

Diagnostic physics* workforce assessment

**including nuclear medicine*

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Outline

1. Review recent efforts in assessing Dx workforce
2. Review AAPM Report 301's Levels of Service model for describing physics activities
3. Share select 2020 survey results

Quick review

- 2012 Dx manpower survey
- 2017 AAPM Report No. 301
 - Levels of Service framework
- 2018 Dx manpower short survey
- **2020 Dx manpower survey**

New Framework: Levels of Service

- DWS developed the Levels of Service (LoS) model
- Attempts to describe and classify DxMP work without relying on traditional practice model or environment categories
- Published in AAPM Report 301 (May 2017)

Level 1

- Required services, or de facto requirements
- Well-defined
- Relatively high degree of agreement on procedures, time, effort

...EPEs

Level 2

- Well-described
- Frequently the responsibility of a medical physicist*
- Carried out according to published methods, procedures, standards
- Includes mandatory and non-mandatory svcs

... FGI safety program a la NCRP 168 ... RSO

*Not exclusively carried out by medical physicists

Level 3

- Not well-defined
- Not mandatory outside institution
- Broadly: research or developmental activities

... developing and/or testing new tools & techniques, basic science, clinical research

Level 0

- Essential activities
- Cost of making medical physics services available
- Perhaps negotiable, perhaps necessary

... getting CE, calibrating instruments,
maintaining certifications & licenses,
operations & personnel mgmt

2018 short survey

- Worked with AIP
- 15 questions, some multi-part
- Demographic in nature
- Open ~Aug 1 – mid-Oct
- Over 1700 respondents

Have you read AAPM Report 301?

	N	%
Yes, Completely	59	4
Skimmed it	203	13
No	766	50
Haven't heard of it	505	33

2020 survey (not short)

N=855:





697 AAPM

158 HPS Med. Health Physics

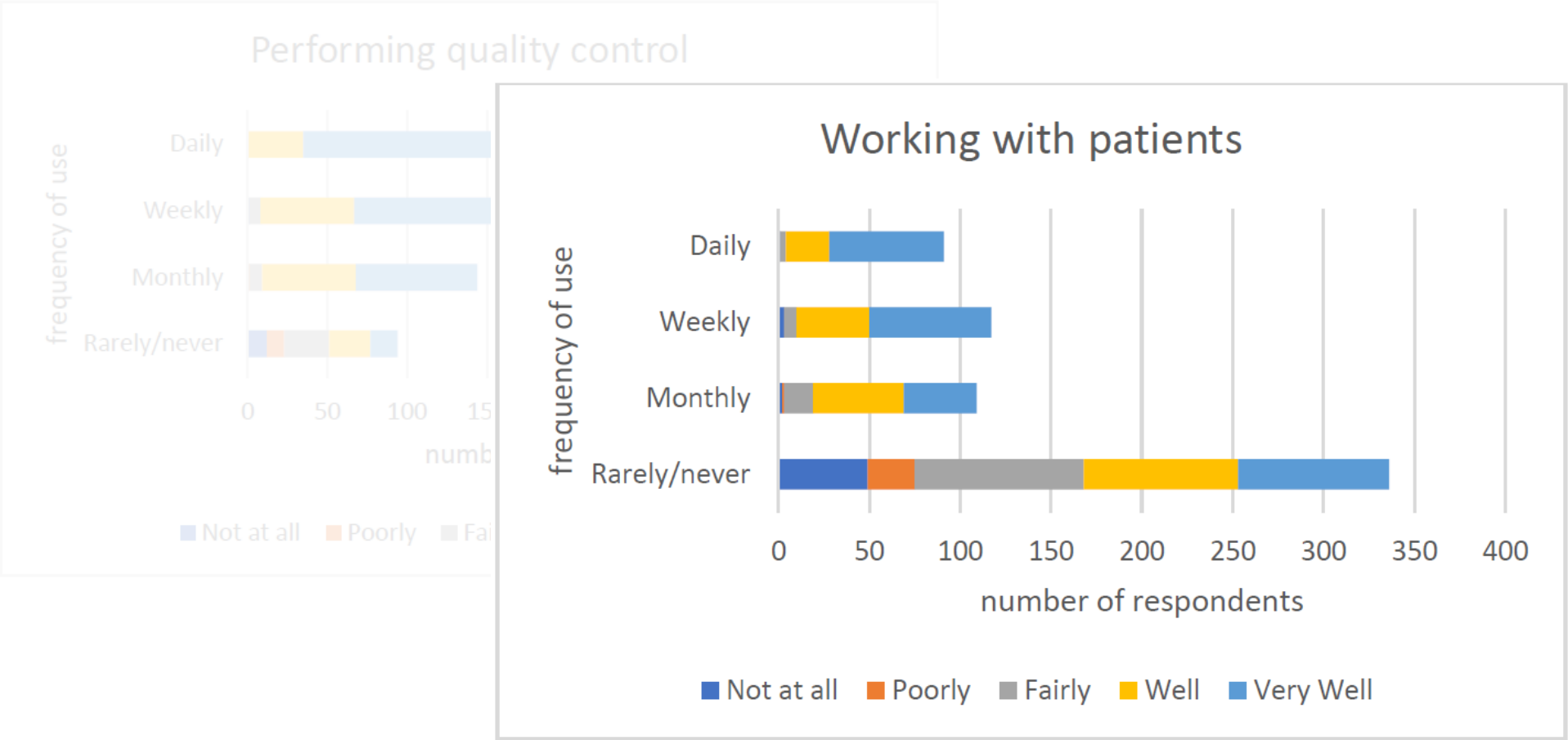
Key research questions:

