

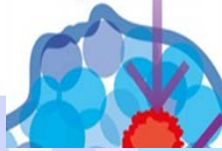
11B Quality in RT – abstract 277



Moving a large and complex radiotherapy department: a medical physics perspective

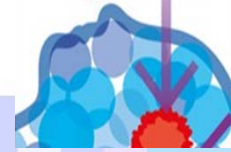
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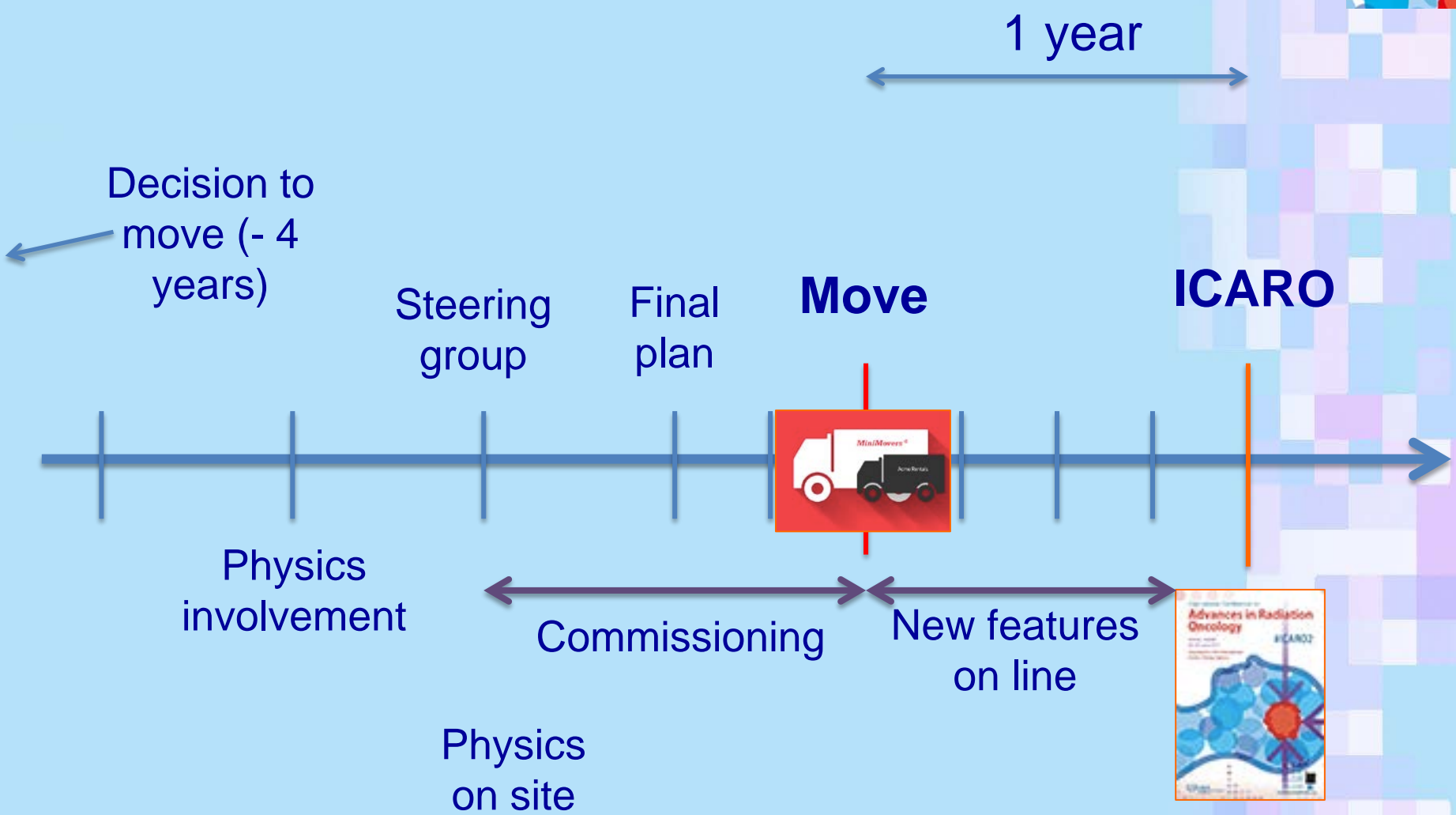


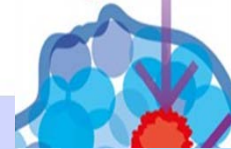
Objectives

- Describe the relocation of a large radiotherapy department
 - Peter Mac: 5 campuses, 16 linacs, 7000 RT patients
 - Main site: 6 linacs, brachytherapy, SRS, SABR, TBI, TBE, intraoperative RT – no VMAT prior to move!
- Consider medical physics involvement in planning and process
 - Commissioning
 - Radiation Safety
 - Resources



