



eHEALTH INITIATIVE
Real Solutions. Better Health.

Business & Clinical Motivators Workgroup

Workgroup Meeting
July 28, 2015

Agenda

- New workgroup activities
 - Claudia Ellison, Director of Member Engagement, eHI
 - Leslie Kelly Hall, Senior Vice President, Policy, Healthwise
 - Tony Schueth, CEO & Managing Partner, Point of Care Partners
- Interactive interview:
 - Joseph Herman, MD, Director, Pancreatic Cancer Multidisciplinary Clinic at Johns Hopkins Sidney Kimmel Comprehensive Cancer Center



New Opportunity



Tony Schueth
CEO & Managing
Partner
Point of Care
Partners



Leslie Kelly Hall
Senior Vice
President, Policy
Healthwise



New Opportunity

- Goal: explore efforts around patient-consumer tools and mobile apps to better engage and empower patients
 - Identify best practices and resources
- From the Roadmap:
 - Work with patient-consumers, healthcare providers, payers and vendors on a toolkit of existing useful resources available to assist in their efforts to integrate health IT into daily workflow and processes.



Workgroup Objective

- Contribute to the business case for health IT by identifying, understanding, and communicating successful examples of innovative uses of health information technology
 - Compendium of case studies derived from interactive interviews
 - Report on best practices



Interactive Interview

Joseph Herman, MD
Co-Director
Pancreatic Cancer
Multidisciplinary Clinic
Johns Hopkins Sidney
Kimmel
Comprehensive
Cancer Center





Using the Military Acuity Model to Increase Productivity and Reduce Preventable Care Encounters in a Pancreatic Multidisciplinary Clinic

Presented By: Shereef M. Elnahal, MD, MBA, PGY-3

December 22nd, 2014

Background

- Facilities have constraints on capacity, set against a growing patient volume
- Multidisciplinary clinics: a specialty care model with myriad benefits^{1,2}.
 - Changes in diagnosis (up or down-staging)
 - Increased enrollment in clinical trials
 - Improved clinical outcomes
- Workflow challenges, financial concerns hinder broader adoption of MDCs

¹Pawlik TM, Laheru D, Hruban RH, Coleman J, Wolfgang CL, Campbell K, et al. Evaluating the impact of a single-day multidisciplinary clinic on the management of pancreatic cancer. Ann Surg Oncol. 2008 Aug;15(8):2081-8.

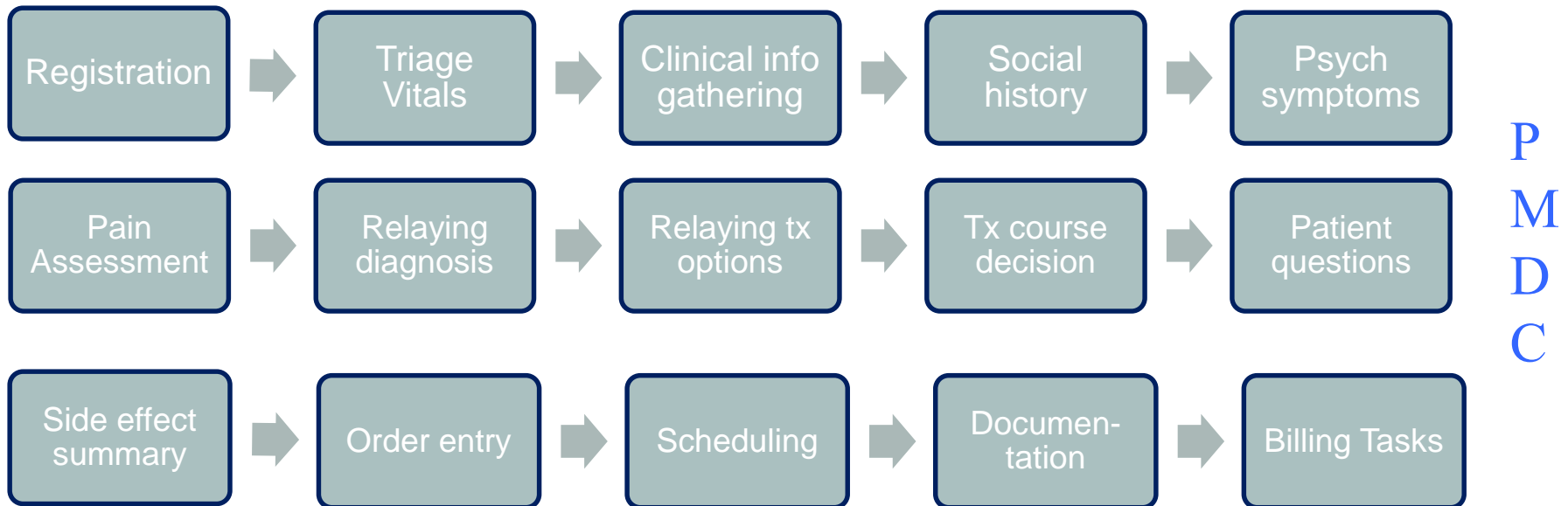
²Katz MHG, Wang, H, Fleming JB, et al. Long-Term Survival After Multidisciplinary Management of Resected Pancreatic Adenocarcinoma. Ann Surg Oncol 2009; 16:836-47

