Client Profile: GEISINGER discussing how their program

Reduced 30-Day Readmissions by 44%

A Geisinger Health System Profile Highlighting:

Post-Discharge Monitoring Using IVR Reduces 30-Day Readmissions in Case-Managed Medicare Population

Published in *Medical Care, 2012; 50(1):50-57*

Presenters

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Director of Population Management Operations/Geisinger Health Plan.

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Chief Medical Officer/AMC Health

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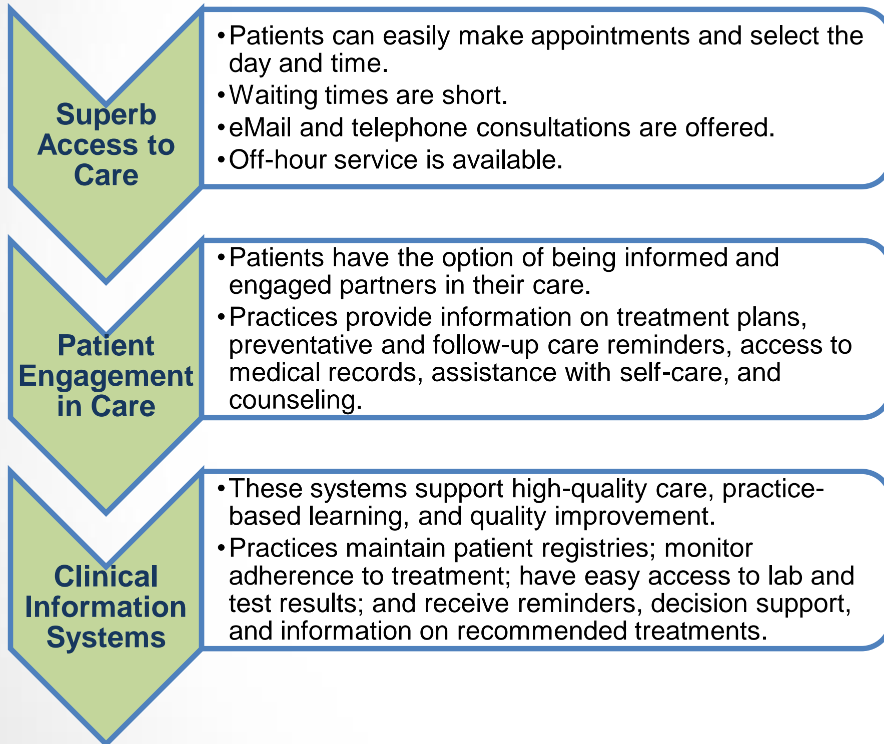
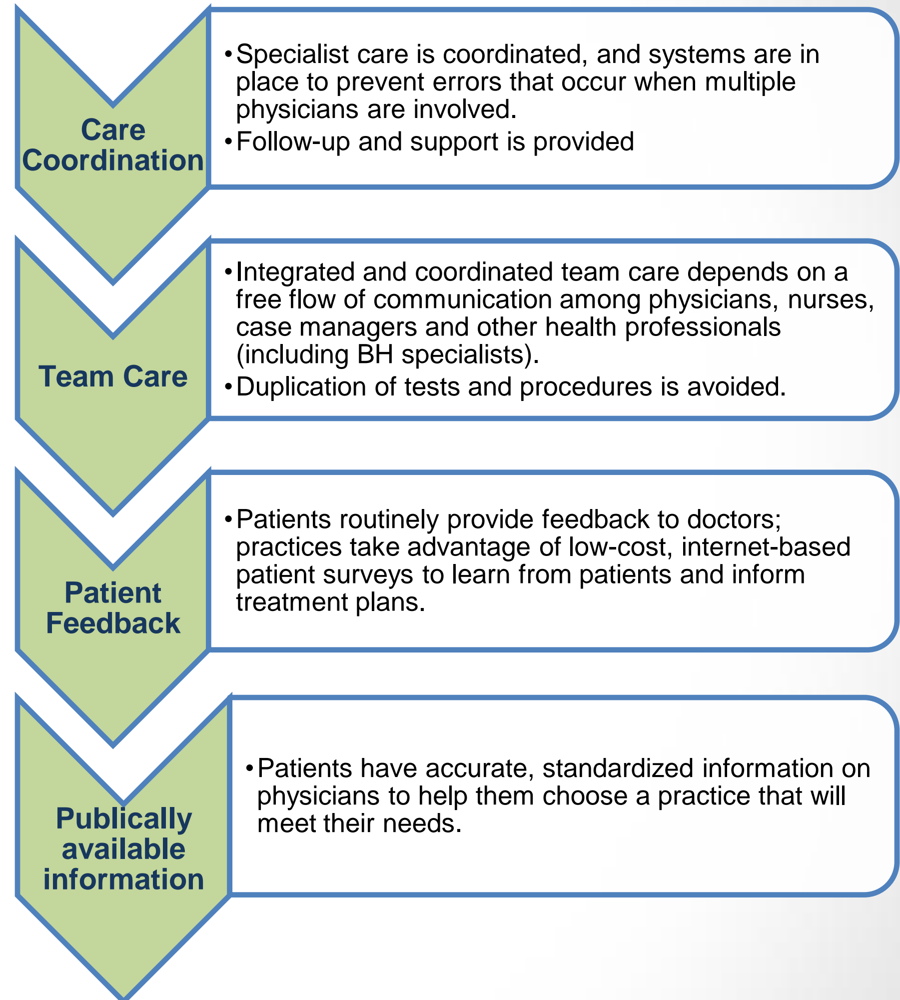
Patient Centered Medical Home