1. How do Level 1 EPE effort values from Report 301 agree with real-world practice?
2. How are medical physicists currently "being used?" I.E. who or how many are doing Level 1 EPEs only, how many are doing Level 2 and 3 work only, and who has a blend?
3. What is the current rate of attrition from the imaging physics workforce?

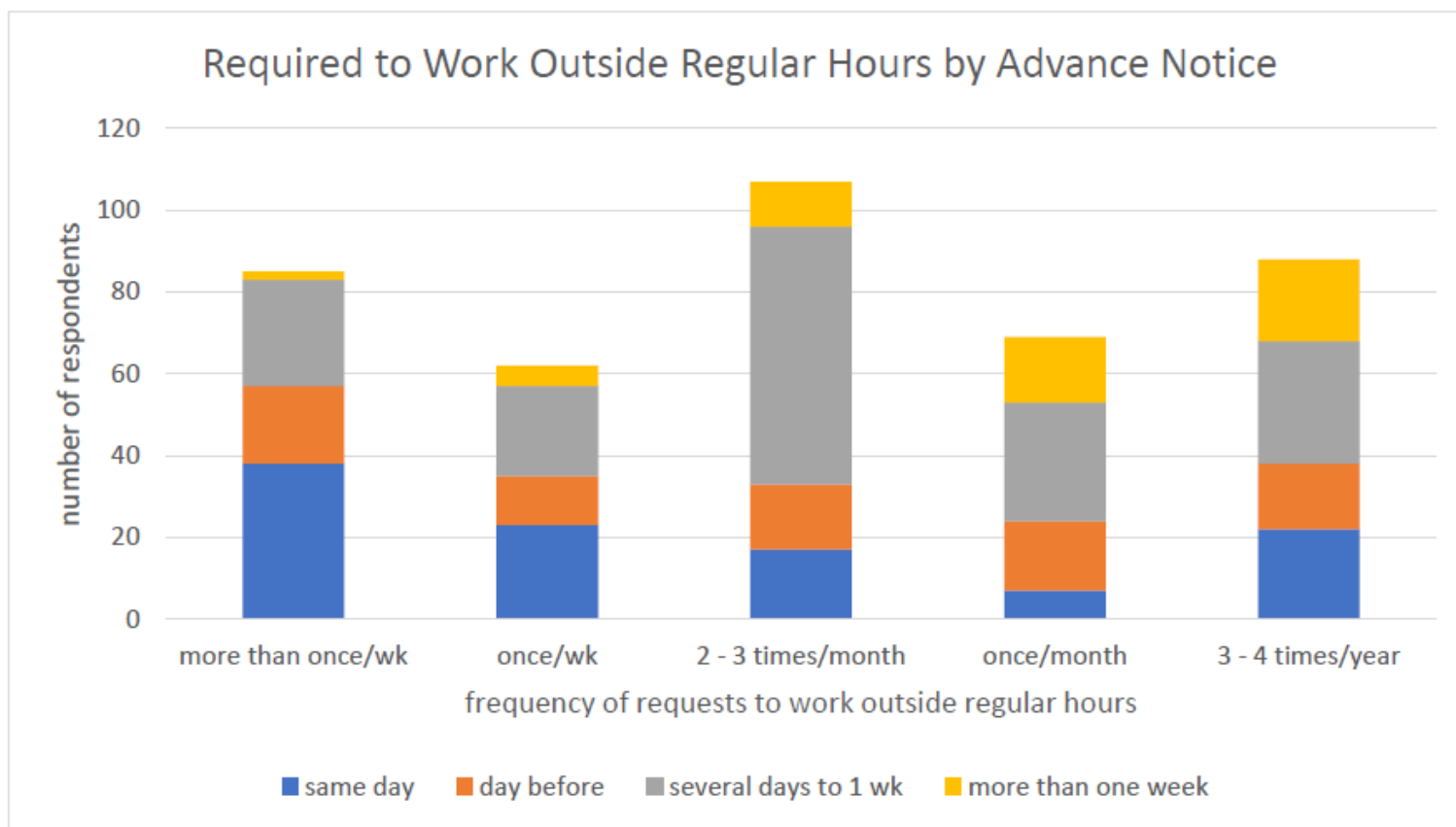
Level 1 EPE validations

 Task	 Report 301 hrs Table 1	 Survey avg hrs	 Report 301 error in excess hrs
MQSA FFDM with DBT	8	5	3
CT	4	4.3	-0.3
Radiography	2	2	0
Conventional fluoro or C-arm	3	1.9	1.1
