Guidelines for Writing and Reviewing AAPM Task Group Reports

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• Chair of Imaging Physics Committee
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How a Task Group Report gets the AAPM Stamp of Approval

Jean M. Moran, PhD

July 14, 2020
Disclosures

• Roles related to Quality and Safety in AAPM and ASTRO (Multidisciplinary QA Subcommittee)

• Role as Chair of Therapy Physics Committee & Chair of the Work Group on Task Group Review Streamlining

• Unrelated to this work
  – Research projects funded by Blue Cross Blue Shield of Michigan and Varian Medical Systems
  – Sun Nuclear: Travel support to the 2020 QA Dosimetry Symposium

• I support equity, diversity, and inclusion efforts within and outside of the AAPM
Acknowledgements

- Members of Science Council, chair Dick Fraass
- Therapy Physics Committee
- Imaging Physics Committee
- Work Group on TG Review Streamlining (WGTGRS)
- TG chairs & other members who have provided feedback to the process
- Members of our Executive Committee
- HQ support including Nancy Vazquez, Angela Keyser, Michael Woodward, and Jill Moton
- Jeff Williamson, Editor of Medical Physics
- eJPress
• Oversight of Task Group reports
• Following the writing and review process with the new Waypoints feature
• Standardizing features in Therapy Physics Committee reports
• Applying Quality Improvement to our review process
• Getting to the finish line
Task Group Reports

- Focus
  - New or emerging technology
  - Established area
  - Specific clinical problem
  - Educational or informational
  - Consensus document
- Official charges are required

- Many of these reports have been demonstrated to have a high impact for medical physicists worldwide
Task Group Reports are considered documents of the AAPM

- Requires approval up to the Executive Committee Level
Task Group Reports are within Science Council

- **Board of Directors**
  - **Science Council** [Status]
    - Data Sciences Committee [Status]
    - Imaging Physics Committee [Status]
    - Research Committee [Status]
      - Science Council Associates Mentorship Program [Status]
    - Technology Assessment Committee [Status]
      - TG278 - Task Group on Combined Residency and Research Training in Medical Phy...
    [Status]
      - Therapy Physics Committee [Status]
        - Unit No. 34 - PENTEC [Status]
      - Working Group on DICOM Coordination [Status]
      - Working Group on Future Research and Academic Medical Physics (FUTURE)
      [Status]
        - Working Group on Grand Challenges [Status]
        - Working Group on IEC Coordination [Status]
        - Working Group on IHE-RO [Status]
        - Working Group on Task Group Review Streamlining [Status]
Task Groups are typically at the Subcommittee or Work Group Level – Example for TPC & IPC

Board of Directors

- Science Council [Status]
  - Therapy Physics Committee [Status]
    - Biological Effects SC [Status]
    - Brachytherapy SC [Status]
    - Calibration Laboratory Accreditation SC [Status]
    - Quality Assurance and Outcome Improvement SC [Status]
    - Radiation Dosimetry & Treatment Planning SC [Status]
      - SC263 - Standardized Categorizations and Nomenclatures!
  - Imaging Physics Committee [Status]
    - Breast X-Ray Imaging SC [Status]
    - Computed Tomography SC [Status]
    - Computer Aided Image Analysis SC [Status]
    - Imaging Informatics SC [Status]
    - Magnetic Resonance SC [Status]
    - Nuclear Medicine SC [Status]
    - Pediatric Imaging SC [Status]
    - Radiography and Fluoroscopy SC [Status]
      - Radiological Protection SC [Status]
    - TG246 - Patient Dose from Diagnostic Radiation
    - Ultrasound SC [Status]

- Therapy Imaging SC [Status]
- Treatment Delivery SC [Status]
• Oversight of the writing Task Group reports
• Following the writing and review process with the new Waypoints feature
• Standardizing features in Therapy Physics Committee reports
• Applying Quality Improvement to our review process
• Getting to the finish line
The Task Group writing and review process is a journey
Waypoints – Now available for all reports in progress!

1. TG authors create a draft report
2. Review by Work Group* & Subcommittee
3. Review by parent committee with expert, general & junior reviewers
4. Review by Science Council
5. Review by EXCOM
6. Review by Med Phys

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• Oversight of the writing Task Group reports
• Following the writing and review process with the new Waypoints feature
• **Standardizing features in Therapy Physics Committee reports**
• Applying Quality Improvement to our review process
• Getting to the finish line
Standardizing Features in Task Group Reports

• The charges of the report are to be explicitly listed
  – Charges of all groups are available to members
• Key recommendations should be included in a dedicated section of the report
7. KEY RECOMMENDATIONS

- Physics plan/chart review should be based on risk analysis methods as advocated by TG-100 recommendations such as process maps and FMEA (Section 4).
- Physics plan/chart review procedures should aim to identify failure modes which are high-risk and/or high potential severity. This report identifies numerous such failure modes in the following areas:
  - Practices should work to incorporate physics reviews as early in the workflow as possible and not rely solely on review at the end-of-treatment planning (Section 5).
  - The initial physics plan/chart review should be performed prior to the first treatment fraction. Approval requirements should be enforced with treatment lock-out functions (Section 5.A).

