



HIT to Support the Advanced Medical Home

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GEISINGER
REDEFINING BOUNDARIES™

Geisinger

- 14 clinics, 3 hospitals, 31 counties
- 200,000 lives
- 100% outpatient EHR
- 100% inpatient EHR (large hospital)
- Patient EHR – 100,000 patients
- Outreach EHR – 500,000 records yearly
- Information Exchange – 10 organizations

Agenda

- The Goal of HIT
- End-to-End Care Processes
- Precisely Informed Actors
- Transparent Reporting

The Goal of HIT

To support the flawless performance of a PCP-and-patient-led (virtual) team that manages all of a patient's health needs (and information) across every setting of care.

The Reality

- Discharge plans unclear, un-scheduled.
 - Follow-up plan incomplete.
 - Follow-up appointments unavailable.
- Medication problems at transitions of care:
 - Discharge meds added to home meds (creating duplicates)
 - Patients too confused to fill prescriptions.
 - Delay for PCP confirmation of discharge meds (e.g., antibiotics post-pneumonia)

Agenda

- The Goal of HIT
- End-to-End Care Processes
 - Supported by end-to-end HIT.

The Healthcare Team (Actors)

- Patient
- Doctor
- Nurse
- Caregiver
- Call Center
- Scheduler
- Clinical Educator
- Case Manager
- Health Coach
- Payer
- Quality Manager
- Regulator

End-to-End HIT

- Automate identification of patient needs and care-plan status.
 - Population screening and risk stratification
 - Care reminders
 - Disease-specific patient summaries

End-to-End HIT

- Automate identification of patient needs and care-plan status.
- Automate patient engagement.
 - Personalized invitations to care
 - Personalized updates at check-out

End-to-End HIT

- Automate identification of patient needs and care-plan status.
- Automate patient engagement.
- **Standardize clinic processes.**
 - EHR rooming tool
 - Protocol-based order sets
 - Med reconciliation

End-to-End HIT

- Automate identification of patient needs and care-plan status.
- Automate patient engagement.
- Standardize clinic processes.
- Automate remediation of sub-optimal care.
 - EHR alerts (linked to)
 - Standardized order sets

Continuously Optimized HIT

- Pre-implementation process re-design

Continuously Optimized HIT

- Pre-implementation process re-design
- Continuing optimization
 - Processes
 - EHR
 - Team members

Continuously Optimized HIT

- Pre-implementation process re-design
- Continuing optimization
- **Every loop closed**
 - Tests
 - Prescriptions
 - Referrals
 - Discharges

Agenda

- The Goal of HIT
- End-to-End Care Processes
- **Precisely Informed Actors**
 - Data Capture
 - Data Movement
 - Action Support
 - Patient EHR
 - Data-Response Center

Precisely Informed Actors

- Data Capture

Data Capture (patients and clinicians)

“The patient notes new low-back pain.

There is no personal history of cancer, trauma, or long-term steroid use. The patient has noted no fever, unexplained weight loss, urinary retention, saddle anesthesia, fecal incontinence, sciatica, or bone pain.

The breasts are normal. {LBP PROSTATE:9363} There is no spinal tenderness to percussion. Both ipsilateral straight-leg raising and crossed straight-leg raising are negative. There is no ankle-dorsiflexion nor great-toe extensor weakness.”

Care Management Pre-Admit Evaluation

Epic Hyperspace - LOCUST COURT - Epic Stress - 11-2007 copy - KARLA (SYS-SUPPORT) LEIBY

Desktop Action Options Charge Router Reg/ADT CRM/CM Referrals Reports Report Mgmt Tools Admin Help

Record Viewer Back Forward Home Sched In Basket Review Encounter Tel Enc Hospital Chart Pt Lists Secure/Stay Print Secure

Home Zdanville, Womantwo Epic

Zdanville, Womantwo* Age Sex DOB MRN Allergies PCP Alert INS MyGeisinger
 65 yea F 12/12/1942 Z40000065 Codeine, Sulfa, Rice Bean, Fruit* TEST MD, SU* HM, Alert (None) Sign Up

Questionnaires [Close X]

Current Questionnaires

CARE MGMT PRE-ADMIT ASSESSMENT [110500]

Add [] ... Remove Restore

Adv	Question	Answer	Comment
	CARE MGMT PRE-ADMIT ASSESSMENT		
✓	Anticipated LOS: DO YOU HAVE?		
✓	Adequate prescription plan?		
✓	Computer at home that you use?		
✓	MyGeisinger?		
✓	Power of Attorney (POA) or Advanced Directives?		
✓	Do you live:		
✓	Employment?		
✓	Caregiver arrangements for return home?		
✓	Who needs to be taught how to assist in your care?		
✓	In general would you say your health is?		
✓	Adult children in the area?		
✓	Is there anyone who could call you everyday for a while once home?		
✓	Is there anyone who could assist with getting		

