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

E. Clouser, Jr.
4/18/2021
From Page to Clinic – Bringing Good Ideas to your Physics Group session
AAPM Spring Clinical Meeting 2021

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

Conflict of Interest Statement
• None
• Would love to have some. 😊
Quick Overview
• Where to begin
• How to maintain
• Now what?

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"

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.
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

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)

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
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)

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

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
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?

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 those you don’t identify as high risk)
  • Use RPN scores to help shape your checklist OR see TG-275

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
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 shareholders?
  - 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

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!

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?
Concepts to key in on

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

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?

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
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”.

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

In conclusion…
• Don’t let the size of the project scare you, start simple and build over time.
  - Don’t let the size of the project scare you, start simple and build over time.
  - 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
  - Spend time in the near term to save time in the long run
  - Spend time in the near term to save time in the long run
Thank you
- Questions and Answers will be held until after all speakers
- Up next is Danny Harrington