



Long Term and Post Acute Care

**LTPAC** **HIT**

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**ADVANCING  
THE HEALTH  
AND WELL-BEING  
OF INDIVIDUALS  
AND COMMUNITIES**

**JUNE 21-23, 2015 | BALTIMORE, MD**

# **Connecting LTPAC Across Care Settings**

Lindsey Hoggle, Mike Tushan, James Younkin  
Jennie Harvell, Moderator

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# Presenters

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- Jennie Harvell – Moderator
  - Senior Policy Analyst
  - Assistant Secretary for Planning and Evaluation (ASPE)
- Lindsey Hoggle
  - Director of Nutrition Informatics
  - Academy of Nutrition and Dietetics
- James Younkin
  - Information Technology Director
  - Geisinger Health System
- Mike Tushan
  - Director of Business Development
  - Lantana Consulting Group



# Clinical Use Case

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- Maria Sanchez, 82 years old
  - Hospitalized for pneumonia
  - Discharged from hospital to Home Health
  - Seen by Home Health
- Maria experiences new symptoms
  - Speaks with Home Health supervising MD
  - MD refers her to the Emergency Room without an encounter
- How to communicate status to the ER?



# Timeline

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- Hospitalization
  - Discharged from hospital: 1/27
- Patient is seen by Home Health: 1/30
  - OASIS created: at intake/admission
- Patient experiences new symptoms: 2/4-7
- Patient speaks with MD who refers back to hospital: 2/7
  - Transfer Note created 2/7



# Hospital Discharge Summary

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- Medications:
  - levofloxacin, 750mg/day
  - metformin, 500mg/day
- Allergies – penicillin,
- Problems:
  - Hospitalization was for pneumonia
  - Diabetic (type 2 w/o complications)
  - History of smoking
  - Obesity



# OASIS Assessment/CDA

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- Initial Home Health assessment:
  - Cognitive status: pretty normal
  - Functional status: walking with assistance
- Transformed to Health Level Seven (HL7)
  - Clinical Document Architecture (CDA)
  - LTPAC Summarization of Episode Note
  - Customized for OASIS



# Transfer of Care Note

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- Medications, allergies, problems
- Cognitive status: Patient less responsive, more confused,
  - HH/OASIS observations go into cognitive status
  - New observations go there, too, noting that changed over past 48 hours
- Functional status: was walking, with assistance; now bed-ridden
- Vital Signs: low grade temperature
- Not eating: would go into History of Present Illness
- Nutritional guidance: nutritional consult on admission; carbohydrate-controlled moderate diet

