Keeping Dosimetrist’s Current, Engaged, and Integrated in an Expanding Network:

A Staff Dosimetrist’s Perspective

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Disclosures

- I am employed by Allegheny Health Network
- Vendors/Software we use: Elekta’s Monaco TPS, Mosaiq EMR, and MIM
Objectives

- Day-to day in a network
- Communication is key
- Same, but not the same
- Workflow

Current Situation in Radiation Oncology

- Radiation Oncology is evolving daily
- Leads to challenges and different experiences
- Smaller cancer centers are being acquired by larger institutions
- Large networks are becoming more commonplace
- Some of you have been through this, others might be going through it
Big Changes since November 2017!

A little about Allegheny Health Network Cancer Institute
Our Vision & Values

* Our integrated and collaborative cancer network allows for the vast majority of care to be delivered close to home and ensures access to all advanced treatments, capabilities, and clinical trials, which leads to maximal health and well-being for each patient.

* People with cancer in the Western Pennsylvania region will receive the most expert, advanced, integrated, personalized and compassionate cancer care to achieve the best possible outcomes. Cure rates, symptom control, quality of life and safety will be maximized while toxicity of treatment will be minimized.

**AHN Cancer Institute Locations**
(23 geographically located sites with 9 comprehensive Cancer Centers)

More than 130,000 cancer treatments delivered for nearly 10,000 cancer patients. 204 physicians: 136 surgeons, 51 medical oncologists, 17 radiation oncologists.

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H-Hematology - 2 sites  
MO-Medical Oncology - 16 sites  
RO-Radiation Oncology - 14 sites  
SO-Surgical Oncology - 14 sites  
CT-Cellular Therapy/Transplant - 1 site
AGH Today

- 631 Bed Inpatient Facility
- 800 Physicians and Surgeons
- 3,500 Employees
- 24,000 Annual Admissions
- 300,000 Outpatient Visits
- 55,000 Emergency Visits
- 23,000 Surgical Procedures

- Our doctors are world-renowned and supported by exceptional teams of nurses, technicians, clinicians and support staff.
- Allegheny General is a national leader in cancer, cardiovascular, neuroscience and orthopedic and rehabilitation care.
- AGH recognized by U.S. News and World Report as one of the country’s best hospitals.
- Truven Health Analytics, formerly Thomson Reuters Healthcare business, identified AGH as one of the country’s “100 Top Hospitals”.
- Truven recently named Allegheny Health Network as one of the best health-care systems in the nation.

- Allegheny Health Network (AHN) is one of two major health systems in the Greater Pittsburgh Metro area

- AHN Cancer Institute is in collaboration with Johns Hopkins Kimmel Cancer Center

- AHN’s Radiation Oncology Department is comprised of 11 cancer centers across western PA/eastern OH *(and expanding as we speak!)*
A little about Allegheny Health Network Radiation Oncology

At One Time...

- Hospitals/departments were part of “network” but still operated separately
- No real unity
- Staff only responsible for your site
- Coverage on occasion
- Everyone did their own thing
Then...
expansion started

- The need for cohesion grew
- Becoming a true network, should operate like a network
- Standardizing network processes and procedures became increasingly necessary
- But, old habits are hard to break... *more on that later
- I came to the network after the expansion began, but have seen the processes evolving
Collaborative and Collegial Teamwork Improves Healthcare Outcomes, Experience, and Value

New since November...
We have broken ground!

- Beaver (open Spring 2019)
- Butler (open Spring 2019)
- Construction of new AHN Cancer Institute Academic Center at Allegheny General Hospital (open late 2019 / early 2020)
- Construction of new department at Forbes (open Spring 2019)
- Construction of new department at St Vincent/Erie (open Fall 2019 / Winter 2020)
AAMD 43rd Annual Meeting
June 17 – 21, 2018

AHN currently employs 13 full-time Certified Medical Dosimetrists:
• 4 at AGH, 1 at each site
• Varying years of experience, training, and backgrounds
• Each dosimetrist is responsible for planning at their site
• Varying patient census per site across the network

AGH

• 6 Radiation Oncologists
• 4 residents
• 4 Dosimetrists
• 2 treatment machines
• 9 RTTs
• 3 RNs
• Multiple physicists – clinical and research
• In- and outpatient / call
• Special procedures (SRS, SRT, SBRT, Mammosite, eye plaques, IVBT & PSI)
• Treated average 35-40 patients (including specials) per day in 2016
Peters Township Radiation Oncology
(my base)

- 1 Radiation Oncologist
- 1 Dosimetrist
- 1 treatment machine
- 2-3 RTTs
- 1 RN
- 1 physicist, 2 days per week
- Outpatient only
- No call
- Treated an average of 10-13 patients per day in 2016

Advantages
to being in a network
Alone at each site but never “alone” within the network

- Ability to brainstorm difficult or challenging cases
- Ability to help out if you have time, or receive help if you are busy
- Everyone is connected via direct access broadband servers
- PTO coverage is almost always available, either on-site or remotely through servers

Everyone has access to a network server

- Policies and procedures
- PTO/vacation/on-call schedules
- Clinical information
- Site-specific information
- List of all Monaco workstation IP addresses for remote log-in
- Dosimetry training and board review information
Network Processes

- Treatment processes are *mostly* uniform across the network
- Network EMR Careplan workflows in Mosaiq have been established
- Always evolving as necessary