Timeline





The Move

East Melbourne





The Move

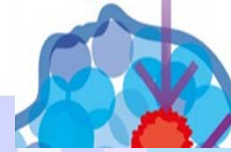
East Melbourne



June 23, 2016
Lights off



June 27, 2016
Lights on



The Move

East Melbourne

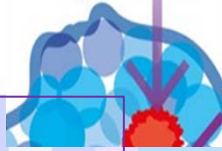


June 23, 2016
Lights off



June 27, 2016
Lights on

Actually 25th for emergency treatment



Status of equipment

What stayed behind:

4 linacs, CT, superficial, HDR brachy

Most PCs

About 70 patients completed treatment in the week before the move

What moved:

2 linacs (6 weeks transition), 3 planning systems including file server, Independent MU check (Mobius 3D)

20 Physical Sciences staff

70 Patients (require dual planning)

What is new:

4 linacs, 2 CT, superficial, HDR

VMAT, 10X

Offices, PCs

Coffee machine



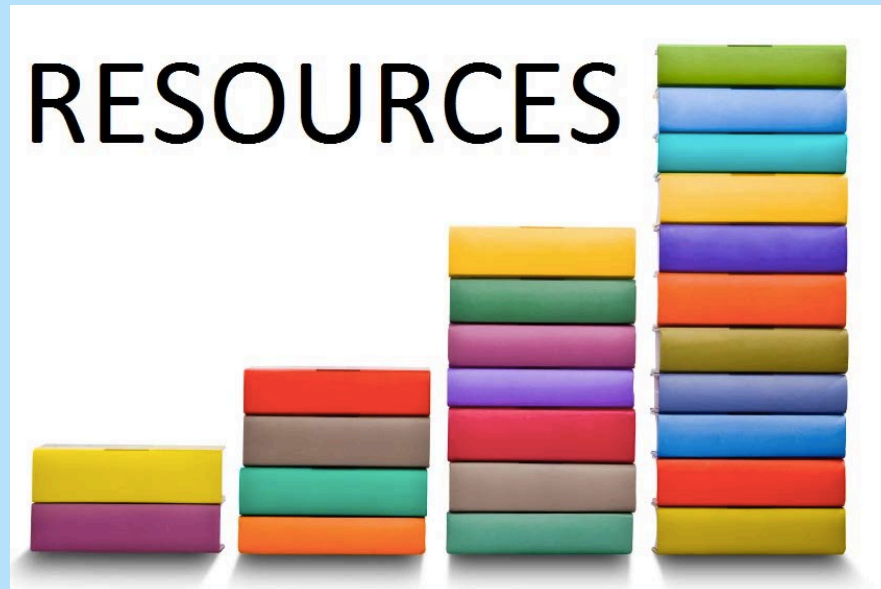
Issues

- 4 new machines + new features (VMAT, 10MV, FFF)
- 2 transferred machines → 2 months not available, re-commissioning required
- Expected transfer of patients to other campuses
 - No TBI, TBE, brachytherapy available for up to 4 weeks
 - SABR to different hospital
 - Patient (and referrer) preferences may not be aligned with plan
- Transfer patients require re-plans for new machines



Additional resources granted

- Business case developed for Medical Physics:
 - 1 temporary new staff member for 12 months
 - Upgrade of water phantom
 - New diagnostic beam assessment tools
 - Daily QA devices for every machine





Managing new features

- Safety first
- Very useful: independent plan verification software (Mobius 3D)
- Some 'Commissioning on the flight'
 - New risky common technique: complete individual patient QA for first 50 patients (example VMAT 10X)
 - New procedure that is easier to implement: complete individual patient QA for first 10 patients (example breast RT e-comp)
 - Formal review of outcomes and decision as to how to proceed further

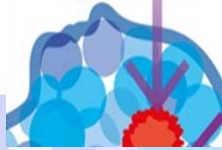


Staff planning 'conventional'

- Consideration focused on new site
- One temporary new staff member for 1 year prior to move
 - Accrued leave due at time of move
- No leave for staff 2 months prior and 2 weeks after the move