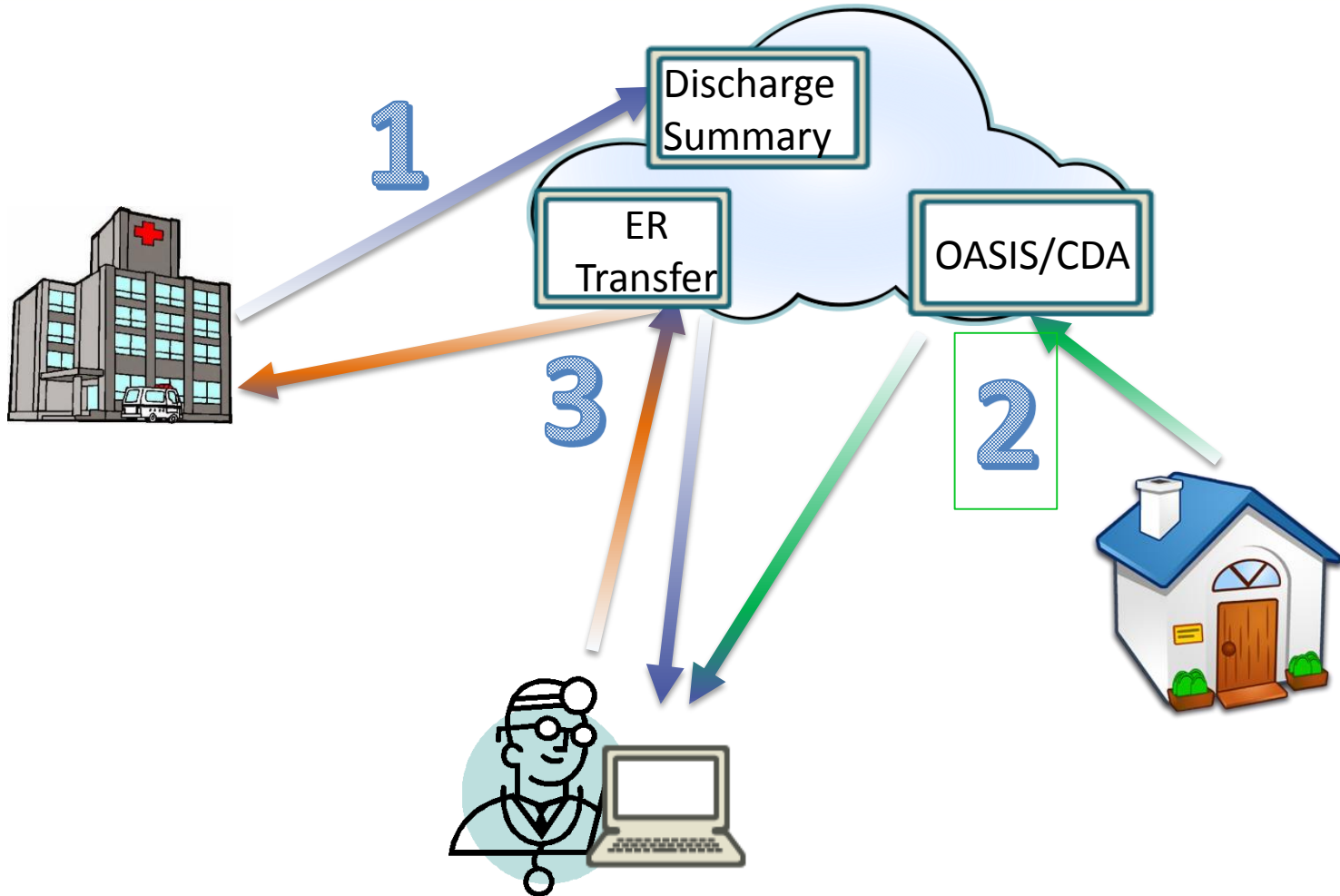


# CLINICAL DOCUMENTATION

Long Term and Post Acute Care

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# Connectivity through the HIE

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- How does the referring physician access the information?
- KeyHIE, Health Information exchange
  - Transformed OASIS/CDA
  - Hospital Discharge Summary
- Camara connected to KeyHIE, queries for documents, selects OASIS/CDA & most recent Discharge Summary



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# KeyHIE Transform™ Overview

## OASIS





# About KeyHIE Transform™

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- KeyHIE Transform tool is a desktop/server application that converts MDS or OASIS into a Patient Assessment Summary (PAS), which is a part of the Clinical Document Architecture (CDA).
- CDA can be delivered to a HIE or sent via Direct Secure Messaging.
- The tool can be setup to run in real-time, manual, every hour, or every day.




# KeyHIE Transform™ Process

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- Configuration can be managed via the User Interface.




### KeyHIE Transform Service

Source OASIS System 


\*Vendor - Software

--Other--  Geisinger OASIS

Installed KeyHIE Transform Connect Version: 6.0.463

File Delivery Scheduling 


Real Time  
 Manual  
 Check File Locations Every Hour  
 Check File Locations Every Day


Source File Options: 







Do not delete Source File. Move Source File to alternate location.

Delivery Options

Deliver Assessment / CCD as File back to your source system  
 Deliver Assessment / CCD to HIE

KeyHIE - Keystone Health Information Exchange 

Secure Delivery 

Name of Organization To Deliver To: 	Email Endpoint: 	Additional Delivery Information: 
		
		
		

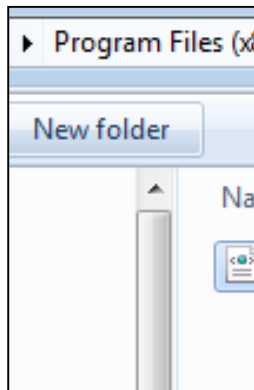




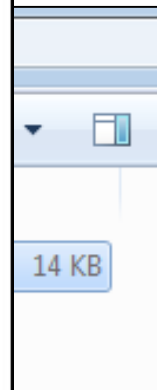
# KeyHIE Transform™ Process

■ The to

der.



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# KeyHIE Transform™ Process

### Sanchez, Maria

Gender: **Female** Date of Birth: **June 11, 1933**

#### - Patient Information

**Contact** Sanchez, Maria  
FL 33136-0000

Created On: January 28, 2014

### Home Health Summary (OASIS Extract)

#### - History of Encounters

Reason for Assessment: Start of care - further visits planned

Inpatient discharge facility: Past 14 Days: Discharged From Short Stay Acute Hospital

Most Recent Inpatient Discharge Date: 01/27/2014

#### - Functional Assessment

Risk For Hospitalization: Taking Five Or More Medications

Frailty Indicators

Multiple Hospitalizations (2 Or More) In Past 12 Mo

Patient's Overall Status: The patient is likely to remain in fragile health and have ongoing high risk(s) of serious complications and death.