Mosaiq Careplan / IQ Scripts

- Starts when physician enters orders
- Without orders – nothing happens!
- Sends out initial QCL to Billing, Nursing to get the patient started
All QCL’s are generated through the Careplan / IQ scripts

When each of our QCL items are completed, the next step is triggered

Keeps the workflow throughout the network standardized

Workflow generated from scripts

- Starts with Physician – enter orders
- Biller gets insurance authorization
- Sim is scheduled – then completed
- Contours drawn
- Plan generated, reviewed and accepted
- Plan and beams transferred to Mosaiq
- Plan approved
- Plan 2nd checked by physics
- Patient scheduled on treatment machine
- Patient and plan reviewed in peer review / port conference
- MRQA completed
Mosaiq

- Network-wide EMR system
- All patient radiation therapy data is kept there
- Separated by site, but can still see the others

AHN Dosimetry QCL

- “Bucket” list of all dosimetry patients
- All work from this list
AHN Dosimetry QCL Tasks

- 3D Plan
- 4D Charge
- Auth Obtained
- Chemo/RT Concur
- Enter in Mosaiq
- IMRT Plan
- Isodose Plan
- Pacemaker
- Ready to Contour
- Transfer Patient
- RX Change
MIM

- All contouring and fusions for all AHN patients take place in one centralized MIM server and database
- All dosimetrists at all sites have access
- Physics does all fusions
- Anyone can contour for anyone
MIM
*New since November*

- Auto-contouring in MIM
  - Lung and Head & Neck (at AGH only)
  - Still gathering feedback from Rad Onc’s and Physics
  - Rolling out to satellites in the near future

Monaco
Treatment Planning Systems
*New since November*

- All sites have their own 2 systems, Monaco1 and Monaco2, which houses their own patient and machine data
- Allows us to remote desktop into another system at another site and help each other
- Accessible to all of us at all sites
- Push to standardize planning techniques (or at least the initial planning starting point)
Quality Controls

- Dosimetrists perform MRQA for/on each other

- Appears on master MRQA DOS QCL
AHN MRQA DOS QCL Tasks

- Review Required
Quality Control Trigger

- Quality Control Trigger system with bi-weekly meetings to discuss issues with the network and how to correct them/prevent them from happening in the future
- Anyone network-wide can provide input
- Lessons learned are shared

Network Communication

Very important for keeping us all current, engaged, and integrated, especially as we continue to gain employees!
Daily

On-site “huddle” held at each individual Rad Onc department

- Basically, 5 min daily staff meeting
- Discuss any new information
  - Network, department, staffing
- Address issues, problems
- Ask questions

Monthly

Network dosimetry staff meeting

- Anything involving dosimetry staff
  - TPS status, PTO coverage, QCT/QA issues, site-specific information, announcements, trainings, personnel, etc.
  - Open discussion for us to talk about anything
Annual

AHN Annual Practicum

- Entire network learning
  - ½ day all together with speakers geared towards the network as a whole
  - ½ day with breakout sessions geared towards each group

Sunshine and Rainbows?
NOT ALWAYS!

Differences
(not necessarily disadvantages)
Different equipment at each site

- Monaco vs XiO
- All sites upgraded to Monaco 5.11.02 as of March, 2018!
- Elekta vs Siemens vs Varian

Different treatment capabilities across sites

- SBRT
- VMAT vs. Step – and - Shoot
16+ Different Radiation Oncologists

= 

16+ Different Opinions

Despite being part of a network, each individual site has their own “tweaks” to the network process

What works at AGH may not necessarily work perfectly at PTRO, and vice versa
No matter what, there will always be some people who insist that change is bad, and will “do their own thing”

Long-tenured Staff

- Bring a lot of history, experience, and knowledge
- Many brought up in the system (OJT therapists to CMD)
- But with that, have the hardest time adjusting to change
- Comfort in the “known” / the way it’s always been done
- Used to things being a certain way
Recently Hired Staff

- Bring a lot of history, experience, and knowledge
- Many not brought up in the system, but were OJT therapists to CMD at other institutions plus recent dosimetry school graduates
- Bring fresh ideas and perspective
- Not invested in how things were

Current Future State
The next 5 years...

IS HAPPENING NOW!

- AHN is planning to both expand the network to include 3 new cancer centers and 5 new dosimetrists
  - in progress!
- Also, upgrading current clinics to the same equipment
  - in progress!
- Eliminate some of the “differences” between sites
  - in progress!
What are the dosimetrist’s roles and responsibilities in expansion?

Personal accountability

- We get so focused on our site / can easily neglect elsewhere
- Sometimes easier to retreat rather than engage
- Be aware of what’s on the master QCL and MRQA QCL
- Take initiative

Ask, learn, get involved!
Follow management lead

- We have a fantastic supervisor
- Follow new processes and procedures
- They are put in place for a reason

Remember that we are a TEAM – especially as we expand!

- Uniformity and continuity is not a bad thing
- Far more beneficial – for us, and ultimately, the patients! – to have system-wide uniformity
- Things run much more smoothly when we work together and not against each other
- The system runs like it should
Because...

- Change is inevitable, and is here!
- Dosimetrist’s roles and responsibilities will continue to evolve
- As network grows, it becomes more important for us to be as uniform and integrated as possible
- We must continue to keep ourselves current and engaged so that we remain an integrated network of dosimetrists

Acknowledgements

- Lori Slack, BA, RT(T), CMD – Dosimetry Supervisor
- My dosimetry colleagues at AHN
- My husband, Dan, for the PowerPoint expertise
Questions?

Thank You