Background

- On the provider side, capacity to evaluate and treat a growing number of patients in the MDCs *safely* is limited by:
 - Number of available **physician** hours (slots)
 - Number of available **nursing/resident** hours
 - Number and **skill level** of **support staff**
 - Physical **clinic space/rooms**
 - Timely scheduling of diagnostic tests (e.g., imaging, biopsies)
 - “Siloed” staff and resources

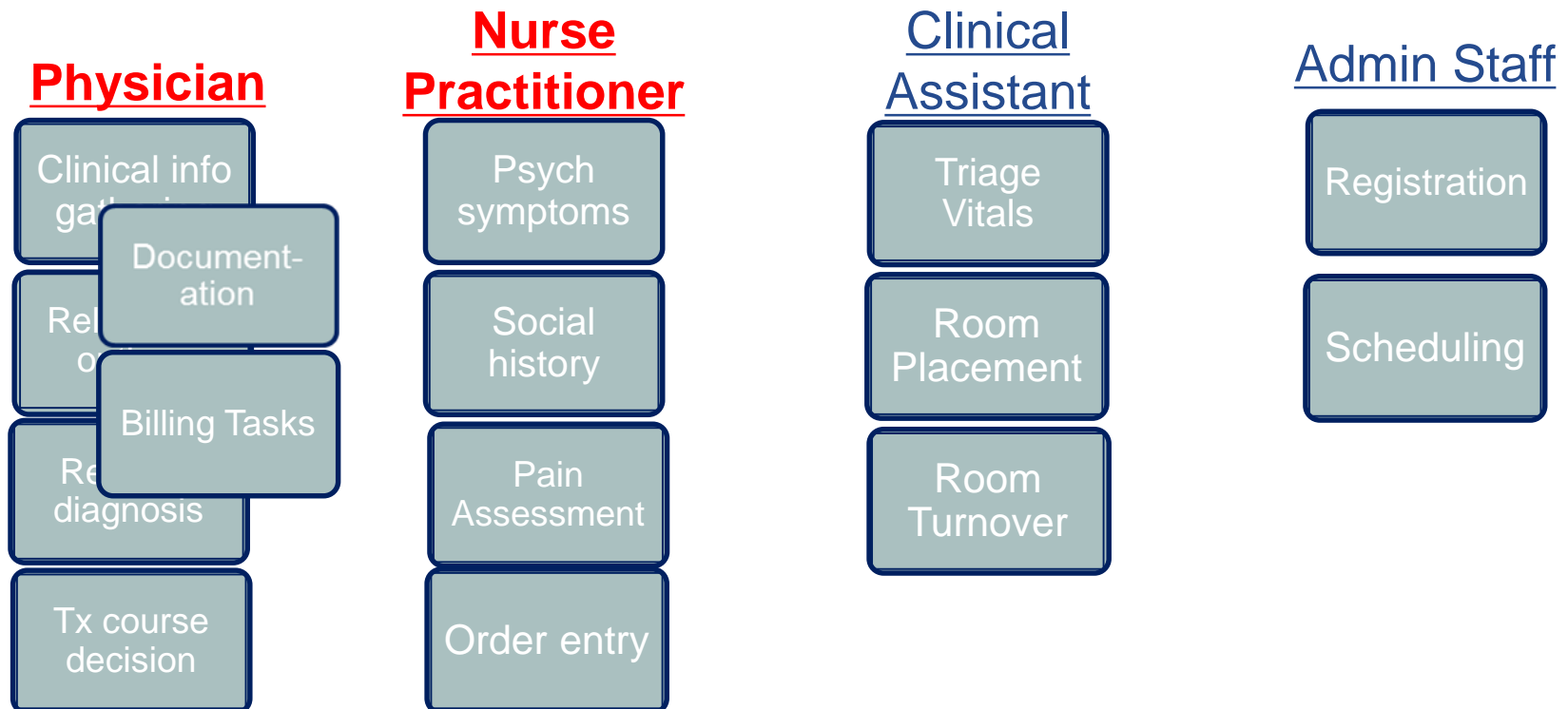
Background: Capacity

- Another way of viewing constraints on human performance: **task saturation**
 - Workload per FTE can be defined in terms of clinical “task load” required to evaluate, treat, and follow patients.
 - Must be analyzed relative to individuals’ capacity to complete tasks, relative to the task load placed on them.



Background: Task Saturation

Task burden is placed on a limited number of staff (particularly to physicians/residents and nurses), to the point of saturation: **at which point, tasks are missed.**



Background: Task Saturation



- When clinical tasks are missed or completed incorrectly:
 - Delays in clinic occur, limiting the “safe” level of clinic volume capacity (an *efficiency* problem).
 - Preventable clinical problems occur (*quality* problem)
 - Not adequately evaluating a patient’s pain in clinic → exacerbation of pain.
 - Incorrect cancer staging or treatment plan
 - Avoidable tasks are required for mitigation (*cost* problem)
 - Patient with pain comes to the ED for acute care, leading to possible admission (or re-admission).
