Expenditures: \$5,158.8 billion





Wasteful Healthcare Spending





Shift toward Value Based Payment

Target percentage of Medicare FFS payments linked to quality and alternative payment models in 2016 and 2018 All Medicare FFS (Categories 1-4) FFS linked to quality (Categories 2-4) Alternative payment models (Categories 3-4) 2016 2018 30% 50% 90% 85% All Medicare FFS All Medicare FFS



Shift toward Value Based Payment

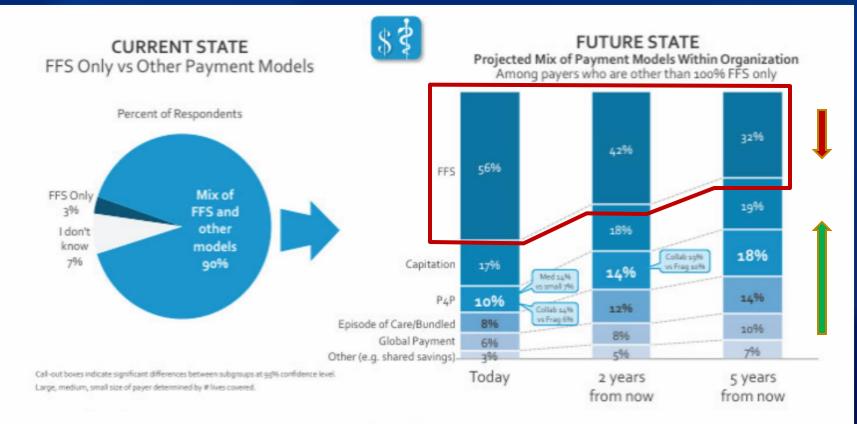


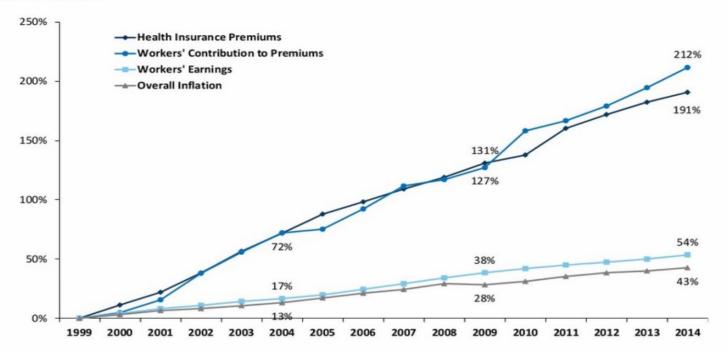
Figure 9: Payers' Mix of Payment Models

Source: McKesson Corporation



Healthcare Costs Shifting to Patients

Cumulative Increases in Health Insurance Premiums, Workers' Contributions to Premiums, Inflation, and Workers' Earnings, 1999-2014



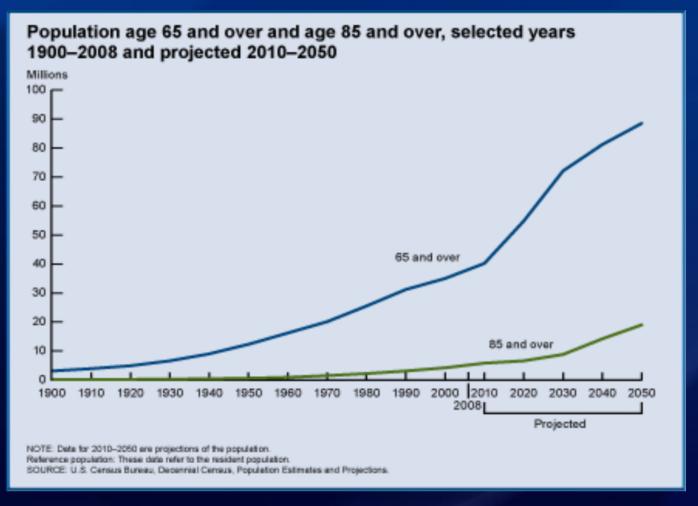
SOURCE: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 1999-2014. Bureau of Labor Statistics, Consumer Price Index, U.S. City Average of Annual Inflation (April to April), 1999-2014; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey, 1999-2014 (April to April).







