

What is I-PrACTISE and Why Does It matter to Clinicians?

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- Disclosures: EPIC is not paying me to give this talk. Neither is any drug company. I wish they were.




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I-PrACTISE

Improving Primary Care Through Industrial and Systems Engineering




The Karsh Initiative

Ben-Tzion (Bentzi) Karsh, PhD

The Challenge

“Primary care physicians are overwhelmed by crammed schedules, inefficient work environments, and un-rewarding administrative tasks ... the quality of physician-patient interactions... has been declining. What’s more, primary care has become increasingly complex. (Bodenheimer, 2010).






I-PrACTISE

 Improving Primary Care Through Industrial and Systems Engineering

Primary care needs help from Industrial and Systems Engineering!



Beasley JW, Carayon P, Smith MA. Improving the Quality and Efficiency of Primary Care Through Industrial and Systems Engineering – A White Paper. December, 2013.
<https://www.fammed.wisc.edu/sites/default/files/webfm-uploads/documents/research/i-practise/i-practise-white-paper.pdf>

The I-PrACTISE Vision

- Vision:
 - The care of patients will be improved and the practice of primary care medicine will become more efficient though new knowledge and techniques created by the collaboration between Industrial Engineering and the primary care specialties

“The Basic Science of Primary Care”

The Airlines and Primary Care




We knew they would work in 1929, but there was a lot of work to be done on the basic science, the technology, the implementation and the training.

www.acepilots.com/pioneer/airscan0031.jpg

A (very) Brief History

- Started as informal collaboration in 2000
- Bentzi realized, when observing primary care, that it's a mess!
- Studies Where WREN Played a Role
 - Quality of work life of clinicians and staff
 - Medical errors in primary care
 - Health hazards to the elderly in primary care
 - Complexity and workflow in primary care
 - Use of systems and technology to support primary care


I-PrACTISE
Improving Primary Care Through Industrial and Systems Engineering
WWW.I-PrACTISE.ORG

Information Chaos in Primary Care: Implications for Physician Performance and Patient Safety
John W. Beasley, MD, Tisha B. Wettersock, MD, MS, Jon Yonke, MD, PhD, Jamie A. Lapin, MS, Paul Smith, MD, A. Jay Rivera-Rodriguez, PhD, and Ben-Tzion Karsh, PhD


Development of a primary care physician task list to evaluate clinic visit workflow
Tyasha B. Wettersock,^{1,2,3} Jessica A. Lippitt,^{1,2} Daniel J. Kravitz,^{1,2} G. Talley Holman,^{1,2} John W. Beasley,^{1,2} Ben-Tzion Karsh^{1,2,3}

Employed Family Physician Satisfaction and Commitment to Their Practice, Work Group, and Health Care Organization
Ben-Tzion Karsh, John W. Beasley, and Roger L. Brown

How Many Problems Do Family Physicians Manage at Each Encounter? A WReN Study

Workflow? Schmerkflow! Implications for Health IT

Quality of Work Life of Independent vs Employed Family Physicians in Wisconsin: A WReN Study



Results of Studies Done with WREN

- Quality of Worklife
 - “It’s the relationships, stupid!”
 - With self, colleagues, organization and patients
 - Substantial differences between groups
 - Smaller, more independent groups more satisfied
 - » Karsh BT, Beasley JW, Hagenauer M, Brown R. Employed Family Physician Satisfaction and Commitment to their Practice, Work Group, and Health Care Organization. *Health Serv Res* 2010;45(2):457-475.
 - » Beasley JW, Karsh BT, Marchand L, Sainfort F, Hagenauer M. What is the difference in the quality of work life between independent physicians and those who are employed by health care organizations? A WReN study. *Annals of Family Medicine* 2005;3:500-506.
 - » Beasley JW, Karsh BT, Sainfort F, Hagenauer ME, Marchand L. Quality of work life of family physicians in Wisconsin’s health care organizations: a WReN study. *WMJ* 2004;103(7): 51-55

Results of Studies Done with WREN

- Reporting of Medical Errors in Primary Care
 - (remember the IOM report?)
 - Were able to present testimony to legislature that helped to block proposal for mandatory error reporting
 - Supported idea of a voluntary system
 - Beasley JW, Hamilton K, Karsh BT. Design elements for a primary care medical error reporting system. *Wis Med J* 2004;103(1):56-59.