 - Patient with incorrect staging could undergo unnecessary, invasive procedures (e.g., surgery)

Background: Consequences of Missed Tasks

Table 2 Potential Impact of Process Arbitrage for Selected Tasks on Quality and Costs in a Pancreatic Multidisciplinary Clinic

Missed Task and Preventable Problem	Mechanism of Intervention	Frequency of Occurrence	Projected Annualized Savings, US\$ ^a
Failure to evaluate a patient's abdominal pain in clinic, leading to ED visit for uncontrolled pain	Ensure that pain specialist sees each patient with pain score >4/10	8% of patient census	\$4,394.50
Failure to identify unresectable or metastatic disease at presentation, leading to surgery without resection	Ensure more time is allocated to physician assessment and imaging review	3% of patient census	\$10,514.00
Failure to explain equivocal or uncertain disease stage to patients (borderline resectable or otherwise unknown disease stage), leading to downstream phone calls	Ensure more time is allocated to addressing patient's questions (longer physician counseling time)	30% of patient census	\$900.00
Total savings			\$15,808
Average annual operational costs ^b			\$283,561
Margin gained			5.6%

Objectives

- Which tasks that are **most critical** to complete for a specific clinic?
- Which tasks are most **at risk** of not being completed?
- Without proportional increases in FTEs or capital expenditure, how can we ensure these tasks are completed **on time**?

Methods:

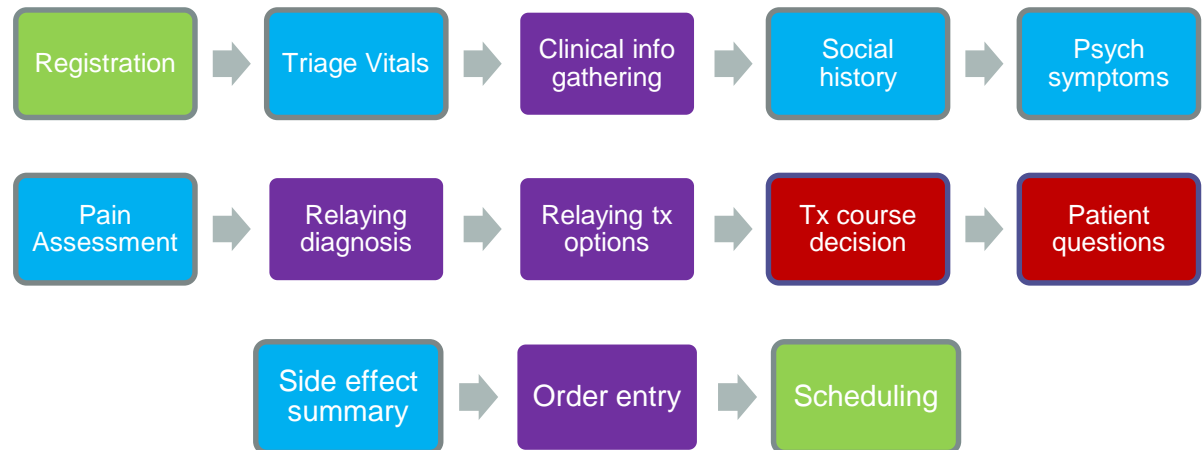
The Military Acuity Model

- The Military Acuity Model focuses on high-value task execution by:
 - **Process Mining:** Determining which discrete set of tasks, if missed, are *most likely* to lead to clinic delays and downstream clinical problems.
 - **Cognitive Capacity Modeling:** Determining the task load at which each team member is likely to begin missing tasks.
 - **Process Arbitrage:** Re-allocating *fungible* tasks away from physicians/residents/nurses/extendors, to *support staff* safely – before they ask for help.

Methods: Process Mining

- Step 1: Identify which clinical tasks are **fungible**, or amenable to completion by non-physician personnel *safely and comprehensively*.
- Key insight: MOST tasks are fungible:

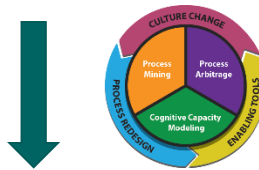
- Green = Performable by any staff member, including administrative/support staff
- Blue = Performable by staff with minimum level of clinical training (e.g., clinical assistant) or higher
- Yellow = Performable by staff with any level of clinical decision making/prescribing power (NP, PA, MD)
- Red = Performable by physician only



Methods:

Cognitive Capacity Modeling

- Step 2: Correlate task completion data to clinic room times (surrogate for delays) and downstream encounter data (quality and safety endpoints).
 - Provided de-identified, retrospective clinical data for patients treated in MDC to Process Proxy (completion of information-gathering tasks)
 - Recorded times physicians spent in patient rooms
 - Recorded downstream ED visits and patient phone calls from EMR



- **Final list of high-value clinic tasks** which are correlated with **both clinic delays AND frequency of downstream encounters**
- **Cognitive capacity limits for each staff member**

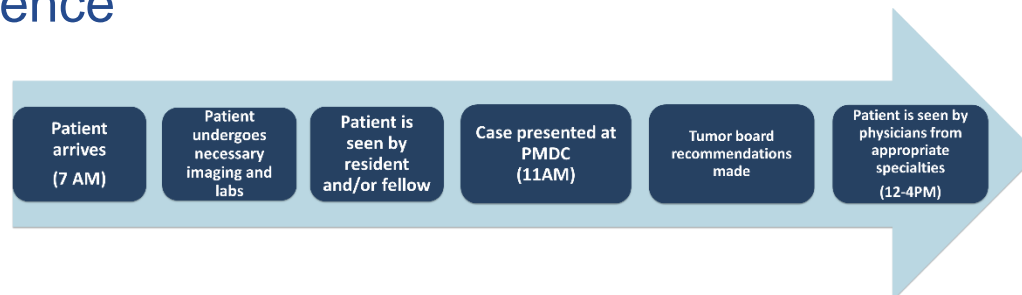
Methods: Process Mining

- Final List of High-Value Tasks

	Tasks
1	Determine patient's assumed disease stage prior to clinic
2	Obtain or perform necessary imaging studies
3	Determine which therapies, if any, the patient has received to date
4	Assess patients' comorbidities, and offer treatment options accordingly
5	Assess patients' social risk factors, and offer treatment options accordingly
6	Assess patients' pain level and treat accordingly

Methods: Process Arbitrage

- Step 3: Re-allocate fungible tasks to support staff prospectively.
 - Existing staging information for each patient was collected prospectively by Lindsay Parish, clinic coordinator.
 - Primary assessment of patients was re-allocated to specialty most appropriate for disease stage (quarterback).
 - Prior imaging was acquired one week before clinic day. The need for more imaging was determined at that time, and authorization/acquisition of the study occurred before the MDC conference