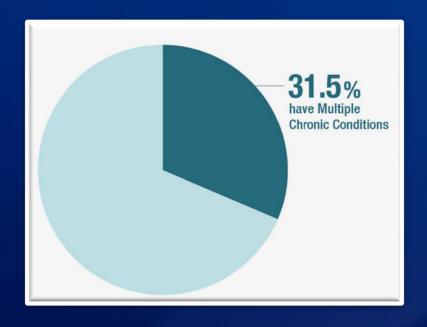
Increasing Population of Older Americans





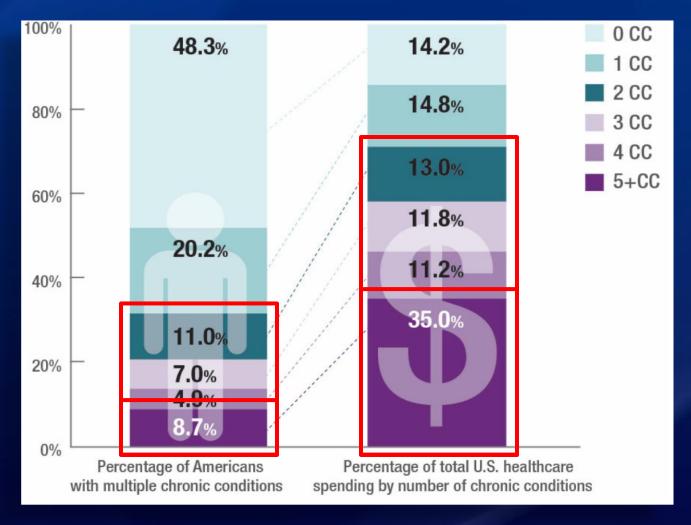
Increasing Burden of Disease

- Increasing burden of chronic & comorbid disease
- 117+ million Americans with at least one chronic disease (CDC, 2012)





Costs due to Chronic Diseases





Patients Get Care from Multiple Providers

Table 1. Numbers of Providers Who Treated Medicare Beneficiaries in 2000.*										
Beneficiary Group	No. of Beneficiaries (%)	No. of Unique Providers								
		Total Phy	sicians	PCPs		Specialists		Practi	Practices	
		median	IQR	median	IQR	median	IQR	median	IQR	
All beneficiaries	1,787,454 (100)									
Considering all physician visits		7	4–11	2	1-4	5	2-8	4	3–7	
Considering evaluation and man- agement visits		3	2–5	1	1–2	2	1–3	3	2–4	
Beneficiaries with chronic condi- tions, considering all physician visits†										
Diabetes	430,461 (25)	8	5-14	3	1-4	6	3-10	5	3-8	
Coronary artery disease	633,750 (38)	10	6-15	3	1-5	7	4–11	6	4-8	
Lung cancer	40,086 (3)	11	7–16	3	2-5	8	5-12	6	4–9	
No. of conditions										
0–2	257,471 (13)	3	2–5	1	1–2	2	1-3	2	1-3	
3 or 4	451,774 (24)	5	3–7	2	1-3	3	2-5	3	2–5	
5 or 6	448,855 (25)	7	5-10	2	1-3	4	3–7	4	3-6	
≥7	629,354 (38)	11	8–16	3	2–5	8	5–12	7	5–9	

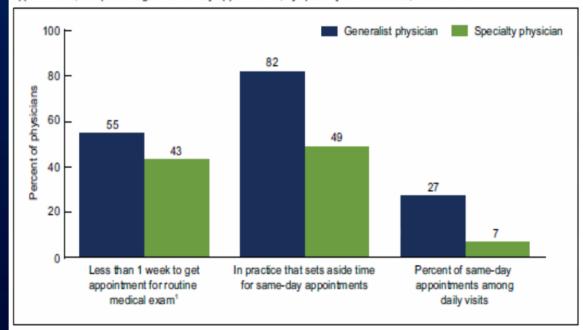
➤ Those with ≥7 diseases could see 16+ physicians per year



Physician Supply and Demand for Care

- More specialists than generalists in the US
- Annual visits
 per generalist
 exceeds annual
 visits per
 specialist
- Access
 challenges
 exist for **both** primary and
 specialty care

Figure 4. Percentage of physicians by time to get an appointment, whether practice sets aside time for same-day appointments, and percentage of same-day appointments, by specialty: United States, 2009–2010



'Excludes physicians who did not provide routine medical examinations (14% of specialty physicians).

NOTES: All differences between generalist and specialty physicians are statistically significant (p < 0.05). Generalist physicians include family and general practitioners, internists, and pediatricians; specialty physicians include all other specialties.