High Risk Factor: None

Patient Living Situation: Patient lives with other person(s) in the home: Around the clock

Frequency Of Pain Interfering With Patient's Activity Or Movement: Daily, but not constantly

Does this patient have a Risk of Developing Pressure Ulcers: No

Does this patient have a Risk of Developing Pressure Ulcers:

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<?xml-sty
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"urn:h17-g
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# KeyHIE Transform™ Process

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- Status of submission is managed via Dashboard.

KeyHIE Transform powered by BridgeGateHealth About | Contact | Support  
1-866-739-0300

Sites Organization Promo Codes Payment Report Admin Dashboard Secure Delivery  
Logout

**Dashboard** Account Configuration Billing Order History Change Password Download Logout

Site: 1263 - ACTIVE ( Geisinger Health System (OASIS) )

Welcome **Jane Doe**

1 Day

Number of Files **1** Success **1** Errors **0**

[View Transaction Log Details](#)

Date	Source File Name	Generated File Name	Upload		Download CCD/PDF	Send	
			OASIS	Transform		To HIE	Secure Delivery
6/11/15 11:08	OASIS_Test_MSanchez. ...	321321321_Maria_Sanc ...	✓	✓	✓	✓	N/A





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IT Director, Geisinger Health System  
Director, Keystone Health Information Exchange  
[jryounkin@geisinger.edu](mailto:jryounkin@geisinger.edu)

Phone: (570) 214-8833



# The Camara Editor

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- Design rationale
  - Completes the interoperability landscape
  - Connecting all to the patient record.
    - Specialists, behavioral health and nutritional counselors, therapists
    - Everyone without an EHR
    - And maybe some of those *with* an EHR
  - Integrates with electronic health records, patient portals, and health information exchanges



# Camara

- View, create, and edit standards compliant documents
  - HL7 Clinical Document Architecture (CDA)
    - Continuity of Care Document (CCD)
    - Consolidated CDA (C-CDA) – four document types in current beta release
  - Extensible to **any template-driven CDA**
    - Quality Reporting Document Architecture (QRDA)
    - Personal Health Monitoring Reports (Continua-compliant PHMR)
    - Healthcare-Associated Infection Reports (HAI) for the National Healthcare Safety Network (NHSN)



# Camara

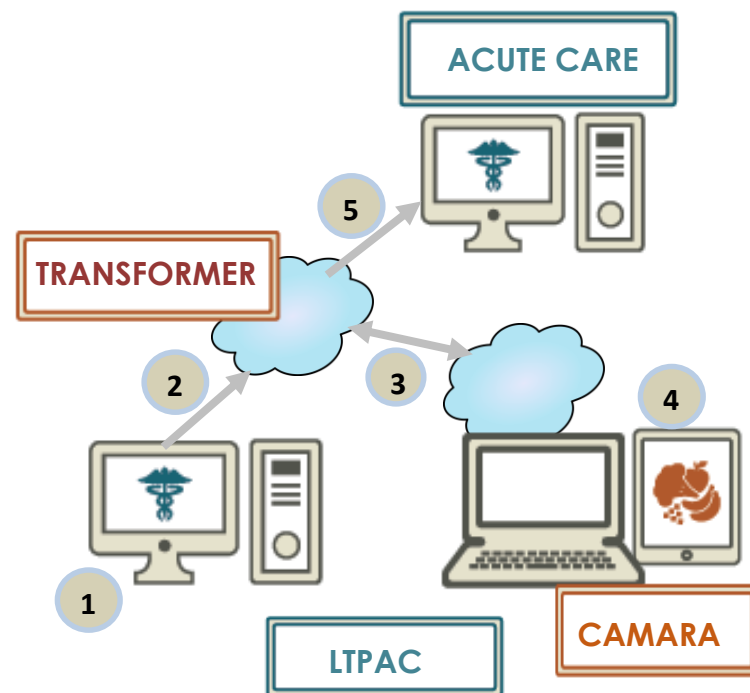
- Features:
  - Complete documents including clinical narrative and coded data
    - *De novo* documents
    - New versions, revisions, of existing documents
    - Integrate with HIE, clinical, and administrative systems for information reuse
  - Fast Healthcare Interoperability Resource (FHIR) data model
    - Rapid integration
    - Easy transition to C-CDA-on-FHIR
  - Small footprint
    - Mobile or browser deployment from cloud-based platform
    - Validated against current standards
    - Electronic health record (EHR), health information exchange (HIE), voice integration