Results of Studies Done with WREN

- Health hazards to the elderly in primary care
 - Using engineering definition of hazard
 - Cause of most hazards and errors:
 - Information Chaos!**
 - Information Overload
 - Information Underload
 - Information Scatter
 - Information Conflict
 - Information Error
 - Beasley JW, Wetterneck T, Temte J, Lapin J, Wetternick T, Smith P, Rivera AJ, Karsh BT. Information Chaos in Primary Care: Implications for Physician Performance and Patient Safety. *Jr Am Board Fam Med* 2011;24:745-51

Results of Studies Done with WREN

- Complexity and Workflow
 - Task Analysis (the tool)
 - Workflow? Schmerkflow!
 - Because we are patient-centered, there is no organized workflow – and should not be!
 - Technology and systems have to be designed to support clinicians in this reality
 - Wetterneck TB, Lapin JA, Krueger DJ, Holman GT, Beasley JW, Karsh BT. Development of a Primary Care Physician Task List to Evaluate Workflow and EHR Use. *BMJ Qual Saf* doi:10.1136/bmjqs-2011-000067
 - Workflow? Schmerkflow! The Myth of Workflow in Primary Care and Why It Matters for Electronic Health Record Design and Implementation. Submitted, JABFM

Results of Studies Done with WREN

- Use of systems and technology to support primary care
 - What happens when we use the in-box?
 - PGT -> PGU!
 - Pre-visit Planning
 - Asan O, Smith PD, Montague E. More screen time, less face time - implications for EHR design. *J. Eval Clin Pract*, 2014; DOI 10.1111/jep.12182
 - Wetterneck TB, In submission

Results*: Physician Pre-visit SA

****Increase in info available by 1 point across measures****

Scale: 1 – Not at all/None, 3- Some, 5- Pretty much, 7 - A great deal / completely	% inc.	Trial:	Trial:	Pre-
		INT	control	trial
		Mean	Mean	Mean
All information you need for the visit	24	4.8	3.9	3.8
Status of patient's ongoing medical problems	25	4.8	3.9	3.8
Visits to other health professionals	32	4.9	3.7	3.4
Medications	26	5.0	4.0	3.8
Test and procedure results	28	5.1	4.0	3.8
Concerns about cost of care	96	4.1	2.8	2.7
Patient's health concerns today	30	4.9	3.8	3.5
Patient's main concern for today	22	5.1	4.2	3.9
What needs to be done during visit	22	5.0	4.0	3.8

*Unadjusted analyses

Additional I-PrACTISE Work

- 2 Book Chapters

- Wetterneck TB, Lapin JA, Karsh BT, Beasley JW. Human Factors and Ergonomics in Primary Care. Chapter 44 in Carayon P., (Ed) Handbook of Human Factors and Ergonomics in Health Care and Patient Safety 2nd edition, 2012. Pages 763-775. CRC Press, Boca Raton, USA
- Beasley JW, Hamilton K, Karsh BT. Human factors and ergonomics in primary care. Chapter 50 in Carayon P (ed.) Handbook of Human Factors and Ergonomics in Healthcare and Patient Safety, Lawrence Erlbaum Associates publishers, 2007.

Additional I-PrACTISE Work

- Short Papers

- Sinsky, C, Beasley JW. Texting While Doctoring: A Patient Safety Hazard. Ann Intern Med. 2013 Dec 3;159(11):782-3
- Sinsky C, Beasley JW, Baron RJ, Simmons G. Technology and Policy: Principles for Higher Value Primary Care. Annals of Internal Medicine 2014;160:727-729
- (Pending – What is the cost of not dictating?)

- Position paper for the Office of the National Coordinator

- Krist AH, Beasley JW, Crosson JC, et al. Electronic health record functionality needed to better support primary care. J Am Med Inform Assoc 2014;0:1-8.

Next Steps

- Continue the formal development of the ISyE and Primary Care Collaboration
- Next Conference: Madison, April 12-14, 2015
- Colloquia
- Next major project:
 - Understanding Primary Care Teamwork in Context: Implications for HIT design
 - 1 R01 HS 22505 – 01A1
 - Wetterneck, TB

Karsh Education and Research Fund

Industrial and Systems Engineering (ISyE) Professor Ben-Tzion (Bentzi) Karsh, PhD, was passionate about how human interaction with technology can improve healthcare safety and quality. Academicians, clinicians, and patients consider his research to be among the best in the world, though tragically, his 2012 death cut his work short.



Dr. Karsh's legacy lives on through I-PRACTISE, a collaboration of experts in ISyE, family medicine, internal medicine, pediatrics, and related disciplines. They are developing new collaborative research that will improve healthcare quality, efficiency, effectiveness, and safety.

Through the Ben-Tzion Karsh Education and Research Fund, we can continue this important work. But we need your support.

<http://www.fammed.wisc.edu/i-practise/karsh-education-research-fund>