Primary-Specialty Care Interface

 The primary-specialty care interface is key to delivering high value care yet is beset by several challenges



Primary-Specialty Care Interface

- PCPs and specialists often report not receiving adequate information in the referral process
- Disagreement on appropriateness of referrals
- Half of specialty visits are for routine care
- 3/4th of specialty visits → a return visit



Primary-Specialty Care Interface

- Increased use of specialty care can diminish effective care coordination and role of PCPs
- PCPs value direct, personal interaction with specialists
- PCPs best as coordinators and collaborators not as competitors or gatekeepers to specialists
- Medical errors, inefficient testing, delayed treatment, lower value and costlier care



Samuels, M. A. (2011). "The importance of collaboration among physicians." Arch Intern Med 171(14): 1301.

Chen, A., H. F. Yee, et al. (2009). "Improving the primary care—specialty care interface: Getting from here to there." Archives of Internal Medicine 169(11): 1024-1026. Bodenheimer, Thomas, Bernard Lo, and Lawrence Casalino. "Primary care physicians should be coordinators, not gatekeepers." Jama 281.21 (1999): 2045-2049 Olayiwola, J. N., et al. (2016). "Electronic Consultations to Improve the Primary Care-Specialty Care Interface for Cardiology in the Medically Underserved: A Cluster-Randomized Controlled Trial." The Annals of Family Medicine 14(2): 133-140.





The Key Question

 How can we deliver specialty expertise and care to a population with increasing demand, while leveraging the benefits of primary care with respect to continuity, and achieve improved outcomes, better care experience, and lower costs?



Primary Care Medical Home (PCMH)

- Key Features
 - Comprehensive
 - Patient-Centered
 - Coordinated
 - Accessible
 - Quality and Safety
- PCMH associated with improved quality and some decreased utilization and cost
- Small positive effect on patient experiences and small to moderate positive effects on preventive care services

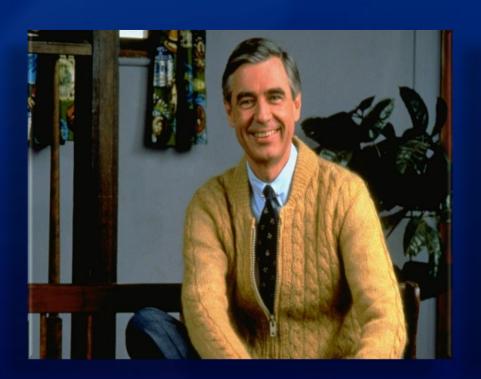


Medical Neighborhood

- Key Features
 - Bidirectional communication, coordination, integration with PCMH
 - Appropriate and timely consultations and referrals
 - Efficient, appropriate, and effective flow of patient information
 - Guide determination of responsibility in comanagement situations
 - Support patient-centered care, access, and high quality/safety
 - Support PCMH PCP as central provider



Medical Neighborhood







Medical Neighborhood

Table 2. Proposed Metrics for Evaluating the Medical Neighborhood								
Category	Proposed Measure	Data Source	Comments					
Referral demand	PCP referral volume/rate	Electronic referral tracking	Can measure absolute volume or rates of referral normalized for patient panel size					
	"Preconsult triage" volume	Electronic preconsult requests	Preconsult triage volume should increase with integration of neighborhood model					
	Leakage	Administrative claims	Medical neighborhood implementation should reduce leakage					
	Referrals avoided	Electronic preconsult requests	Percentage of preconsult triage requests that are resolved without an in-person referral					
Communication/ referral quality	Referral appropriateness	Referral-level specialist surveys	Implementation of "preconsult exchange" should make referrals more appropriate					
	Referral preparedness		теген ав тюге арргорнате					
	Comanagement perception	Referral-level PCP and specialist surveys	Measuring both PCP and specialist perceptions of management plans for the same referrals is an important measure of adequate communication					
	Patient care coordination perception	Patient satisfaction surveys	Medical neighborhood should improve patient experience navigating care across settings					
	Procedural yield	Administrative claims	Medical neighborhood should increase proportion of referrals resulting in procedure in the following 6-12 mo					
Access to care	Time to next new patient appointment	Scheduling system	Preconsult triage can reduce demand for full consults, opening up access; improved triage of referrals to right					
	No. of new patient consults per specialist FTE		specialists can reduce inefficiency and wasted visits					
	Percent completed referrals	Scheduling database + electronic referral tracking	Medical neighborhood should improve no-show rate as a result of better scheduling coordination					
	PCP perceived access	Physician survey	PCP perceptions are as important as actual access data because perceptions can lag service improvements and affect leakage					
Physician satisfaction	PCP and specialist satisfaction	Physician survey	Overall satisfaction with referral and preconsult process					

