MAYO CLINIC

# Using TG-275 to steer your practice, not set it

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From Page to Clinic – Bringing Good Ideas to your Physics Group session
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## Learning Objectives

Upon completion of my talk, the audience should be able to:

1. State the major steps in implementing a robust chart checking program in their clinic that utilizes the principles spelled out in AAPM literature.
2. Understand some of the rules that make a good checklist
3. Understand the role that automation and standardization play in the future of chart QA

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## Conflict of Interest Statement

- None

- Would love to have some. ☺

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## Quick Overview

- Where to begin
- How to maintain
- Now what?

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## Where to begin

- "Make a plan" (duh?)
- My plan
  - Phase 1
    - Start a "paper" checklist (if don't already have one)
    - Full group buy in (sort of…)
  - Phase 2
    - Improvement cycle
    - Standardizations
  - Phase 3
    - Compare to National "standards"

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## Phase 1 – How did I get involved?

- ~Circa 2014, I was a residency program director with 4 residents and 6 or 7 staff physicists checking charts
- Residents were confused and frustrated that everyone did their own thing and insisted they did too
- I was convinced there had to a be a core of ideas that we all universally upheld
  - Nope.

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## Phase 1 – How did I get involved?

- Solution:
  - We started with a list that a colleague wrote (Justin Gagneur)
  - During our weekly meetings
    - Debated wording of checks
    - Debated depth of checks
    - Debated adding checks
    - Debated removing checks
    - Debated, debated, debated, yelled, debated
  - We have a list!
  - Started with a word document

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## Phase 2 begins…

- Many of the checks relied on the type of plan you were checking
- "Optimization used appropriate" doesn't make sense for an enface electron
- The first improvement cycle was born
  - The concept of the plan "Attribute" was born
  - Logic "gates" that apply additional checks when appropriate
  - But doesn't lend to a "paper" checklist (word doc)

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## Phase 2's first improvement (late 2016)

- Moved from a Word document to a spreadsheet checklist
- This quickly evolved to using Forms within Excel, with two checklists
  - A checklist of attributes
  - A checklist of tests, driven by the first checklist
- Stored results in excel so the checker could save and come back later
- Shameless plug
  - I presented on this at AAPM in 2017 (more later)
  - Our resident at the time Dr. Amy Geyer presented on the effectiveness of this method

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## Phase 2's next improvement

- "Hey, we have data here"
- Used Excel to aggregate the results
  - Unpleasantly surprised at the results
    - Some items were marked "needed attention" over 10% of the time!
  - Decided to do something about it
- Formed quarterly Practice Quality Improvement groups (PQI)
  - Variety of improvements
    - API scripts and/or automation
    - Workflow changes
    - Public shaming (sorry, not sorry)
    - Standardization (Dr. Buckey covered some of this)

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## What was that about Phase 3?

- In the meanwhile,…
  - Does MPPG 4 apply?
  - Does TG-100 apply?
  - Does TG-275 apply?
  - Do other publications apply?
- Short answer "Yes"
- Long answer to follow

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## My recommendations…

- My phase 3, should be part of your phase 1
  - Momentum is hard to establish
  - Even more difficult to deviate from
- My projects short comings:
  - I didn't know about MPPG 4
  - I had no learned knowledge about building checklists
  - I didn't think TG-100 could apply to something as mundane as chart checking
  - TG – 275 was an active group, but not published when I started

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## MPPG 4a – Ultra Cliff's notes:

- Use a team to develop
- Be critical of what goes on "THE" checklist
  - Evidence based, clinically needed
  - Remove opinion, personal preference, and mission creep
- Make sure it flows from start to finish
- Be willing to revise
- Training – make sure everyone knows what each item means
- Evaluate performance

- Lucked into this one!
- Hard fought, but worth it
  - Makes a cleaner list
  - Makes a better list
- Ours took some time
- Over and over
- Don't assume!!!
- You're generating data now, but what is the baseline?