KARLA (SYS-SUPPORT) ... Staff Message, Results, Open Charts, Encounters, Addendum 5:41 PM

Physician Discharge Checklist

Epic Hyperspace - LOCUST COURT - New Development 12-2007 - KARLA (SYS-SUPPORT) LEIBY

Desktop Action Options Charge Router Reg/ADT CRM/CM Referrals Reports Report Mgmt Tools Admin Help

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Home **Zambtest, Womanseven** Epic

Zambtest, Womanse* Age Sex DOB MRN Allergies PCP Alert INS MyGeisinger
 67 yea F 1/11/1941 5332882 Not on File DEVINE SYS-S* HM, AlertMID PENN IN* Sign Up

Doc Flowsheets Results Review Flowsheets Graphs Problem List History Letters Demographics EMPI Demogra... MPI History **Doc Flowshe...** Growth Chart Allergies Medications Order Entry Enter/Edit Resul... Imm/Injections Communication Pt. Handouts NDP Form Visit Navigator

File Add Row Add Group Add LDA Cascade Add Col Insert Col Compact Last Filed Graph Details Go to Date Values By More

Flowsheet: **PHYSICIAN TRANSI** Encounter Vitals Medical Risk Screening Pilot TOC Surgical Risk Screening Pilot TOC

PHYSICIAN TRANSITIO...	<input checked="" type="checkbox"/>		05/09/08	
On Admission	<input checked="" type="checkbox"/>		1700	
Day of Discharge	<input checked="" type="checkbox"/>		On Admission	
Complete Medication Reconciliation			Day of Discharge	
Complete Medication Reconciliation				
Complete Discharge Instruction / Prescription Record				
Complete discharge summary				

Value Comment Time Taken Time Recd User Taken User Recd Show Audit File

KARLA (SYS-SUPPORT)... Open Charts 5:53 PM

Post-Discharge Alert (case manager)

Questionnaire for ACUTE [22]


Question	Answer
GHS ACTIVE CASE MANAGEMENT - 200020	
The patient is enrolled in ACTIVE CASE MANAGEMENT.	Yes
Is this a Hospitalization or Emergency Room follow up?	!
PATIENT MUST BE SCHEDULED IN WITHIN 7 DAYS OF DISCHARGE DATE	
What date was the patient discharged?	!

Custom List

Accept Cancel

Data Capture

Questionnaire for ACUTE [22]

Question	Answer
GHS ACTIVE CASE MANAGEMENT - 200020	
The patient is enrolled in ACTIVE CASE MANAGEMENT.	Yes
Is this a Hospitalization or Emergency Room follow up?	 ...

PATIENT MUST

What date was

Answer Select

Type to match Answer:

Find

Select answer from list:

Answer	Number
Hospitalization	1
Emergency Room	2

Accept Cancel

2 items loaded.

Custom List

Accept Cancel

Precisely Informed Actors

- Data Capture
- Data Movement





Data Movement

- Scanned Documents
 - Electronic management
- Hand Entry
- Information Exchange
 - EHR access
 - Scanned documents
 - Machine-readable data (LOINC)

Precisely Informed Actors

- Data Capture
- Data Movement

Data Presentation

Problem List			
Status	Trend	Score	
			CHF, Stage 2
			HTN
			CKD, Stage 3
			Diabetes Type 2, with Nephropathy
			Acute UTI

Precisely Informed Actors

- Data Capture
- Data Movement
- Action Support

Action Support

- Diagnoses linked to care plans
- Order Sets linked to diagnoses and care plans
- Patient instructions linked to order sets

Order Sets and Patient Communications

FAST FACTS

Step Four:

- Click on Green Plus Sign to Add to Your Favorites (only once)
- Choose the Rescue Medication.
Optional: HISTORICAL Meds available (uncheck defaulted med)
- Right Click on COPD Rescue Pt Instructions, complete open variables using F2 Button.
- Click on Accept/Pend Button to exit smartset.

COPD Patient Instructions Example – go to Pt Handouts and Pt Instructions to Print at your location.