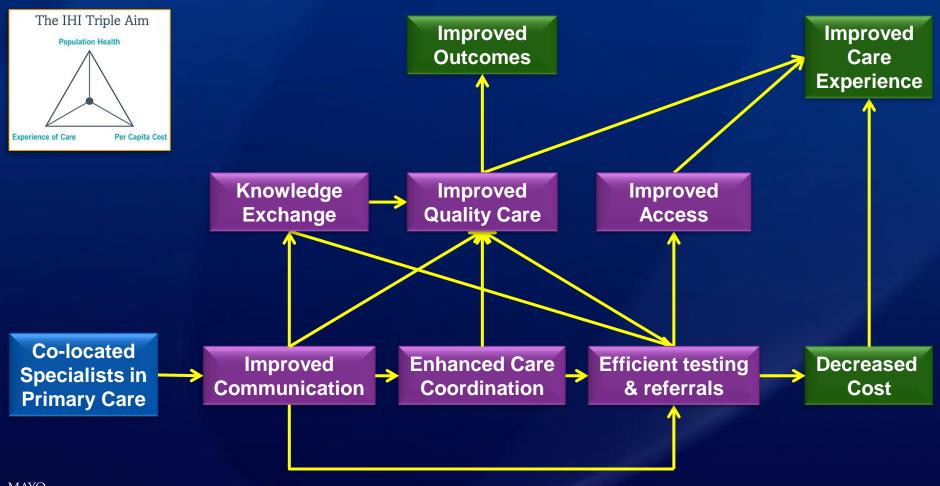


Co-Locating Specialists in Primary Care

- An approach to address primary-specialty care interface challenges
- Co-location as a feature of advanced integration
- Facilitate clinical decision support, information transfer, referral quality, referral tracking



Effect of Co-Location Model







Systematic Review and Meta Analysis

Co-located Specialty Care within Primary Care Practice Settings



Systematic Review / Meta Analysis

- Physically co-located specialists
- Outcome measures
 - Patient satisfaction
 - Provider satisfaction
 - Healthcare access and utilization
 - Clinical outcomes
 - Cost
- 1,620 citations, 22 meeting inclusion



Systematic Review / Meta Analysis Results

- Patient Satisfaction
 - improved
- Provider Satisfaction
 - improved
- Total Visits
 - increased
- Waiting Time
 - decreased
- Hospitalization
 - no effect
- Referral rate
 - decreased

- 4 studies, OR 2.04
 (95%Cl 1.04, 3.98) l²=93.8%
- 2 studies, OR 6.49
 (95%Cl 4.28, 9.85) l²=95.5%
- 5 studies, OR 1.94
 (95%Cl 1.13, 3.33) l²=96.5%
- 3 studies, OR 0.20
 (95%CI 0.10, 0.41) I²=80.5%
- 3 studies, OR 0.75
 (95%Cl 0.53, 1.07) l²=46.5%
- 1 study OR 0.28 (95%Cl 0.21, 0.37) l²=NA



Systematic Review / Meta Analysis Results

- Clinical outcomes mixed
 - Improvement in quality of life and in some diabetes related measures
- Cost decreased
 - Lower costs to patient and per member per month



Systematic Review / Meta Analysis Summary

- Co-located specialty care in primary care settings may support aims of high value care
 - Improved patient & provider satisfaction, reduced wait time, specialty referrals, cost
 - Increased primary care visits
 - Variable impact on outcomes
- Limitations
 - Few studies, limited quality of studies, and high risk of bias
 - Heterogeneity of studies





Integrated Community Specialists (ICS)

Mayo Clinic – Employee and Community Health Practice



AN INTERNATIONAL NETWORK MAYO CLINIC CARE NETWORK





Employee and Community Health (ECH)





Employee and Community Health (ECH)

- Multispecialty primary care practice
 - Community Pediatric & Adolescent Medicine
 - Family Medicine
 - Primary Care Internal Medicine
- 101 PCPs at main clinic site (Baldwin), 74 PCPs at 4 additional sites plus resident trainees
- 152,000 patients, 50% employees and dependents
- Salaried physicians



