





# QATrack+

An **Open Source** Tool for Radiotherapy QA

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# Motivation

Pain is a powerful motivator



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## What we had

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- 150+ spreadsheets
- Fragmented data entry interfaces
- Painful to review and approve
- Painful to generate plots
- Painful to add new tests

## What we wanted

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- Single point of access
- Consistent data entry interface
- Straightforward review and approval
- Easy to look at data trends
- Quick test modifications

# Let's Buy Something

No need to reinvent the wheel

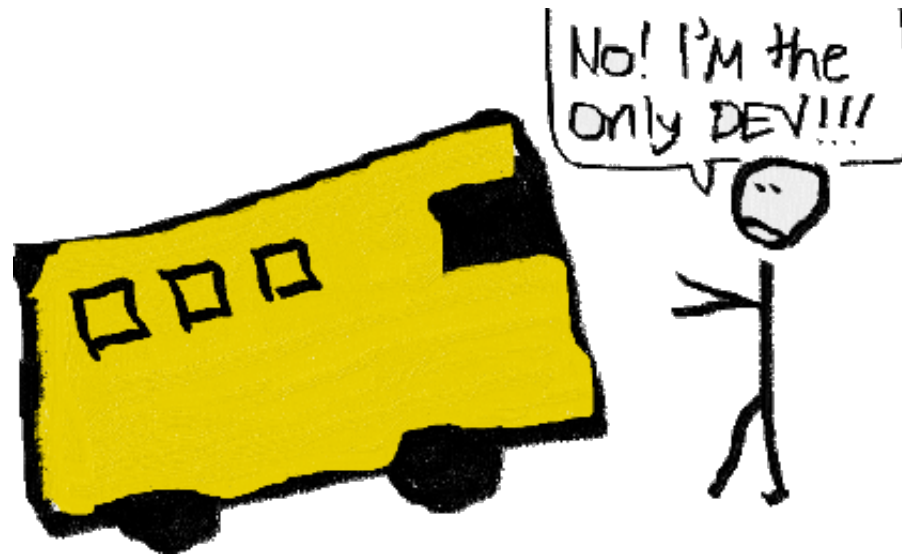
- Atlas comes closest to what we wanted
- **Not straightforward for therapists**
- Test frequencies hard wired (Daily, Monthly, Annual)
- Not web based
- Not extendable
- **Cost?**



# Let's Build Something!

## Perils of an in-house system

- Previous attempts
- We are not software developers!
- **Risky** — Is this even going to work?
- Very low “bus factor”



<http://adamprescott.net/2012/12/04/lean-development-teams/>

# Mitigating the Risk

- Develop prototype
  - Proof of concept
  - Allowed for time estimate
  - Demonstrate developer competency :)
- Open Source
  - Give it away
  - Build a community of users
  - Mutual benefit for TOHCC & Medical Physics community
  - (Hopefully) increases the projects bus factor
- Go for it!





QATrack+



# QATrack+ at TOHCC

From Development to the Clinic

Dec 2011	Prototype
Jan 2012	Started development
Jul 2012	Gather feedback from Therapy focus group
Aug 2012	First clinical pilot: Tomotherapy Morning QA
Sep 2012	Train Therapists: two 20min sessions
Oct 2012	Begin clinical rollout of daily QA
Dec 2012	Monthly QA rolled out as time permitted
Jan 2013	Start publicizing

# Some Numbers

That's a lot of data!

- Clinical for ~8 months
- 140 users over (use [Active Directory!](#)) spread over 2 campuses
- 140 test lists made up of 1400 tests
- 10 000 test lists completed
- **170 000 test results**

# Why you shouldn't use QATrack+ :(

- No official or paid support
- **No guarantees** about future development
- Still a **very young** project – continuing to evolve
- Not a turnkey operation (ask Ned!)
- Learning curve for configuration (ask Jason!)

“Open source is only free if your time is worthless ” –

# Why you should use QATrack+ :)

- Features
- Free (as in “free beer!”) and free (as in “free speech”)
- Still a very young project – help to evolve it
- Extensible
  - Modify yourself or hire someone to do it for you
- Transparent development process
  - Bug reports
  - Feature requests

“Open source is worth it!” –

# The Future

- New test types (v0.2.7)
  - File uploads
  - Strings
- Data Export (v0.2.7)
- **Inventory (v0.3.0)**
- **Event Log (v0.3.0)**
- **Plugin System**
- Reporting (Compliance)
- Data Archiving
- Improved Plots (scatter plots etc)

# Thank You!

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slides: [randlet.com/papers-talks/](http://randlet.com/papers-talks/)





Demo

