How to Implement QI in Perfusion Utilizing the EMR

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Disclosures

- The presenter has no conflicts of interest

History

Electronic Medical Record

- Most perfusion teams utilized EMR built by our pump manufacturers
  - EMR can be basic
  - Limited ability to customize (must be within original framework)
  - Framework may have become an unsupported operating systems, (Foxpro/JoCap)
  - Most EMR were centered around adult perfusion

History

Electronic Medical Record

- Most perfusion teams utilized EMR built by pump manufacturers cont.
  - Some do not have the ability to querying data, or may pose an inability for the individual institutions to run queries (languages/JoCap)
  - Do not have the ability to connect/communicate with Epic (manually uploading charts into epic via media manager PDF)
  - Epic’s inability to work with us to make a perfusion page (no outlook for perfusion specific module, anesthesia only record)

- Reagor, J. A Dedicated Perfusion Electronic Medical Record with Discrete Epic Integration. JECT 2017;49:291-298
Introduction

• We started to look at different EMR options due to previously stated limitations
• Top Five requirements for new EMR
  1. Tech support for system
  2. Ability to run queries (QI). ?? On our own
  3. Ability to connect/communicate with Epic
  4. Ability to customize to our specifications
  5. Ability to dump previous data fields into current database (old Jocap charts/SQL)

Quality improvement?

• Model for Improvement key principles consist:
  – Forming a team
  – Setting Aims/Goals
  – Establish Measures
  – Select Changes
  – Test Changes
  – Implement Changes
  – Spread Changes

www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprove.aspx
Quality improvement model
NCH Perfusion department

- **The Plan-Do-Study-Act (PDSA) cycle**
  - Framework utilized to test changes in the work setting
  - **Plan it**
  - **Try it**
  - **Observe the results**
  - **Acting on what is learned**
  
  [Link](https://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx)

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Quality improvement model
NCH Perfusion department

- **Plan it:** What are we trying to accomplish?
  - We added two new perfusionists with different levels of experience (4, and 12yrs), almost half of team
  - With this new dynamic we wanted to reduce perfusionist to perfusionist inconsistencies
  - Do any of our inconsistencies support better patient management/outcomes

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Quality improvement model
NCH Perfusion department

- **Try it:** What do we do differently
  - Discussed individual management of patients while on bypass with in our protocol.
    - **Ex:** Heparin management with HMS
  - After this discussion with the team we came up with specific parameters we felt were important for patient management and outcomes on bypass
  - Will these parameters show that a difference in technique yields better patient outcomes

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Quality improvement model
NCH Perfusion department

- **Observe it:** How do we observe these parameters
  - **Biggest obstacle:** Build a report to show how each of us manage our cases and what if any differences will we see within these set parameters
  - Utilizing our new EMR to generate a compliance report for every case (sent after every case via email at chart closure)
Quality improvement model
NCH Perfusion department

- Act on it: Do we see differences in our compliance reports
  - During our monthly 1:1 staff meetings we review our compliance reports
  - What procedure was done, was there anything different about the case
  - Review parameters and situations on pump that could cause out of range parameters
  - What actions were taken to address OOR parameters
Quality improvement model
NCH Perfusion department

- **Act on it:** Do we see differences in our compliance reports
  - Does the team or individual we have certain parameters continuously OOR
  - Implemented a query tool within the compliance report data
  - Quarterly review of department performance metrics
  - Practice change implementation

Summary
NCH Perfusion department

- **Keys to implementing QI to insure success**
  - Forming the team: must include the right team members, must have team buy in, involve the critic
  - Setting aims/goals: should be time-specific and measurable, have team input to direct
  - Establishing measures: use quantitative measures to determine if change leads to improvement
  
  http://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx

Summary
NCH Perfusion department

- **Keys to implementing QI to insure success**
  - Selecting changes: Ideas for change may come from those who work in the system or experience (worker bees)
  - Testing changes: PDSA cycle
  - Implementing changes: test on a small scale, learn from test, refine the change through PDSA cycle
  - Spreading changes: successful implementation of a change, remember to give the why!!!
  
  http://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx
Questions ???