ECH High Value Care Programs

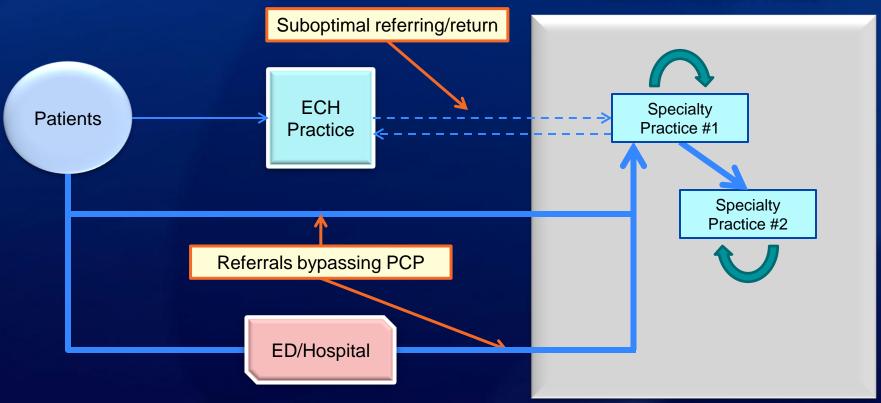
- Anticoagulation Clinic and Home INR
- Community Health Workers
- Adult Care Coordination
- Care Transitions Program
- Palliative Care Homebound Program
- Integrated Community Specialists (ICS)



Previous State

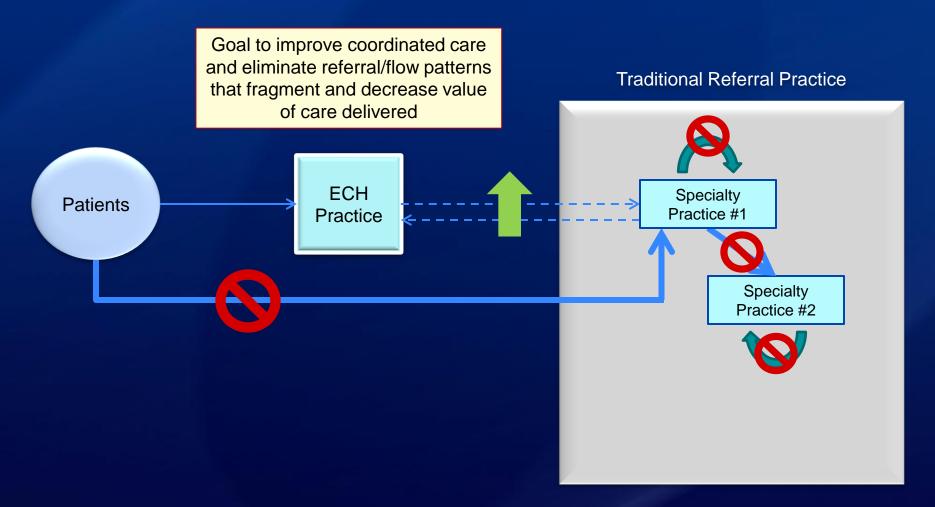
"Churn" and secondary referrals disconnecting PCP

Traditional Referral Practice

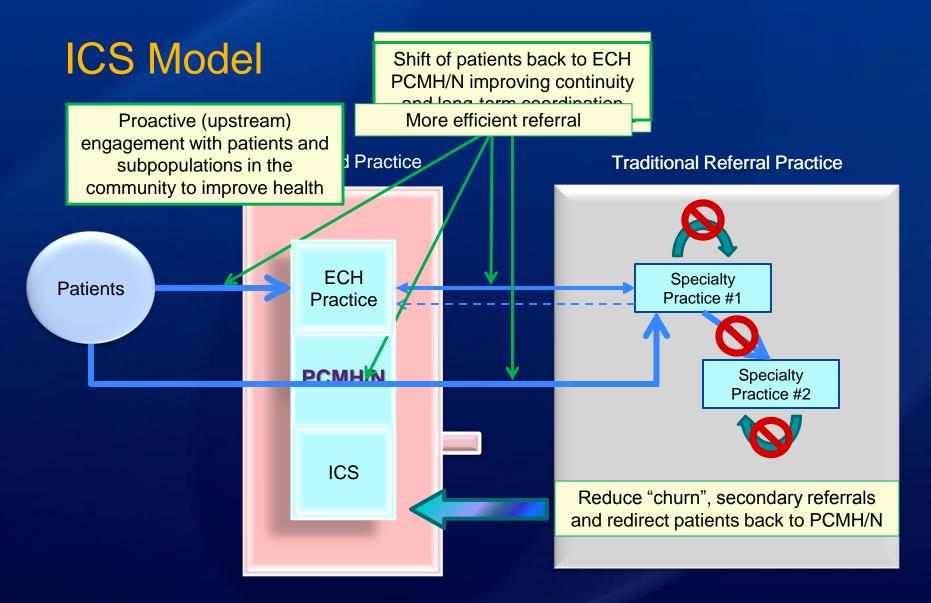




Previous State









ICS Model

- Co-located physicians
 - Behavioral Health, Cardiology, Neurology, Gastroenterology
- Co-located advanced practice providers (NP/PA)
 - Gynecology, Orthopedics
- Virtual Telemedicine
 - Dermatology, Ophthalmology



