A Proposal for Licensure of Medical Dosimetrists in Massachusetts

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Massachusetts General Hospital
Department of Radiation Oncology
June 14th, 2016
Guinea Pigs?
Guinea Pigs!

In Switzerland, it is illegal to keep just one guinea pig.
Outline

• Current state of Medical Dosimetry profession in Massachusetts

• Development of licensure for other allied health professions

• Present and potential regulatory requirements in Radiation Oncology

• Licensure proposal in progress

• Massachusetts legislative process

• Next steps
Project Background

Project Background

• Barber Licensure Requirements

  – 2 years apprenticeship under a registered barber  
    OR
  – Six months of barber school and 18 months of apprenticeship under a registered barber

  AND

  – Successful passage of skill examination, including tool preparation, shaving, haircutting, and sufficient knowledge of skin & face diseases
Massachusetts Licensure Regulations

• Promote quality & safety of services provided to the public

• Enforce professional standards for education, experience, and competence

• Division of Professional Licensure
  – Oversees a broad range of professions, including optometrists, barbers, podiatrists, and electricians

• Department of Public Health and Human Services
  – Most medical professional licenses are issued by this body
    • Radiation Oncologists and Radiation Therapists fall under the Radiation Control Program
Medical Dosimetry Profession

• What is a Medical Dosimetrist?
  – From American Association of Medical Dosimetrists (AAMD):

  • The Medical Dosimetrist is a member of the radiation oncology team who has knowledge of the overall characteristics and clinical relevance of radiation oncology treatment machines and equipment, is cognizant of procedures commonly used in brachytherapy and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the medical physicist and radiation oncologist.

Image: http://www.medicaldosimetry.org/
Medical Dosimetry Profession

• What can a Medical Dosimetrist do?
  – Clinical Service & Consultation
  – Research
  – Teaching/Academic Pursuits
  – Locum Tenens
  – Vendor Applications/Technical Support/Sales Specialist
  – Administration

Image: http://www.medicaldosimetry.org/
Medical Dosimetry Profession

- **American Association of Medical Dosimetrists (AAMD)**
  - Professional society incorporated in 1995
  
  - Established *suggested* practice standards for profession
    - Professional Scope of Practice
      - What we should *and should not* do
  
  - AAMD **recommends** certification by the Medical Dosimetrist Certification Board (MDCB)

[Image: http://www.medicaldosimetry.org/]
Medical Dosimetry Profession

- **Medical Dosimetrist Certification Board (MDCB)**
  - Accredited by the *National Commission for Certifying Agencies*
  
  - Roughly 3500 certified medical dosimetrists globally
    - Estimated to be 80% of dosimetry workforce
    - ~100 CMDs in Massachusetts
  
  - Evaluates critical thinking, judgment, and technical skill
    - Traditionally 50% pass rate
  
  - Certification = Qualified
    - Not required for practice
    - Uneven employment criteria based on preferences
  
  - Evolving eligibility criteria
    - 2017 - Bachelor’s degree + graduation from JRCERT-accredited program are required for *all applicants*
Health Professions Evolution

- **Licensure Requirement**
  - Ensure quality and safety in care provided
  - Evolved from informal apprenticeships
  - Now require formal training
    - Focused on increasingly complex skill development
  - Comparison to physicians & nurses
    - *Flexner Report* – early 1900’s
      - Education and licensing recommendations for physicians
    - “Every profession has a life cycle, and within the life cycle, professions become more academic.”
      - Robert D Adams, Ed.D., CMD RT(R)(T)
Current Professional Certification and Licensure Requirements

<table>
<thead>
<tr>
<th>Profession</th>
<th>Relevant Certifying Body</th>
<th>State Licensure Required?</th>
<th>Information Resources</th>
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From ASTRO’s *Safety is No Accident* (2012)
CARE Bill

• The Consistency, Accuracy, Responsibility and Excellence in Medical Imaging and Radiation Therapy Bill

  – Would require establishment of formal practice standards throughout radiation oncology and radiology
    • Potentially require licensure

  – Entrust the Secretary of Health & Human Services to design Medicare & Medicaid payment schedules to require work to be performed by qualified professionals

  – Presented several times for Congressional consideration
Oncology Landscape Nationally