DATE
PATIENT NAME
PATIENT ADDRESS
Dear Mr./Mrs. XXXXX:
Your provider has ordered medication to treat your symptoms of respiratory infection. You

SmartSet - COPD Rescue Kit - Smartset #4206

Association Primary Dx Edit Item **Favorite** Pharmacy Questionnaire Health Maint Accept/Pend Accept/Sign Cancel

- COPD Rescue Kit
 - Rescue Antibiotics (multiple)
 - AUGMENTIN 875-125 MG TABS (10 days - start at onset of symptoms with your prednisone)
 - CEFTIN 500 MG TABS (10 days of therapy - start at onset of symptoms with your prednisone)
 - DOXYCYCLINE HYCLATE 100 MG CAPS (10 days of therapy - start at onset of symptoms with yo
 - ZITHROMAX 250 MG TABS (5 days of therapy - start at onset of symptoms with your prednisone)
 - Rescue Antibiotics - HISTORICAL MEDS (multiple)
 - HISTORICAL - AUGMENTIN 875-125 MG TABS (10 days - start at onset of symptoms with your pr
 - HISTORICAL - CEFTIN 500 MG TABS (10 days of therapy - start at onset of symptoms with your p
 - HISTORICAL - DOXYCYCLINE HYCLATE 100 MG CAPS (10 days of therapy - start at onset of syi
 - HISTORICAL - ZITHROMAX 250 MG TABS (5 days of therapy - start at onset of symptoms with yc
 - Rescue Steroid (multiple)
 - PREDNISONE (PAK) 10 MG PO TABS (Taper Over 16 days start at the onset of symptoms with y
 - HISTORICAL - PREDNISONE (PAK) 10 MG PO TABS (Taper Over 16 days start at the onset of s
- Patient Instructions - Go to Patient Handouts Activity (Tab)
 - Print from Patient Instructions Section - Allows to Print at Your Location (single)
 - COPD Rescue Patient Instructions (right click to complete - Use F2 Button)
- Chief Complaint/Reason for Call
 - Chief Complaint/Reason for Call (single)
 - Case Management - COPD Rescue Kit
- Documentation
 - Notes (single)
 - COPD Documentation
- Diagnosis
 - COPD (multiple)
 - COPD [496]

Page 2 Sec 1 2/2 REC TRK EXT QVR English (U.S.)

Start Measuring the Adv... HIT Support for the ... May 19-20 FAST FACTS C... 7:58 AM

Action Support

- Diagnoses linked to care plans
- Order Sets linked to diagnoses and care plans
- Patient instructions linked to order sets
- **Pre-Filled Referrals**
- **Direct-to-patient reminders linked to self-scheduling**

PHR: Data Access

- Problem List
- Med List
- Tests
- Visit review
- Prevention
- Chronic-Disease Management
- Case Management

PHR: Communications

- Appointment Requests
- Secure e-Mail with
 - Providers
 - Case Managers

PHR: Self-Service

- Medication Renewals
- Self-Scheduling (appointments, shots, tests)
- eVisits and other data input
- Referral requests

Precisely Informed Actors

- Data Capture
- Data Movement
- Action Support

- Data-Response Center

A Flood of Incoming Data

- Lab results
- Radiology results
- Patient input (depression scale)
- Monitor input
- Pharmacy input
- Case Manager input

Data-Response Center - Actors

- Business-Process Management software
- Call Center
- Schedulers
- Clinical Educators
- Nurses
- Case Managers (high-risk patients)
- Physicians

Data That Prompts a Response

- Discharge (transition of care)

Transitions of Care

- ED Discharge
 - PCP communication
 - Home-health referral
- Hospital
 - Early post-discharge patient monitoring
 - PCP communication

Data That Prompts a Response

- Transitions of care
- No result
 - Call Center invitation
 - Clinical Educator
 - Physician discussion

Data That Prompts a Response

- Transitions of care
- No result
- **On-target result**
 - Normal mammogram letter.

Data That Prompts a Response

- Transitions of care
- No result
- On-target result
- **Off-target result**
 - Breast Clinic contacts patient within 24 hours.

Levels of Automation

- The software activates a protocol
 - without notifying a human.
 - and notifies a human.
 - which allows a human a restricted time to veto it.
 - contingent on a human's approval.
- The software suggests one action (among many options) for human approval.
- The software narrows the options to a few.
- The software offers a full set of options.
- The software presents data clearly, but offers no other assistance.

Agenda

- The Goal of HIT
- End-to-End Care Processes
- Precisely Informed Actors
- **Transparent Reporting**

Transparent Reporting

- To Patients
 - Reminders
 - Updates (e.g., depression status)
 - After-Visit Summaries
- To Providers (by variance)
- To Managers (by variance)
- To Payers, Regulators, Public Health

Implications

- Providers will want to buy “medical-home systems”, not EHRs *per se*.



GEISINGER
Redefining BoundariesSM