ICS Model

- Stepwise consultative approach
- Curbside
 - Staffed pager
 - Synchronous/urgent discuss
- Electronic consultation
 - EHR inbox or E-mail
 - Non-urgent or chart review
- Face-to-face visit







ICS – Neurology

- 1. Consult Typology
- 2. Utilization

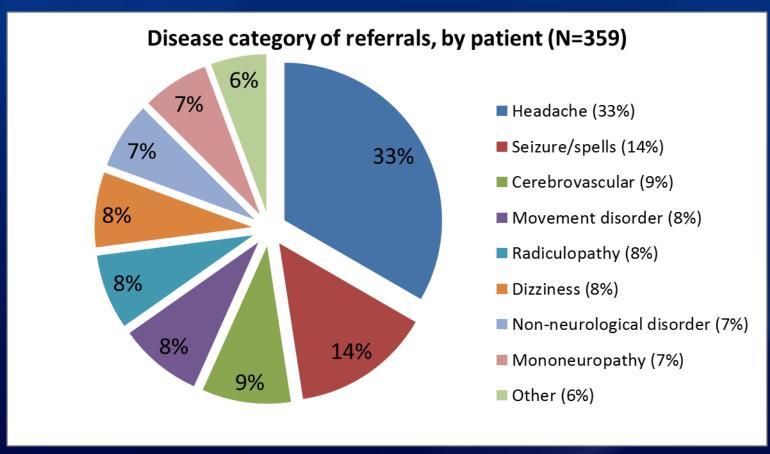


- Observational pilot
- 0.6 FTE neurologist co-located in main site
- 3 month survey
- Prospective data on consecutive consults
- Follow up (4-8 months)



- 359 unique patients
- Curbsides 179
- e-Consults 68
- Face to face visits 182





More than one diagnosis may be included for a single patient



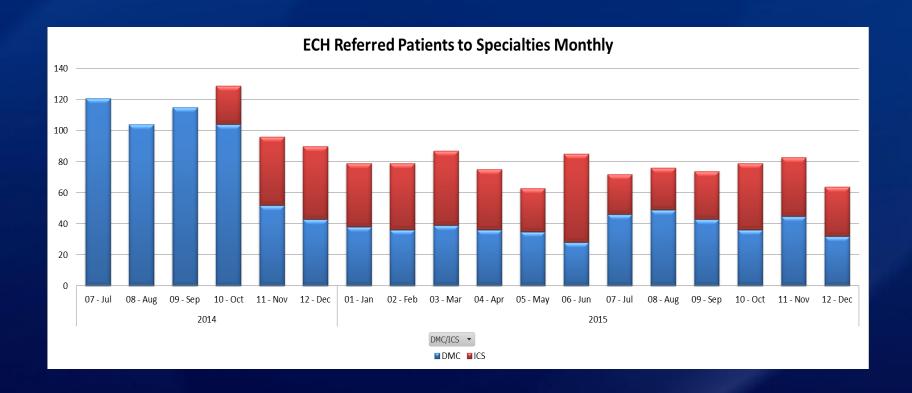
General Consultation Questions	Curbside Consultations (N=179)	Electronic Consultations (N=68)
Testing Recommendations	110 (61%)	23 (33%)
Diagnosis	102 (57%)	24 (35%)
Pharmacologic Treatment Recommendations	96 (53%)	27 (40%)
Indication for FTF Neurology Consultation	58 (32%)	16 (24%)
Neuroimaging Review	38 (21%)	23 (34%)
Non-Pharmacologic Treatment Recommendations	22 (12%)	4 (6%)



Test Modality	Tests Avoided
Brain MRI	39 (33%)
EMG	50 (89%)
Cervical MRI	24 (92%)
MRA or CTA Head and Neck	18 (90%)
Lumbar MRI	11 (100%)