- **Affordable Care Act (aka Obamacare)**
  - Removes limitations for pre-existing conditions
  - Covers more uninsured
    - ~1 in 6 cancer patients was uninsured in 2011 nationally
      - Estimated to be 12 million citizens
      - Creates demand for qualified practitioners
      - Potential influx of newly insured from outside Massachusetts
    » Massachusetts already had universal coverage requirements under Gov. Romney’s legislation

Image: http://whqr.org/post/coastline-how-affordable-care-act-working-nc#stream/0
Oncology Landscape Nationally

- **Baby Boomer Generation**
  - 25% of US population base
    - *And increasing…*

- Median cancer diagnosis at age 66

Medical Dosimetry Profession

Technical Report: Future Trends in the Supply of and Demand for Medical Dosimetrists (commissioned by the AAMD)
### Table 1 Supply and Demand Model Input Information

<table>
<thead>
<tr>
<th>Year</th>
<th>New Cancer Patient Prevalence (millions)</th>
<th>MDCB Diplomats in Medical Dosimetry</th>
<th># AAMD Full Members only</th>
<th>Clinical FTE - 0.95 Clinical effort</th>
<th>Number of Medical Dosimetrists Retiring</th>
<th>Assumed Number of Patients per Clinical FTE Dosimetrist</th>
<th>Number of Dosimetry Students Entering JRCERT Pgm.</th>
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**Technical Report: Future Trends in the Supply of and Demand for Medical Dosimetrists** (commissioned by the AAMD)
Oncology Landscape in Massachusetts

- 38,000 cancer diagnoses in Massachusetts in 2014
  - 50%+ will require radiation therapy

- Incidence Rate is significantly higher than national average from 2005-2009
  - Leads to increased demand for qualified practitioners
    - One local JRCERT-accredited dosimetry training program
      - Suffolk University
    - Eighteen (18) programs nationwide
      - Roughly 100 graduates per year

- Metropolitan Boston is in 90th+ percentile nationally for number of physicians in Radiation Oncology specialty
  - Springfield & Worcester fall at national averages for the specialty
  - Concerns over geographic variation for access to care
Medical Dosimetry Profession in Massachusetts

Medical Specialists per 100,000 Residents, by Specialty
(Radiation Oncology; Year: 2006; Region Levels: State, Hospital Service Area)
provided by Dartmouth Atlas of Health Care
Radiation Regulatory Concerns

- **US Nuclear Regulatory Commission (NRC)**
  - Requires tracking & documentation of medical events involving radiation
  - Performed in Massachusetts by the Radiation Control Program
    - Ensures safety & health of residents from radiation’s beneficial & detrimental effects
      » Oversees linear accelerator operations
      » Controls licensure of radiologic technologists and radiation therapists

Radiation Regulatory Concerns

- Radiologic Technologist Licensure Experience
  - Massachusetts – Required in 1990
    - Prior to licensure – 55 adverse medical events involving radiation from 1979 to 1989
    - Post licensure – 7 adverse medical events involving radiation from 1990 to 2000
  - Alabama
    - Approximately 4 million residents
    - No licensure requirements
    - 42 medical events involving radiation between 1981 and 1997
  - California
    - Approximately 30 million residents
    - Strict licensing controls for technologists
    - 29 medical events involving radiation between 1981 and 1997
International Regulatory Experience

• **United Kingdom**
  – Robust error reporting system
    • Incidence rate of 40 per 100,000 treatment courses
      – Three (3) led to adverse outcomes
    • Outlined need for professional expertise
      – Technical evolution
      – Workforce competence

• **Italy**
  – Thorough categorization of errors
    • Most frequent:
      – Incorrect data for calculation
      – Incorrect patient dose calculation

• **Australia**
  – Meta-analysis of 3000 published incidents
    • 55% were at the treatment planning and calculation phase
      – Suggested need for further workforce skill development
A Lifesaving Tool Turned Deadly

Radiation Offices Void of New Care, and Wages Do Dwindle

MURRAY M. SALAT

The American Medical Association said there were shortages of radiation therapists at 40 percent of the nation's hospitals in January, and that's because of the growing number of patients with cancer. The problem is that there are not enough therapists to treat all the patients who need them. The shortage is so severe that some patients are being treated without the necessary care. The American Medical Association has called for an increase in the number of radiation therapists, but the problem is not going to be solved overnight.