- A patient-centered medical home integrates patients as active participants in their own health and well-being.
- Patients are cared for by a physician who leads the medical team that coordinates all aspects of preventive, acute and chronic needs of patients using the best available evidence and appropriate technology.
- These relationships offer patients comfort, convenience, and optimal health throughout their lifetimes.

Defining the Medical Home

Source: Health2 Resources 9.30.08





30-Day Readmissions

- 17.6% of Medicare hospitalizations due to 30-day readmissions ($15 Billion)[1]
- 50% of Medicare FFS patients with a 30-day readmission did not visit an outpatient physician prior to readmission[2]
- Affordable Care Act (PPACA) directs CMS to track readmission rates and implement payment penalties
- Discharge planning is variable, communication gaps occur

[1] MPAC Report to Congress, June 2008.

[2] Jencks et al., *NEJM* 2009

Post-Discharge Monitoring

- 2010 Cochrane Systematic Review of RCT's concluded that in-hospital discharge planning "probably" brought about small reductions in readmissions
- No RCTs specifically evaluating IVR's for post-discharge
- 1 RCT of telemonitoring in heart failure patients only
  - Chaudrhy et al. (*NEJM* 2010): No improvements in 180-day readmissions or mortality for patients taking daily IVR calls
  - Substantial dropout concerns: 14% of patients assigned to IVR never used; 45% were no longer using it by final week of study

Integrated Population Management

Geisinger Health Plan

ProvenHealth Navigator ®
Our Patient Centered Medical Home

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CENTRAL HUB
NORTHEASTERN HUB

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Lock Haven
Bellefonte
Philipsburg
Patton Forest
Scenery Park
Lewistown
Lewisburg
Milton
Knapper
Lycoming
Millville
Bloomsburg General Surg
Reichart Road
Berwick
Tunkhannock
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Dallas
Kingston
Wyoming
Pittston
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Lake Scranton
Geisinger Specialty Clinic-WB
Mountainhome
Mt Pocono
Kistler
Mountaintop
Hazleton
Mahanoy City
Orwigsburg
Frackville
Pottsville
Catawissa
Kulpmont
Tri-Valley
Shamokin Specialty Care
Sunbury
Selinsgrove Spec Clinic
Mifflin
Selinsgrove

Geisinger Medical Center
Geisinger Northeast
Marworth

Erie, Warren, McKean, Potter, Tioga, Bradford, Susquehanna, Wayne, Crawford, Forest, Elk, Cameron, Sullivan, Wyoming, Venango, Mercer, Clarion, Lycoming, Clinton, Luzerne, Lackawanna, Pike, Jefferson, Centre, Union, Montour, Columbia, Lawrence, Butler, Armstrong, Clearfield, Monroe, Carbon, Beaver, Indiana, Snyder, Northumberland, Schuylkill, Northampton, Mifflin, Juniata, Lehigh, Allegheny, Cambria, Blair, Huntingdon, Perry, Dauphin, Lebanon, Berks, Bucks, Westmoreland, Washington, Montgomery, Cumberland, Somerset, Bedford, Franklin, Fulton, Fayette, Lancaster, York, Adams, Chester, Philadelphia, Delaware, Greene