ICS – Neurology Pilot Data – Referral Volumes





ICS – Neurology Comparison Study

- Retrospective, propensity score matched casecontrol study
 - Patients referred to ICS Neurology for faceto-face consultation vs. patients referred to non-co-located neurology
 - 12 month follow up
- Outcomes
 - Diagnostic testing
 - Visits outpatient, ED, inpatient
 - Appointment wait time



ICS – Neurology Comparison Study

- ICS Neurology associated with reduced:
 - Subsequent referral for visits (p=0.001)
 - Brain MRI (p=0.0004)
 - EMG (p=0.009)
- No difference
 - ED visits
 - Hospitalizations
 - Appointment wait time
- Curbsides and e-consults not captured





ICS – Cardiology

- 1. Utilization
- 2. PCP satisfaction
- 3. Patient satisfaction



ICS Cardiology Model

- 1.0 FTE (5 staff)
- Scheduled and unscheduled time
 - Face-to-face consultation (6-8)
 - e-Consult (1)
 - Phone calls with PCPs (10)
 - EHR messages (10)
 - ED triaging (2)



Referrals to Cardiology

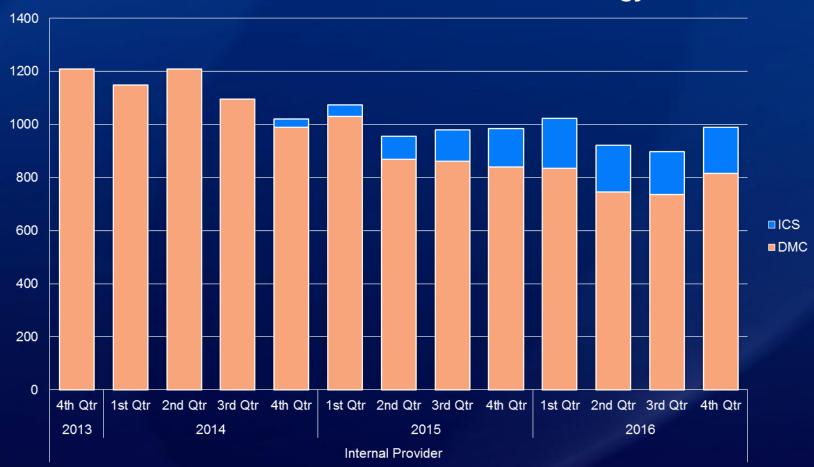
PCP Referred Patients to Cardiology





Referrals to Cardiology

Non-PCP Referred Patients to Cardiology



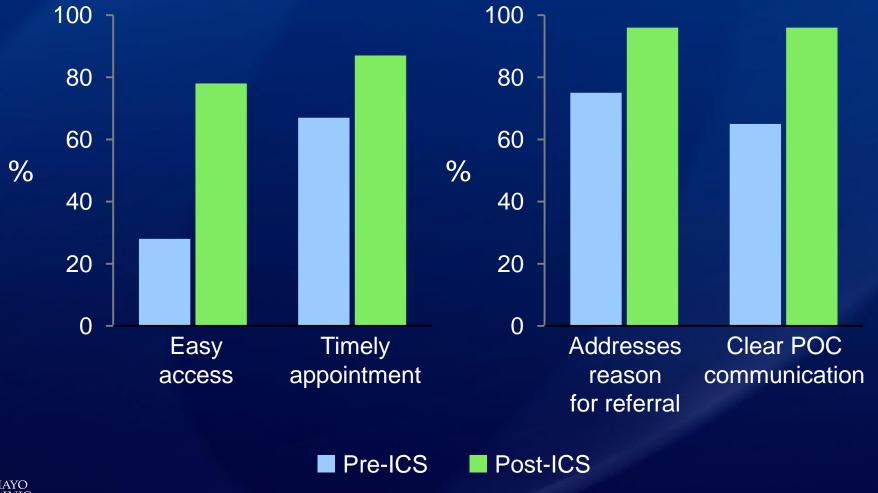


ICS - Provider Satisfaction

- Surveyed ECH primary care providers
- Pre: 98/160 (61.3% response rate)
- Post: 109/171 (63.7% response rate)
- Paired t-test analysis

