“A Curious Approach to Improving Processes in our Medical Offices”

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Thanks
Outline

• Objective
• CPG Background
• How the story starts
• Why – what is our biggest problem – Access
• Clemson
• IE, IE for Health care
• Our Projects
• Process and experience
• Takeaways/conclusion and next steps
Conway Medical Center & Conway Physicians Group

• Conway Medical Center, established in 1928 as Horry County's first hospital, is a nonprofit medical center & is one of the county’s largest employers with over 1400 employees.

• The facility’s medical staff is comprised of approximately 200 physicians, representing 30 specialties. CMC also shares Conway Physicians Group which includes 22 physician practices including, but not limited to, 2 rural health practices and 9 patient centered medical homes. Our specialties range from Internal Medicine, OBGYN, Cardiology, Neurology, and Bariatric Surgery.

• Conway Medical Center recently announced their advancement to care for cardiac patients with a new partnership with Duke Health to ensure top-quality care for this area’s many heart patients.
Be like Curious George, start with a question.....

“A blank canvas is a brilliant opportunity”
Every story has to start somewhere (Butterfly effect)?
• Realized when learning about IE that there are some fascinating applications to every business.
• Challenge normal way of thinking
• Opportunity for new approach to consultants who can offer a truly fresh perspective for old and new problems.
• Asked what are some of the biggest challenges in taking care of our customers? ACCESS
Did some research and found some perspective for finding new ways to look at things

• Francesca Gino, Harvard Business School, behavioral scientist wrote a couple of books about looking at things from different perspectives.
Some things to overcome when trying to approach the same old problem differently

• Confirmation Bias

• Hindsight Bias

• The Curse of Knowledge
Tips for looking at things anew

• Novelty

• Curiosity – Act like a Toddler

• Perspective

• Diversify

• Authenticity
Clemson University

• Founded in 1889, Clemson University is one of the country’s most selective public research universities, Clemson University serves a uniquely driven and highly accomplished student body. Ranked as the 23rd best national public university by U.S.News & World Report, Clemson is a science- and engineering-oriented college dedicated to teaching, research and service.

Fun Facts:
• Located on 1,400 acres in the foothills of the Blue Ridge Mountains surrounded by a lake and its own forest.
• In 1917, the entire senior class enlisted in World War I.
• Clemson’s campus houses South Carolina’s largest bur oak tree — the Clemson Centennial Oak. It’s more than 100 years old.
• Clemson has study abroad programs on every continent – except Antarctica.
Industrial Engineering

What is the focus of Industrial Engineers?
• Industrial Engineers determine the most effective methods with people, machines, materials, information, and energy to make a product or provide a service.

In general, what are examples of IE work?
• More efficient and more profitable business practices
• Better customer service and product quality
• Making work safer, faster, and easier
• Increased ability to do more with less
In particular, what are examples of IE work?

- Manufacturing, Production, and Distribution
  - Facility Planning & Layout
  - Inventory Control & Inventory Management
  - Production Control & Shop Floor Control
  - Standard Data Development & Time Studies
- Supply Chain Management
- Project Management
- Process Engineering and Productivity
- Ergonomics & Human Factors
- Quality Measurement and Improvement
- Change Management
Industries That Hire Industrial Engineering Majors

- Building, Developing, & General Contracting Services
- Chemical Companies
- Communication Services
- Computer and Electronic Products Manufacturers
- Consulting Services
- Electrical Equipment, Appliance, & Component Manufacturing
- Engineering Services
- Federal Government
- State and Local Government
- Investigation & Security Services

- Medical (Hospitals, Medical Equipment & Medical Suppliers)
- Paper Manufacturing
- Petroleum & Coal Products
- Pharmaceutical Companies
- Plastics & Rubber Products
- Personal Care Products
- Textile Mills
- Transportation Services
- Transportation Equipment
- Utilities
- Wood Products
- Wholesale Trade
A review of engineering in everyday life.

How Industrial Engineers Will Save Health Care

By Shayna Pepin

December 12, 2012 Volume XVIII Issue II

Industrial engineers possess the knowledge, training, and experience needed to implement solutions to improve inefficient systems, like American healthcare.

Conclusion

The daunting task of healthcare reform in the United States will require an approach that is not only innovative and creative, but also one that capitalizes upon the application of proven analytical processes to improve systems. The unique profession of industrial engineering incorporates human factors with design, and capitalizes upon the effective use of the latest technology. This unique set of skills is crucial to the analysis of countless systems in today’s technology-based world. The health care system in particular has much to gain through the thorough application of the industrial engineering principles.
Clemson Industrial Engineering

U.S. News & World Report Rankings
[ Public Graduate Department Rankings ]

Industrial Engineering

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<th>Year</th>
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IE Undergraduate Enrollment

- 17
Clemson Industrial Engineering Capstone Design Experience

Offered each Fall and Spring Semester

• Seeks partners to sponsor capstone (senior design) projects. Previous projects have yielded demonstrable monetary benefits to the sponsors, have helped sponsors recruit future employees, and have received media coverage highlighting successful university/corporate collaborations.