- Geisinger Inpatient Facilities
- Geisinger Medical Groups
- Geisinger Health System Hub and Spoke Market Area
- Geisinger Health Plan Service Area
- CareWorks Convenient Healthcare
- Non-Geisinger Physicians With EHR

ProvenHealth Navigator® (PHN): Geisinger's Medical Home Program

Patient-centered primary care

- Patient and family engagement & education
- Enhanced access and scope of services
- Team-based care
- Chronic disease and preventive care optimized with HIT

Integrated population management

- GHP employed in-office care managers
- Patient-specific intervention plans
- Population profiling & segmentation - predictive modeling

Value care systems

- Micro-delivery referral systems
- 360°care systems – SNF, ED, hospitals, HH, etc

Quality outcomes

- Patient satisfaction
- HEDIS and bundled chronic disease metrics
- Preventive services metrics

Value-based reimbursement

- Fee-for-service with P4P payments for quality outcomes
- Physician and practice transformation stipends
- Value-based incentive payments
- Payments distributed on Quality Performance

Primary Care Redesign

Patient and family engagement & activation

- Self-management education
- Informed decision making

Physician led team-delivered care

- Physician leadership must set stage for expectation of practice
- Acute/chronic illness care with enhanced access for expanded scope of services
- Redefining roles – “top of the license”
- Responsibility and awareness of where patient is at all times – hospital, SNF, home

Chronic disease and preventive care optimization via IT enabled planned visits

- EMR tools
- HP tools for non-EMR practices

Integrated Population Management

Components	Core Activities
Population Segmentation	Predictive modeling Risk stratification
Health Promotion	Preventive care & Screenings
Disease Management	Self-management education Medication management
Case Management	Care coordination Exacerbation management TOC Tele-monitoring
Pharmacy Management	Brand vs. generic

Embedded Case Management : The core to our success

Personal Care Link	Embedded Case Manager	Recognized Team Member
Comprehensive Care Review – medical, social support	-**High risk** patient case load - 15 - 20% Medicare - 5% commercial - 125 - 150 pts per CM	Regular follow-up of high risk patients
TOC follow-up – acute care, SNF, ED	- 1 CM per 800 Medicare lives - 1 CM per 5000 commercial lives	Facilitates access – PCP, specialist, ancillary
Direct phone access – questions, exacerbation protocols	- Not disease management focused - Focus on those at most risk - Focus on driving issue within the case	Facilitate special arrangements – home care, hospice, AAA
Patient, family support contact		Links health care team to payer

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Transitions of Care

- Pt contact within 24-48 hrs post discharge
- Telephonic outreach
  - Medication reconciliation
  - Ensure safe transition post discharge
  - with appropriate services in place
    - Home Health
    - DME
    - Safe to be in their home?
  - Facilitate post hospital PCP & CM appt within 3 - 5 days
- Close follow-up for 30 days

Chronic Care Management

Heart Failure

Diuretic Titration Protocol

Daily weights

Telemonitoring

Education

Self management

Outreach

COPD

Rescue kit

Symptom monitoring

Education

Self management

Medication

Outreach

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GHS Experience with Monitoring

2006-09: Internally-developed "manual" monitoring program for post-discharge

- Goal was early identification of post-discharge complications, to avoid ED visits and hospitalizations
- Clerical staff made manual calls to patients with 8-9 questions
- Answers that raised red flags were elevated to nurse case manager for follow-up
- Not scalable, ~30 minutes per call/follow-up

2009: Automated "Geisinger Monitoring Program" (GMP) program using AMC technology

GMP Program Details (cont'd)

One IVR call per week, 4 weeks

2-3 minute survey

Questions about:

- Medication adherence and side effects
- Pain, shortness of breath, fever, edema, falls
- GI or neurological symptoms
- Psychosocial support
- Incision site complications (for surgical patients)

Branching logic based on current & prior responses

IVR calls did not replace all contact from CM, but allowed CM's to extend reach and prioritize patients