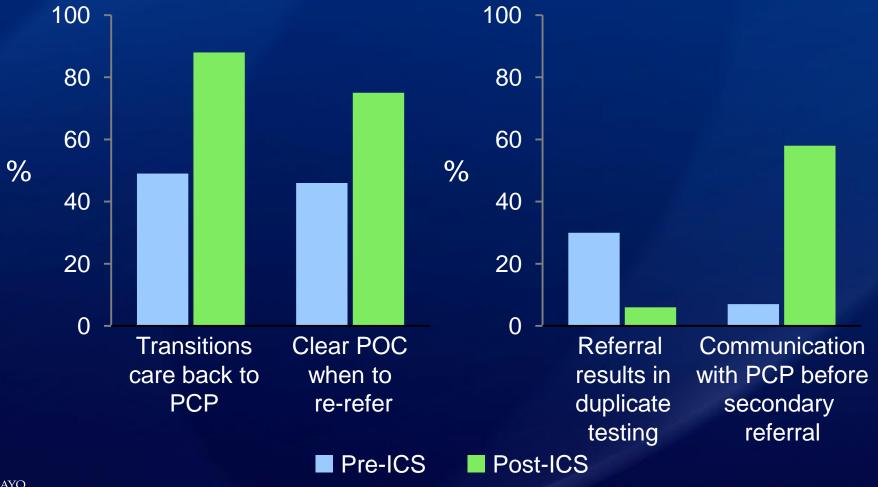


Access and Communication



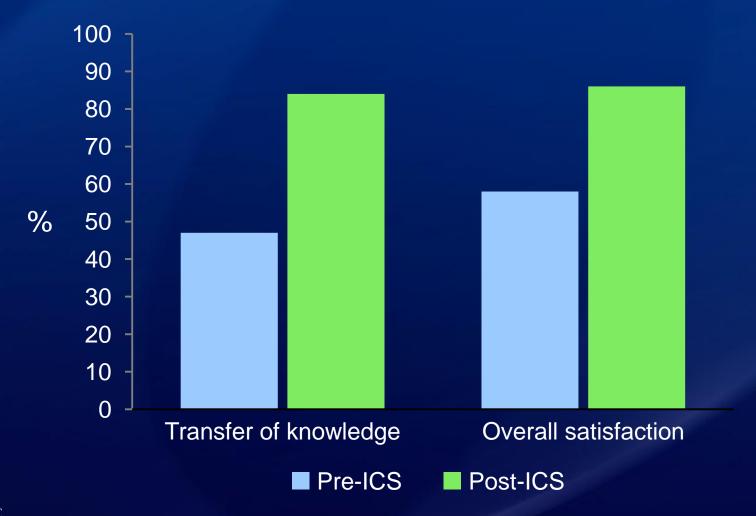


PCP at the Center of Care Plan





Knowledge Transfer and Satisfaction



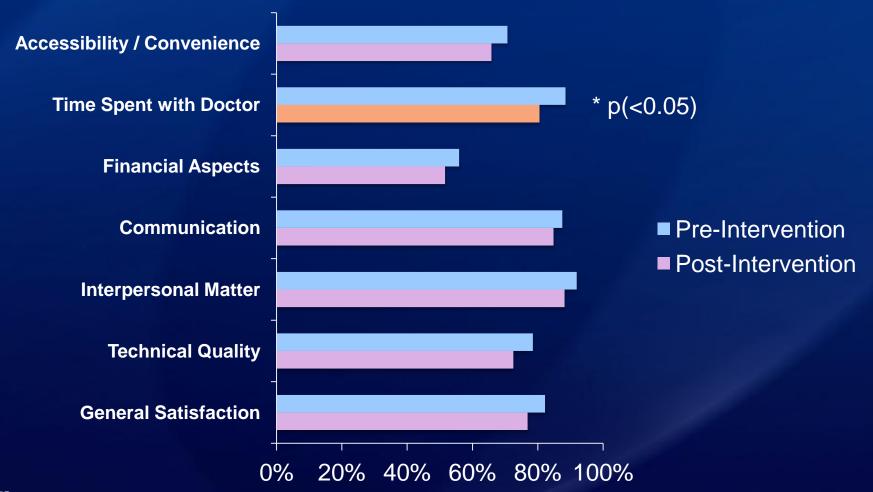


Patient Satisfaction

- 500 patients pre and post implementation
- Approximately 60% response
- High satisfaction at baseline



Patient Satisfaction





Final Notes

- Co-located ICS implemented at largest primary care practice site
- Small core of specialists aligned with model
- Financial alignment of staff and reimbursement



Summary

- Multiple trends and challenges necessitate development of high-value care models
- Co-located specialty care models have potential to provide triple aim benefits and shift care back to the PCMH
- Large primary care practice sites
- Need for staff and financial alignment
- Potential unintended effects during transformation phase



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