Missing physicist

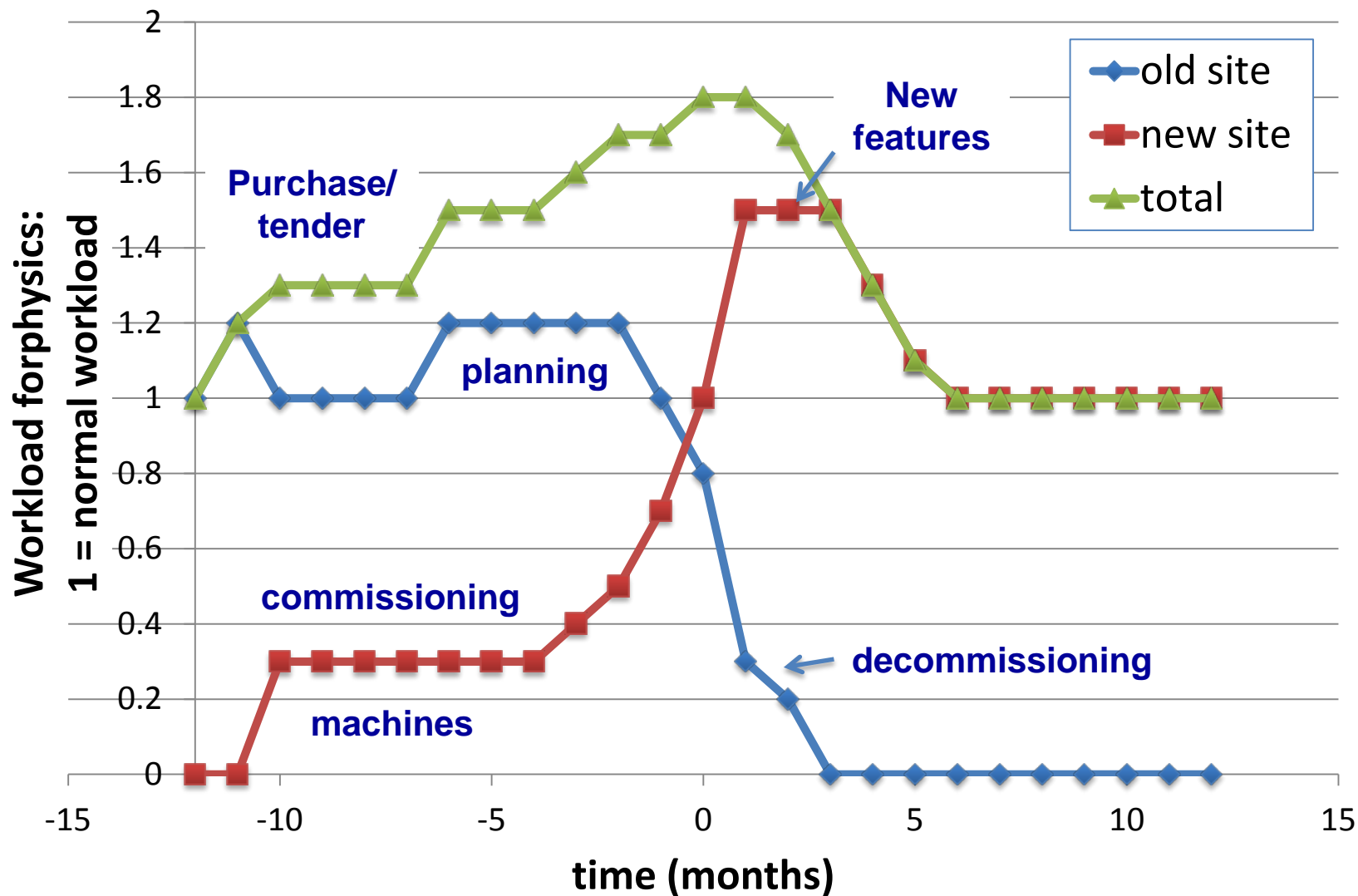


New demand at new site...

- Excitement of oncologists at new site
- Demand of new features immediately
- Media generated interest and expectations amongst referrers and patients



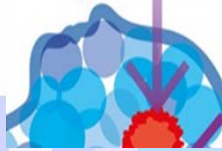
Workload modeling for medical physics (hindsight...)





Unexpected issues

- Demand for senior staff familiar with the services and with trust of other staff increased dramatically
- Moving in winter where staff is more likely to be sick is not ideal
- A near miss incident caused additional paper work and investigation – however, it also highlighted the need for attention and quality assurance



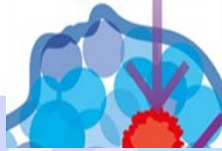
Important challenges

- Communication
 - Staff (to and amongst)
 - Patients, community, contractors
 - Referrers, media, regulators
- Motivation
 - Workload up
 - Ownership
 - Other sites feel the pain



Lessons learned

- Consider time after move – this is when most of the new things happen
- Demands are on senior staff
- IT needs and complexities cannot be overestimated
- Radiation Safety requires significant extra resources:
 - Shielding design
 - Security planning
 - Licensing and regulation
 - New staff and contractors



Conclusions

- Moving a department combines two difficult to combine expectations:
 - A brand new department with new state of the art features
 - Seamless continuation of services
- Medical physicists should be integral part of the process as early as possible
- Good communication and multidisciplinary involvement is essential