Interventional/angio/cath	6	3.1	2.9
CT of PET/CT	4	3.3	0.7
CT of SPECT/CT	4	3.2	0.8
SPECT or dual-head gamma	8	4.9	3.1
PET	6	4.5	1.5
Ultrasound	2	1.7	0.3
MRI	8	6.3	1.7

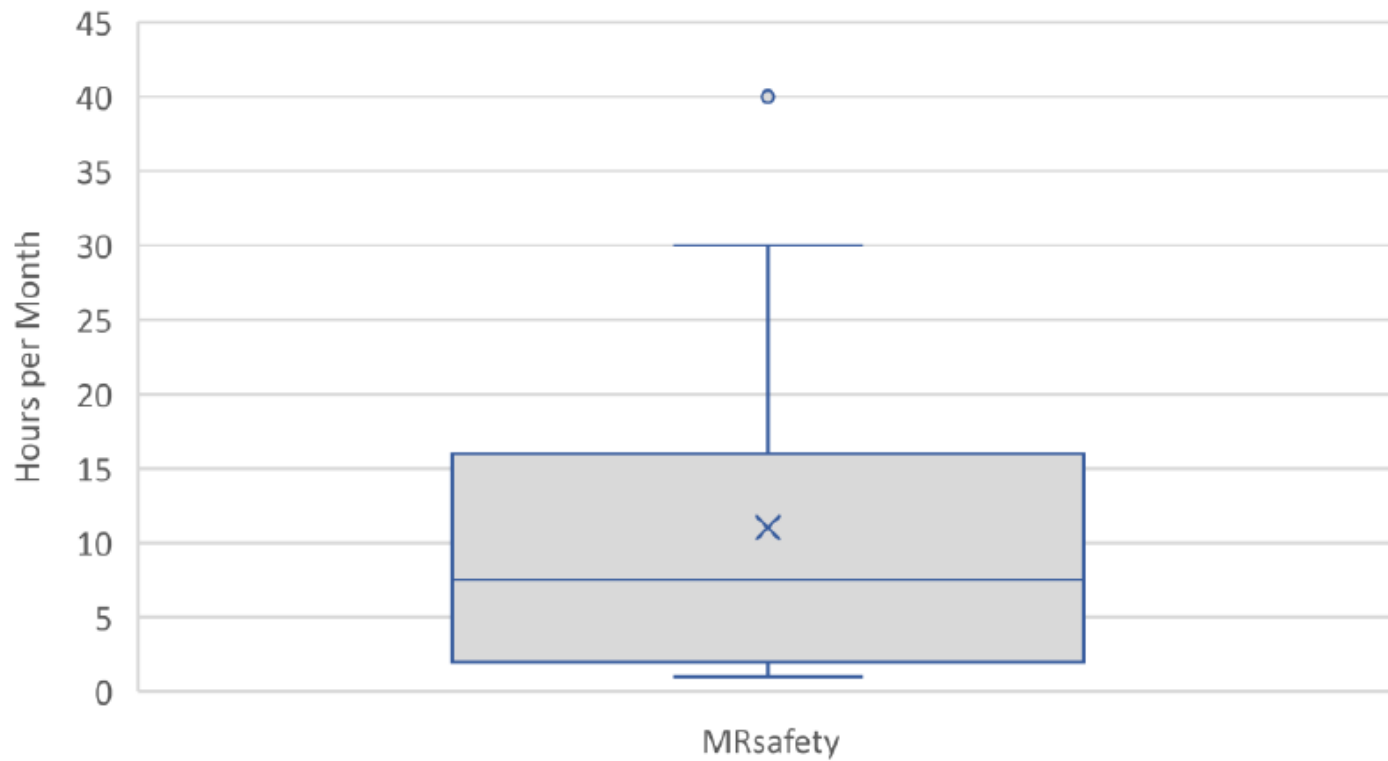
Granularity on preparation



Lifestyle considerations



Choose your own adventure (3)



Next steps

Report in progress to synthesize data

Five sections:

- Level 1 EPE hours
- Analysis of Level 2 services
- Age distribution and attrition outlook
- Skill and knowledge gaps
- Lifestyle considerations

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