# TRANSFORMER Use Case

- LTPAC TRANSFER TO ACUTE CARE

1. LTPAC provider pulls latest MDS/OASIS
2. MDS/OASIS sent to Transformer tool for conversion to CCD
3. Transformer sends CCD to Camara
4. Clinician completes transfer information within Camara
5. Camara returns completed CCD to KeyHIE





# Review Document Source

Camara
Home
Documents
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Patient

Manage

---

Documents
Hospital Discharge Summary [final] ✕

Print
Download ▾
Create New Document ▾

Rendered
[CDA XML](#)

**Hospital Discharge Summary**

<b>Patient</b>	Maria Sanchez
<b>Date of birth</b>	June 11, 1931, 00:00:00 +0000
<b>Sex</b>	Female
<b>Contact info</b>	100 Main St. Miami, FL 33136-0000
<b>Patient IDs</b>	Telecom information not available 321321321 2,16,840,1,113883,12,203
<b>Document Id</b>	9cb05b79-e20b-4dbf-96e1-5b6dd1006703
<b>Document Created:</b>	January 27, 2014, 15:46:14 +0000
<b>Care provision</b>	PCPR from January 23, 2014, 04:00:00 +0000 to January 27, 2014, 04:00:00 +0000
<b>Author</b>	Henry Seven
<b>Contact info</b>	1001 Village Avenue Miami, FL 33136-0000, US  Tel: 555-555-1002
<b>Document maintained by</b>	Community Health and Hospitals
<b>Contact info</b>	1002 Healthcare Drive Miami, FL 33136-0000, US  Tel: 555-555-1002

**Table of Contents**

- Allergies
- Medications
- Problems
- Functional Status
- Procedures
- Results

**Allergies**  
 Mon Jan 27 2014
 

Criticality	Sensitivity Type	Date Recorded	Status	Substance
Medium	Allergy	Mon Jan 27 2014	Confirmed	ALLERGENIC EXTRACT, PENICILLIN:null

**Medications**

Status	Started	Medication
Active	Mon Jan 27 2014	Levofloxacin 750 MG Oral Tablet
Active	Mon Jan 27 2014	Metformin 500 MG Oral Tablet

**Problems**  
 Mon Jan 27 2014
 

Problem	Type	Status	Onset Date
Aspiration pneumonia (disorder) (422588002)	Problem (5567006)	Confirmed	Mon Jan 27 2014
Smoker (finding) (77176002)	Finding (404684003)	Confirmed	Mon Jan 27 2014
Body mass index 30+ - obesity (finding) (162864005)	Problem (5567006)	Confirmed	Mon Jan 27 2014
Diabetes mellitus (disorder) (73211009)	Problem (5567006)	Confirmed	Mon Jan 27 2014

**Functional Status**

Name	Value Codeable Concept	Onset/Resolution Dates
Cognitive functions (311465003)	Mentally alert (248234008)	Mon Jun 01 2015 - Wed Jun 17 2015
Ability to walk (282097004)	Reduced mobility (8510008)	Mon Jun 01 2015 - Wed Jun 17 2015

**Procedures**



# Copy Document

Camara Home Documents About Patient Type Patient Name Manage Help McIlvenna, Sean

Documents Hospital Discharge Summary - CCD [final] X

Print Download Create New Document

Rendered CDA XML

### Hospital Discharge Summary

<b>Patient</b>	Maria Sanchez
<b>Date of birth</b>	June 11, 1933, 00:00:00 +0000
<b>Sex</b>	Female
<b>Contact info</b>	, FL 33136-0000
	Telecom information not available
<b>Patient IDs</b>	321321321 2.16.840.1.113883.12.203
<b>Document Id</b>	9cb05b79-c20b-4dbf-96e1-5b6dd1006703
<b>Document Created:</b>	June 19, 2015, 15:46:14 +0000
<b>Care provision</b>	PCPR from June 1, 2015, 04:00:00 +0000 to June 19, 2015, 04:00:00 +0000
<b>Author</b>	Henry Seven
<b>Contact info</b>	1001 Village Avenue Portland, OR 99123, US  Tel: 555-555-1002
<b>Document maintained by</b>	Community Health and Hospitals
<b>Contact info</b>	1002 Healthcare Drive Portland, OR 99123, US  Tel: 555-555-1002

Request Support

### New Document

**New Document Title**

**Sections to Copy [Select All](#)**

- Header
- Allergies
- Medications
- Problems
- Procedures
- Results

OK Cancel



# Header Copied & Editable

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Camara

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Documents

Emergency Room Transfer Note CCD [preliminary]