In Big, Brush Coach in Stained Soots, Jets Hear From Start They Had Winner

FLORENCIA TAYLOR, N.Y., T.S. - The New York Times

The plane was on fire, the pilot was trapped, the passengers were screaming. But the pilot managed to get the plane back on the ground, and the passengers walked away from the crash unharmed. The pilot's heroism was celebrated throughout the country. The pilot was a hero, but the plane was not.

In the photo, a man and a woman are sitting on a couch. The man is wearing a red shirt and the woman is wearing a blue shirt.

The New York Times

• The Radiation Boom – Walt Bogdanich
  – Highlighted safety shortcomings of the industry
    • Incomplete regulations on incident reports
      – Incomplete tracking and classification of errors
    • Qualifications of practitioners lacking

  – Two key responses from ASTRO
    • White Paper - Safety Is No Accident
      – Collaborative effort to outline comprehensive safety standards with radiation oncology
      – Included specific recommendations on the qualifications of competent practitioners

• Radiation Oncology Incident Learning System (RO-ILS)
  – Design similar to Aviation Safety Reporting System
  – Hopeful of ability to track and identify myriad of errors within complex therapy delivery system
Industry Relevance

• First licensure effort for medical dosimetrists.
  • Promotes development of profession similar to other allied health careers
  • Builds on safety enhancements realized by other licensure efforts

• Proactive approach to practice standardization
  • True to tenets of CARE Bill
  • Embraces role of certification in ensuring competency
  • Promotes formal educational requirements
What’s Been Done?

• Promote buy-in from diverse stakeholder representatives within Massachusetts

• Gain support of AAMD and MDCB

• Develop relationships with legislators with interest in potential sponsorship

• Delineate draft proposal of licensure structure for review and submission for filing on Beacon Hill
Project’s Vision

- *Through licensure, medical dosimetrists in Massachusetts will prevent harmful impacts of radiation and achieve quality patient care by adherence to highest professional standards.*
Medical Dosimetrist Licensure Strategy

- Communicate role of dosimetrist in safe provision of therapy
- Maintain AAMD’s Scope of Practice
- Recognize documentation of competence afforded by the MDCB
- Uphold formal educational standards of the Joint Review Committee on Education in Radiologic Technology (JRCERT)
Medical Dosimetrist Licensure Strategy

• Ensure licensure does not impede access to healthcare in Massachusetts by recognizing professionals that have not formally been documented as competent

• Maintain proper professional & public oversight of profession by creation of Advisory Commission for Medical Dosimetry

• Promote professional behavior through adherence to documented conduct standards
Current Infrastructure

- **Radiation Control Program**
  - Online platform for credential review for radiologic technologists
  - Ability to sort by various data fields
  - Potential for online application to streamline processing

- **MDCB Credential Verification**
  - Web-based platform tracks continuing education requirements
  - Real-time online database of the status of certified practitioners
    - Potential to push required credentials to outside vendors
Resolve S.1135

• **Definition of *Resolve***
  - Document proposing policy of a temporary nature, such as a payment from the State Treasury or establishing a study group.
    - Usually limited to a specific issue or event

• **Filed by the Office of Senator Cynthia Creem**
  - Assistant Majority Leader of the Senate
  - Represents the 1st Middlesex and Norfolk districts
    - Newton, Brookline, and parts of Wellesley
  - First elected in 1999
Resolve S.1135

• Petition to establish a medical dosimetrist commission
  – Would perform a study related to licensure of dosimetrists
  – Advise on creating licensure requirements and draft of legislation
  – Commission comprised of:
    • Three (3) Senators
    • Three (3) Representatives
    • Seven (7) Members appointed by the Governor, including
      – Commissioner of Public Health (or designee)
      – Three (3) medical dosimetrists
      – Two (2) licensed radiation oncologists
      – One (1) representative of a patient advocacy organization
  – Due no later than December 31st, 2016
Draft Licensure Proposal