Methods: Process Arbitrage

- Other tasks re-allocated:
 - If emergency (e.g., pulmonary embolism) was evident on imaging and physician paged, patient pass-off and admission was handled by APN (Mary Hodgins).
 - Pain assessment was conducted earlier in the clinic day
 - A dedicated pain specialist ensured that patients were prescribed narcotics and/or received pain-block procedures
 - A pre-defined high value task: billing and documentation
 - Created one “encounter” in epic for all specialty notes and orders
 - Coordinator ensured all notes and orders signed/billed within one week

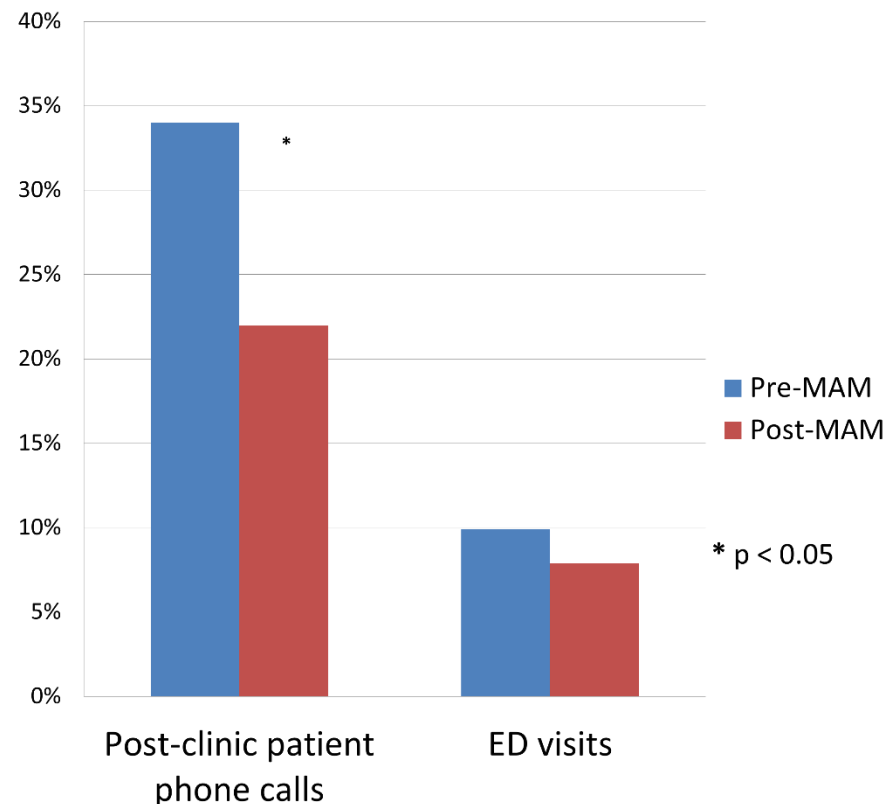
Results: Clinic Volume

- Clinic Volume Changes after MAM Implementation

Volume Metric	Pre-Implementation	Post-Implementation	Percent Increase	P Value
Mean Patients Per Day	4.00	5.24	31%	<0.001
Mean Patients Per Room Per Day	1.6	2.6	57.3%	<0.001
Mean busy season (January – June) patient volume	5.21	10.23	96.4%	<0.001
Clinic days with census ≥ 7 patients	4.0%	14.0%	350%	<0.001
Clinic days with census ≥ 8 patients	0.5%	6.7%	1340%	<0.001

Results: Quality Outcomes

- Patient Care Utilization and Purchased Care



Conclusions

- Insights on Quality
 - Possible to identify high-value clinical tasks, which correlate with adverse quality and efficiency metrics
 - Proactive planning to near 100% high-value task completion can yield reductions in preventable care encounters

Conclusions

- Insights on Efficiency and Costs
 - Proactive planning around high-value tasks can achieve higher clinic volumes with constant staffing: **human performance**
 - Reducing preventable care encounters saves on purchased care
- With higher or equivalent quality at lower costs, these data suggest that MAM can deliver higher value care.

Discussion

- What problem/issue is your organization seeking to address?
- What approach did your organization use to address this problem? How is technology being used to facilitate this approach?
- What were the outcomes of this project, both anticipated and unanticipated?