Results

Variable	GMP Patients (n=875)	Control Patients (n=2,420)	p-value before PS adjustment	p-value after PS adjustment*	Standardized Difference (SD) after PS adjustment*
Male (%)	45.4	42.8	0.19	0.69	0.02
Age (mean, yrs)	75	78	<.001	0.07	0.06
HCC Risk (mean)	1.35	1.75	<.001	0.97	<0.01
% with Chronic Kidney Disease	5	4	0.09	0.70	<0.01
% with Diabetes	11	15	<.001	0.78	0.03
% with Hypertension	24	30	<.001	0.99	<0.01
Admits per 1000 patient-months (mean)	44.1	46.7	0.76	0.89	0.03
Readmits per 1000 patient-months (mean)	14.0	13.4	0.90	0.91	0.02
Mean inpatient expenses per patient-month ($)	$338.93	$353.93	0.72	0.68	0.02
Mean total expenses (excluding prescriptions) per patient-month ($)	$1253.94	$1371.37	0.16	0.47	0.03

*p>0.05 and SD <0.10 suggest adequate balance

GMP vs. Control (2007-09)

	GMP Cohort (n=875 members)		Control Cohort (n=2,420 members)		Comparison of GMP vs. Control		
	N, Admissions	N (%), Readmissions	N, Admissions	N (%), Readmissions	Absolute % Reduction in Readmits	Relative % Reduction in Readmits	p-value
2007	155	25 (16.1)	657	124 (18.9)	-2.8%	-14.8%	0.43
2008	288	59 (20.5)	1,171	268 (22.9)	-2.4%	-10.5%	0.38
2009	1329	209 (15.7)	3,565	714 (20.0)	-4.3%	-21.5%	<.0001
Total	1,772	293 (16.5)	5,393	1,106 (20.5)	-4.0%	-19.5%	<.0001

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Within GMP Cohort Only (Pre/Post)

Before GMP		During GMP		After GMP		Comparison of "During GMP" vs. "Before or After"		
N, Admits	N (%), Readmits	N, Admits	N (%), Readmits	N, Admits	N (%), Readmits	Absolute % Reduction in Readmits	Relative % Reductio n in Readmits	p-value
584	158 (27.1)	1,018	103 (10.1)	170	32 (18.8)	-15%	-60%	<.0001

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Regression: Within-Person Results

Analysis Method	Odds Ratio	95% CI	p-value	Relative % Reduction in Odds of Readmission [95% CI]
Primary Analysis (Per Protocol)				
Unadjusted	0.502	(0.350, 0.720)	0.0008	50% [28-65%]
PS Regression	0.504	(0.352, 0.723)	0.0002	50% [28-65%]
PS Stratification	**0.556**	**(0.401, 0.772)**	**0.0004**	**44% [23-60%]**
Intent To Treat Analysis				
Unadjusted	0.596	(0.421, 0.843)	0.0035	40% [16-58%]
PS Regression	0.596	(0.421, 0.844)	0.0035	40% [16-58%]
PS Stratification	0.649	(0.483, 0.870)	0.0039	35% [13-52%]
Censoring Dropout Observations				
Unadjusted	0.438	(0.297, 0.647)	<.0001	56% [35-70%]
PS Regression	0.441	(0.299, 0.650)	<.0001	56% [35-70%]
PS Stratification	0.498	(0.351, 0.706)	<.0001	50% [29-65%]

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Discussion/Conclusions

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Strengths and Limitations

- Robust pre-post parallel design, with multiple sensitivity analyses to test assumptions & limit bias
- Very high compliance/completion rate
  - Only 34 of 875 GMP patients (4%) failed to complete 4 weeks' calls
  - These patients were included in analysis as GMP patients
- Medicare population in integrated health system
- Long-standing use of an ambulatory EHR system
- IVR was added on top of an existing case management program (and still showed incremental effect)
- Observational study
  - Study design and analysis attempted to minimize bias
  - However, CMs' selection of patients for IVR could still confound

Conclusions

- Use of IVR with case management, as compared to case management alone, was associated with a 44% relative reduction in 30-day readmissions [p=0.0004, 95% confidence interval 23-60%]

- Although the ability to implement this was expedited within an integrated health system and case management model, the core components of trained clinical staff, effective communication tools and commercial telemonitoring systems such as AMC can be implemented elsewhere in innovative and creative provider models.

Thank you for your participation…

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Complimentary Webinar: Speaking from experience:
Geisinger System on how they reduced readmissions by 44%

Webinar Details: Thursday, March 8th, 2012 | 2:00pm ET / 11:00am PT

Are you interested in learning more about the remote patient monitoring programs Geisinger Health System has utilized and how they are reducing healthcare cost by reducing readmissions?

Register Today in the exhibit hall at the **AMC Health Booth** or **register at amchealth.com** to join a the complimentary webinar: a profile of Geisinger on March 8th at 2:00pm ET