• Partners may consider continuing their projects for additional semesters in the form of a sponsored an additional capstone (senior design) project, recruiting students from these projects into summer internship or co-op programs, or funding sponsored graduate research for a more thorough and focused study.
Capstone Project Objectives

• Students chose field of study for their capstone project and healthcare was an option to select.

• Conway Physicians Group was interested in fresh perspectives on various initiatives to improve access and standardization.

Acute Care Clinic
2 teams assigned to develop a same day, open access-walk-in medical clinic.

Scheduling
2 teams assigned to improving physician schedules to ensure/improve revenue generations & modeling, analyzing, and recommending process improvements for scheduling procedures.
In January of 2019, Conway Physicians Group will open an “Acute Care Clinic” called “Care Now”, which much like a Minute Clinic, which utilize nationally recognized protocols to diagnose and treat minor health conditions, perform health screenings, monitor chronic conditions and dispense vaccinations at much lower prices than a hospital. It is usually staffed with advanced degree nurses known as nurse practitioners who treat routine maladies. We have asked Clemson IE students to assist with this model.

Clemson IE Deliverables:
- Create an Acute Care Clinic that: C.A.R.E.S
  - Creates a resource for expedited medical care
  - Adapts to the changing needs of patients
  - Reduces demand of emergency departments and primary care offices
  - Establishes a profitable mean of care for CPG
  - Satisfies healthcare demands of a growing population
- Priced list of services
- Hours of operation
- Recommended staffing levels: determine wages, wait times, and associated services
- Yearly expected revenue and profit estimate
- Basic building design layout
- Simulation Model
Deliverable Examples:

- Flyer to educate patients on ER & Urgent Care
- Direct Scheduling Module
- Office Layout
- Kiosk Recommendations
- Office employee and facility cost estimations
Scheduling Team Deliverables

- Access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and achieving health equity for all patients. Timeliness of care is of the utmost importance in order to achieve the best health outcomes, as those with a usual source of care have better health outcomes, fewer disparities, and lower costs. can gain by collaborating with industrial engineering students or other backgrounds outside the field of health care in order to truly understand the barriers to accessing health services in relation to scheduling and accommodating patients according to their severity and immediate health needs.

- Our scheduling team also researched correlations between no shows and primary insurance and additionally found correlation between no shows and Press Ganey patient satisfaction scores.

Clemson IE Deliverables:

- Standard Operating Procedure Documents
- Capacity Utilization Excel VBA Tool
- Process Mapping
- Metric Identification
- Press Ganey No Show Correlation
- Detailed Summary of Academic Literature (Scheduling techniques, Reason for “No-Show”, etc.)
- Documentation for Incentive Programs
- Standard Patient Info Template
- Standardization in the scheduling process
Deliverable Examples:

- Capacity Utilization Tool
- Current and Future State Scheduling Review
- Patient Satisfaction Correlation
- Missed Profit due to No Shows
- Patient Scheduling Protocol
Post Capstone

- One strength of utilizing Clemson Engineering students for this project was that it enabled those trained in the engineering field to take a fresh look at familiar processes, see their problems and then find better ways to fix them. Precepting the Clemson Industrial Engineering students was an exceptional opportunity to pay forward the extraordinary work of our own preceptors.

- By mentoring these students, we contributed to enhancing their learning experience in the field of healthcare outside of their previous academic curriculum. We also recognized the importance of advanced engineering individuals who can undoubtedly contribute to the quality of healthcare in our organization.

- Students spending valuable time in our physician office often renewed energy to those who worked closely with them, including our medical providers. Observing that proverbial light bulb going off with the students is extremely rewarding and questions and inquisitiveness also challenged our knowledge and helped assist us in keeping up with the latest knowledge and current opportunities that we may have not explored previously.

Conway Physicians Group has implemented many of these recommendation made by the Clemson IE students including:

- Capacity Utilization is reviewed on a weekly basis and shared with all of the physician group to understand and improve access

- Active planning for our “Care Now” clinic and incorporating tools such as self scheduling, protocols, staffing, and layout presented by students

- Standardizing scheduling process and understanding methodology around double booking to decrease no show rates.

- Sharing Press Ganey Scores with providers on a monthly basis
Takeaways

• Fresh Perspective – A non-biased viewpoint can be really helpful, question common assumptions.

• Challenge norms – If you have been doing something the same way for a long time there is probably a good reason for it? Change equals a loss, Why x 5. People think you are smarter when ask questions.

• OK to be uncomfortable, not have all the answers

• Energized spirit – Provider and staff engagement, spark curiosity and innovation from them.

• We forget the experience of being inexperienced counteracts the misleading feeling of knowing.
More Takeaways

• Learn to be quiet, listen to the questions and help steer folks to where answers might be.

• Value of intellectual humility. *When you think you know everything you have stopped growing.*

• Should vs. Could (looking at many different options)

• This is FUN