Review of TG-262 internal survey of practices in electronic charting for external beam radiotherapy

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Chair, TG-262

TG-262: Electronic Charting of Radiation Therapy Planning and Treatment

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The survey

- Starting point for TG work
- Questions
  - Where are we now?
  - What do we suggest based on experience?
- How satisfied are we?
- 150 questions: design, implementation, training, workflow, communication, QA, IT infrastructure, satisfaction
- Today’s review:
  - Design/Implementation
  - Training/Rollout
  - Elements of the chart (Rx)
  - Workflow/Communication
Design and Implementation

The Ecosytem

1. Electronic chart
2. Workflow support
3. RV system

21%
11%
7%
30%
13%
8%
16%
4%

Thanks to Sonja Dieterich

[Table and diagram content]

[Image content]
Implementation/Design Recommendations

- Understand and set goals early- use action items to keep the group moving
- Provide protected time if possible (20% was typical)
- Consult other groups that have gone through the process- site visits, colleagues, vendor demos
- Do not sacrifice essential elements of the chart.
- Dual monitors!

Training and dealing with change

- Training
  - Time for training underestimated
  - Think carefully about what degree of training is needed by each clinical group- nursing, administrative staff
  - Only ~30% assessed competency after training
- Acceptance of change- is brute force necessary?
  - Communication is vital. Present the change as bringing value to the practice.
  - Very dependent on continuous education; we went from “don’t send me tasks” to “send me a task”
  - A physician champion is important-start with those least resistant to change
  - Take all concerns seriously.

Maintenance/QA recommendations

- Most consider staffing for support of OIS inadequate
  - IT, physics, vendor, RTT supervisor or combination thereof
  - Hospital IT not familiar with RO practices and needs- physics input is crucial
- OIS ongoing QA program-
  - Acceptance test (0-6 months) followed by periodic (quarterly to yearly, major review before ACR audit) checks that electronic documents and workflow is still being used and meets clinical needs- minor adjustments on the fly with major adjustments by committee.
  - Tracking of OIS related events in the error reporting system with feedback loop for changes.
Elements of the Electronic Chart

Paper→Electronic

Chart format

Prescription

- Design: How much to include?
- Tyranny of electronic approval
  - Correction of typographical errors cumbersome
  - How much can be transferred to a separate document to reduce the need to reapprove?
- Only attendings approve Rx but who can edit? Think through very carefully!
Treatment Plan and Treatment History

- What is included in treatment plan documentation?
- Some are moving towards no pdf or printout.
- Capturing history: Use RV history or therapist document? Or both?
  - Protect against errors in saving treatment to OIS
  - How to document partial treatments?

Other considerations in design

- The system must be flexible enough to support all of the different types of documents and data that the practice maintains in its chart. Otherwise you come up with inefficient workarounds such as
  - Dumping into the setup notes
  - Overusing free text notes, they are not minable
  - Overusing electronic workflow tools (creating tasks just to record something)
- Leverage the ability to mine data and create custom reports—some examples
  - Staff workload monitoring
  - Treatment statistics/patient volume
  - Timeliness and workflow
  - Justification for capital requests

Workflow and Communication
How effective is the OIS for communication?

Communication and handoff

- Well defined communication channels are important - Multiple options for communication and workflow cause confusion
  - External email, internal email, task - preferences vary wildly
- Simple handoff of a paper chart is now managed by QCLs and care paths. Development of and adaptation to these electronic workflow tools was difficult and often not followed by physicians.
  - Design these wisely and review compliance
- “Taking the chart from the machine” is now done virtually
  - Discontinued bolus (MD → physics → RTT)
  - Close the jaw (chart rounds → physics)
  - Refilm patient (physics → RTT)

Not everything needs a task

Use of electronic tasks

- Write Diagnosis
- Enter Rx
- Treatment plan
- Initial chart check
- IMRT QA measurement
- IMRT QA review
- Initial physics chart QA
- Weekly physics chart QA
- CT physics chart QA
- Initial RTT chart QA
- Weekly RTT chart QA
- ECT RTT chart QA
How effective is the OIS for QA?

<table>
<thead>
<tr>
<th>QA Functions</th>
<th>Importance</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forcing functions and constraints (e.g. interlocks)</td>
<td>2.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Automation and computerization (templates, indexing, statistical process control features)</td>
<td>2.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Protocols, standards and information (e.g. checklists, communication)</td>
<td>2.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Independent double check systems (e.g. ease of performing physics QA)</td>
<td>2.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Rules and policies (e.g. scheduling assistants)</td>
<td>2.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Education (i.e. build in policies, help features)</td>
<td>2.3</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Overall satisfaction of TG members with chart

<table>
<thead>
<tr>
<th>Satisfaction Survey (TG members)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection process</td>
<td>Very satisfied</td>
</tr>
<tr>
<td>Implementation process</td>
<td>Satisfied</td>
</tr>
<tr>
<td>Workflow integration</td>
<td>Neutral</td>
</tr>
<tr>
<td>Management of IT infrastructure</td>
<td>Dissatisfied</td>
</tr>
<tr>
<td>Overall workflow and operation</td>
<td>Very dissatisfied</td>
</tr>
</tbody>
</table>

Thank you!