A subgroup of TPC, Prof C, the Work Group on Implementation of TG100 developed guidance on how and when to include prospective risk analyses in TG reports and MPPGs.

When needed, perform a complete analysis for an example process:
- E.g. a process map, Failure Modes and Effects Analysis (FMEA), Fault Tree Analysis, and Quality Management.

At least 1 expert in prospective risk assessment as a member.
Include multiple professional groups.
...

To learn more about risk assessment go to:
**Electronic intracavitary brachytherapy quality management based on risk analysis: The report of AAPM TG 182**


*See fewer authors*

**Strategies for effective physics plan and chart review in radiation therapy: Report of AAPM Task Group 275**

Eric Ford, Leigh Conroy, Lei Dong, Luis Fong de Los Santos, Anne Greener, Grace Gwe-Ya Kim, Jennifer Johnson, Perry Johnson, James G. Mechalakos, Brian Napolitano, Stephanie Parker, Deborah Schofield, Koren Smith, Ellen Yorke, Michelle Wells

*See fewer authors*

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Outline

- Oversight of the writing Task Group reports
- Following the writing and review process with the new Waypoints feature
- Standardizing features in Therapy Physics Committee reports
- Applying Quality Improvement to our review process
- Getting to the finish line
## Process Improvements from Sci C, HQ, WGTGRS, TPC & IPC

<table>
<thead>
<tr>
<th>Root causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft reports lost in email inboxes</td>
<td>AAPM Report Management System – same platform as Med Phys &amp; JACMP</td>
</tr>
<tr>
<td>Grammatical errors in report distracting from science</td>
<td>Light copy-editing of the report upon submission</td>
</tr>
<tr>
<td>Unclear due dates, need for a person (Committee Chair, Vice-Chair or HQ liaison) to track &amp; send reminders</td>
<td>Use of invitations and automatic reminders</td>
</tr>
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</table>
### Root Causes

<table>
<thead>
<tr>
<th></th>
<th>Solution</th>
</tr>
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<tbody>
<tr>
<td>Unknown if prior comments during the review were addressed</td>
<td>An Excel file with reviews at each stage travels with the report. A cover sheet captures any controversial items</td>
</tr>
<tr>
<td>Scope creep</td>
<td>Early review by subcommittee of the key recommendations</td>
</tr>
<tr>
<td>Review process is lengthy</td>
<td>We are preparing a pilot for concurrent review by Sci Council, EXCOM members, &amp; Medical Physics</td>
</tr>
</tbody>
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Expanding our Reviewer Pool

• Consistent review by the Clinical Practice Environment Committee
• Regular inclusion of a junior reviewer
• Incorporation of a public comment period for more recent reports
• Oversight of the writing Task Group reports
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What happens when a report hits a bump during review?

- A subgroup of the reviewers is convened to discuss any controversies and to meet with the TG chair and at least 2 other members.
- The committee chair or vice-chair typically leads the group with regular reports provided to Science Council.
- Next steps are clearly defined.
- It is important that the Task Group chair has additional members to provide support & effort when this occurs.
We are excited about the process improvements!

1. TG authors create a draft report
2. Review by Work Group* & Subcommittee
3. Review by parent committee with expert, general & junior reviewers
4. Review by Science Council
5. Review by EXCOM
6. Review by Med Phys

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Summary of the current state

- We continue to use the new report management system
- ~16 reports have been reviewed with it
- The public comment period provides members an opportunity to share feedback on reports
- We are excited about the next phase of combining the higher levels reviews which should further streamline the process & decrease the time to publication
Thank you!

• I greatly appreciate all of the effort invested into our AAPM reports by volunteers as co-authors, reviewers, and even users of these documents!
• Thanks again to members of Science Council, IPC, TPC, HQ, the Work Group on TG Review Streamlining, EXCOM, Jeff Williamson, and eJPress.
• Thanks to Steve Goetsch & Eric Ford for having their reports be part of the public comment period.
• A special shout out to Nancy Vazquez & Jill Moton!