- Institutes minimum requirements to practice medical dosimetry
- Establishes oversight by subject-matter experts within MA
- Full versus Conditional License Types
  - Student Clinical Education
- Continuing Education Requirements
- Professional Complaints
  - Review Procedure
  - Suspension, Cessation, and Denials
- License Term & Fee
Massachusetts Legislative Process

• Petition is filed
  – Proposed by legislator, offered by Governor, or on behalf of a member of the public
    • *Resolve S.1135* was filed on my behalf in January 2015
    • Many ideas from the general public are never proposed

• Reviewed by subsection of both Houses
  – Most all petitions expire at this stage
  – Senate referred to Joint Committee on Public Health in April 2015
    • House concurred
Massachusetts Legislative Process

- **Referred to Committee**
  - Comprised of members of both Houses
  - Will hear testimony on merits of proposals, including subject matter experts and the general public
- **Joint Committee on Public Health** considered the dosimetry proposal under their jurisdiction
  - Hearing held November 2015
- Positive report out of committee would compel further action by sponsoring chamber
- Study order sent to Senate in March 2016
Massachusetts Legislative Process

• **Bill is read by the sponsoring House Chamber**
  – Floor debate is heard and encouraged
  – The Senate will hear debate on dosimetry licensure first as the sponsoring chamber
    • *Current proposal is awaiting reporting by the Senate*

• **Passage of Bill by first Legislative Branch**
  – Favorable passage refers the bill to the other legislative branch

• **Passage of Bill by second Legislative Branch**
  – Any amendments would have to be concurred by the first branch
Massachusetts Legislative Process

• Bill enacted and sent to Governor
  – Four distinct paths:
    • Signed into law
    • Becomes law unsigned
    • Vetoed
    • Sent back with amendments
Measures of Success

- **Utilization rates of “qualified” medical dosimetrists**
  - Currently 80% -> 100% Expected compliance
  - Estimated 30 dosimetrists in Massachusetts are not “qualified”

- **Medical Event Rates**
  - Similar expectations to radiologic technologists
  - May take protracted timeframe to collect and analyze data post-licensure
    - Statistical significance?
    - Economic impact?

- **RO-ILS Data**
  - Data accumulation started in 2014
  - Comparison to national aggregate
Opportunities for AAMD

• **Government Relations Task Force**
  – Promotes various legislative initiatives, including licensure
  – Partnership with *Morford/Drullis Associates*
    • Lobbying and association organization management team

• **Government Relations Survey**
  – Sent to membership in Fall 2014
  – Data still being evaluated

• **Broad communication to AAMD membership**
  – Use of social media outlets
  – National & regional conference platforms

• **Governmental Outreach by AAMD and Partner Organizations**
  – Organized at Local/State/Federal Levels
  – MDCB/AAPM/ASRT/ASTRO/etc collaborations
  – Match vision and values to promote cooperation
Continued Evolution of the Profession

• AAMD Professional Guidance
  – Qualified Medical Dosimetrist
    • Key part of licensure proposal

  – Continuous evaluation of Scope of Practice
    • Training requirements
    • Educational needs
    • Technological incorporation
Continued Evolution of the Profession

- **MDCB Examination Criteria**
  - Ability to adapt as standards change
    - Educational and training requirements
      - 2017 Exam Eligibility
  - Ensure exam reflects current practice
    - 5 year practice survey intervals
    - Maintain measurement of competence
      - Hands on planning demonstration?
Next Steps

• **Continued Dialogue with Massachusetts State House**
  – Study order from Joint Committee on Public Health
  – Refinement of proposed legislation

• **Grassroots promotion within Massachusetts radiation oncology community**
  – New England Society of Radiation Therapists
  – New England Chapter of American Association of Physicists in Medicine
  – Individual Radiation Oncology department outreach

• **Potential For Portability**
  – Feasibility studies for other states
    • Mississippi connection
Summary

• Current state of Medical Dosimetry profession

• Development of licensure for other allied health professions

• Present and potential regulatory requirements in Radiation Oncology

• Licensure proposal in progress

• Massachusetts legislative process

• Next steps
Acknowledgements

American Association of Medical Dosimetrists – Spencer Boulter; Chris Gainer, CMD; Gregg Robinson, MS

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Office of Massachusetts State Senator Jason Lewis – Abby Armstrong, Dennis Burke

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