Header

Allergies

Functional Status

Medications

Problems

Procedures

Results

Optional Sections



Review

## Header

**Document Title \***

Emergency Room Transfer Note CCD

**Language \***

English

**Date \***

2014-02-07

03

**Confidentiality \***

Restricted

**Patient \***

Sanchez Maria

**Practitioner \***





# Modify Functional Status

Documents Emergency Room Transfer Note CCD [preliminary]

- Header
- Allergies
- Functional Status**
- Medications
- Problems
- Procedures
- Results

Optional Sections + Review

## Functional Status Copy Section

Text \*

Rich text editor toolbar with buttons for Bold, Italic, Underline, Bulleted List, Numbered List, Undo, Redo, Link, Table, and Grid.

[Hide Narrative](#)

Name	Value Codeable Concept	Onset/Resolution Dates
Behaviors demonstrated at least once a week [OASIS] (46473-5)	Difficulty making decisions (finding) (247585004)	Fri Feb 07 2014
Current ability: locomotion [OASIS-C] (57247-9)	Dependent on helper pushing wheelchair (finding) (413121008)	Fri Feb 07 2014
Current ability: feeding [OASIS-C] (57248-7)	Unable to eat (finding) (288885009)	Fri Feb 07 2014

Entry

- Behaviors demonstrated at least once a week [OASIS] + x ↻
- Current ability: locomotion [OASIS-C] x ↻
- Current ability: feeding [OASIS-C] x ↻

Request Support



# Add and Edit Problems

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About Patient Type Patient Name Manage

## Edit Condition

**Problem \***

Aspiration pneumonia (disorder)

[Add Translation](#)

**Type \***


Problem

[Add Translation](#)

**Status \***

Confirmed

**Onset Date [Exclude](#)**

Onset Date 2014-0 

**Abatement Date [Include](#)**

OK Cancel



# Review



Camara

Home

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Patient

Type Patient Name

Manage

Help

McIlvenna, Sean

## Allergies

Mon May 5 2014

Criticality	Sensitivity Type	Date Recorded	Status	Substance	Reaction
Medium	Allergy	Mon Jan 27 2014	Confirmed	ALLERGENIC EXTRACT, PENICILLIN;null	• Hives

## Functional Status

Name	Value	Onset/Resolution Dates
Behaviors demonstrated at least once a week [OASIS] (46473-5)	Difficulty making decisions (finding) (247585004)	Sat Feb 01 2014
Name	Value	Onset/Resolution Dates
Current ability: locomotion [OASIS-C] (57247-9)	Dependent on helper pushing wheelchair (finding) (413121008)	Fri Feb 07 2014
Name	Value	Onset/Resolution Dates
Current ability: feeding [OASIS-C] (57248-7)	Unable to eat (finding) (288885009)	Fri Feb 07 2014

## Medications

Status	Started	Medication	Dosage
Active	Mon Jan 27 2014	Levofloxacin 750 MG Oral Tablet	1/day
Active	Mon Jan 27 2014	Metformin 500 MG Oral Tablet	1/day

## Problems

Tue Jan 27 2014

Problem	Type	Status	Onset Date	Abatement Date
Aspiration pneumonia (disorder) (422588002)	Problem (55607006)	Confirmed	Tue Jan 27 2014	
Smoker (finding) (77176002)	Finding (404684003)	Confirmed	Tue Jan 27 2014	
Body mass index 30+ - obesity (finding) (162864005)	Problem (55607006)	Confirmed	Tue Jan 27 2014	
Diabetes mellitus (disorder) (73211009)	Problem (55607006)	Confirmed	Tue Jan 27 2014	

## Procedures

No information

Request Support



# SEE2Sea

- Surrogate EHR Environment (SEE)
  - Developed for MassHIE LTPAC use
  - Gone-live June, 2015
  - Orion integration into MassHIE
  - Augment Camara code base
- Camara
  - Extensible document types
  - FHIR integration
  - Template driven
- SEE to Sea
  - SEE vision, Camara extensibility plus
    - General API
    - Complete document type library
    - Upgrade user interface
    - Architect for national deployment



# Camara

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You are invited to view Camara “live” in the technology area.



# Questions?

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- For more information:
  - Lindsey: [lhoggle@eatright.org](mailto:lhoggle@eatright.org)
  - Jim: [jryounkin@geisinger.edu](mailto:jryounkin@geisinger.edu)
  - Mike: [mike.tushan@lantanagroup.com](mailto:mike.tushan@lantanagroup.com)