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## TG-100 (as applies here) in a nutshell

- If you were somehow starting from scratch, I would use the methodology from start to finish, but this is unlikely
- At a minimum
  - Utilize process mapping and FMEA to identify the opportunities for QA and QC (Temporarily ignore items you don't identify as Chart Check for mitigation)
  - Use RPN scores to help shape your checklist OR see TG-275

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## TG-275's value

- Learn from your peers
  - Task Group started with a survey that 1/3 of our field responded
  - They did RPN scoring on those tests for you
    - You might see some of the scores as higher or lower, but a great starting spot
  - Includes quite a bit of data with the attachments
  - They offer strategies and suggestions

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## We have a robust chart checking program, now what?

- Maintenance is the key to any QA and QC program
  - Do you have an incident learning program?
    - How do they feed you items to check?
  - Do you already have regular meetings with share holders?
    - Yes: dedicate the agenda to review the list every 3,6 or 12 months depending on the size and scope of your group
    - No: why not? If you're solo, mark your calendar to review the data annually
- Do you give your treatment planners feedback?
- Data, data, data…we are scientists after all

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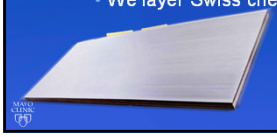
## How to react to chart checking data

- Use the highest occurrence items as improvement opportunities
  - Prevention is far more useful than "catch and repair"
- Question the utility of tests that are always "zero" occurrences
  - Maybe some other QA step doesn't have holes in it
  - We layer Swiss cheese



But not steel plates!

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## How to react to chart checking data (cont.)

- Remember you're checking someone else's work
  - Do they know what % of the time you must fix it? (do you?)
  - Do they have ideas on prevention?
  - Does the workflow make sense?
    - Do things progress in a logic way
    - Does the timing of events cause bottlenecks, stress and breed errors?
  - Have you provided standards for them to work from?

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## Concepts to key in on

- Standardization
  - Prescriptions
  - Procedures (SOP)
  - Nomenclature (Courtney covered)
- Automation
  - Scripts, spreadsheet macros, etc.
  - HL-7 interfaces?
  - Vendor options?

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## Standardization

- Multiple benefits
  - Makes writing, following and checking rules easier
  - Allows for logic!
  - Allows for easier QA methods
    - Data is always where you expect it
    - Data is easier to read or parse
  - Makes deviations from the norm easier to catch
    - Why is the target always drawn in red?
    - Why do we use cardinal angles whenever we can?

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## Automations

- Our group has arrived at the point where maintenance of the checklist is minimal
- …but if you're not moving forward, you're likely sliding backwards
- Trying to identify tests on our checklist that can be automated
  - Low hanging fruit:
    - A simple script could get the right answer 100% of the time, right now.
  - Fruit worth getting a ladder for:
    - Small standardizations make it low hanging

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## So now what?

- Vendors have been slow to put effort into chart checking
- Our spreadsheet was getting slow with all the data we had in it
- Our spreadsheet wasn't too flexible when we wanted to change the checklist
- So, we created our own software
- We've been using it since Labor Day 2020
- One of the bright spots of the pandemic is I was working from home and had time to learn more programming and create our software "Chartist".

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## Our current program

Automation of both attributes and tests (many, not all)

Expanded checklist to include tasks

Software lets you know data for you to consider when I haven't written a clever enough algorithm (yet)

Grabs directly from Aria

Audits our work

Database and Care path driven

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## In conclusion…

- Don't let the size of the project scare you, start simple and build over time
  - Something about a journey of a thousand miles and a first step…blah, blah, blah.
- TG-275 and other AAPM publications do a bunch of groundwork for you, but verify that their findings are your findings
- You don't have to write scripts or programs to improve your chart checking operations
  - Push the vendors or look for partnerships
- Spend time in the near term to save time in the long run

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Thank you

- Questions and Answers will be held until after all speakers
- Up next is Danny Harrington

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