UCSD EXPERIENCE, DESIGNING AND IMPLEMENTING CORRECTIVE ACTIONS

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Design and implementation of corrective actions

Outline

1. Designing corrective actions
   - Something has gone wrong, what are you going to do about it?
2. Implementing corrective actions
   - Generating buy-in and promoting behaviour change

A brief story

The pitch

The hit

The (failure mode) effect

The reaction

The feedback

The corrective action

Let's play ball!

The pitch

The hit

The ‘next’ (failure mode) effect

The learning

Designing corrective actions

- There are three commonly used options for designing corrective actions
  1. Option 1 – Re-invent the wheel
     - Start from scratch and make up your own corrective action
  2. Option 2 – Beg, borrow, and steal
     - See what other people have used as corrective actions and choose one of these
  3. Option 3 – Progressive adaptation
     - Take what's already been done and modify it for your unique situation

Option 1 - Re-invent the wheel

- Why this is a **good** idea
  1. This is a great way to improve multi-disciplinary communication and teamwork in the clinic.
  2. Remember that everybody wants a safer, better workplace and that everybody wants to contribute to this effort.
  3. Unfortunately, at a very detailed level, most clinical processes are unique, re-inventing the wheel ensures you get a solution that is applicable to your unique process.

Option 1 - Re-invent the wheel

- Why this is a **bad** idea
  1. This takes a lot of time and effort.
  2. Immediately after the incident, motivation will be high, but quickly wanes if the perception is that there is not a lot of progress being made.
  3. You could get it fantastically wrong.
     - Your corrective action may be completely ineffective
     - You might actually make things worse, or cause problems elsewhere in the clinic.

Option 2 – Beg, borrow, and steal

- Why this is a **good** idea
  1. This could be really quick and easy.
  2. Allows you to 'strike while the iron is hot' – to implement change while motivations are high.
  3. Potentially increases the chances that the corrective action is effective – at least two groups think it's a good idea.
     - Maybe someone has even demonstrated (published) that the corrective action is effective.

Option 2 – Beg, borrow, and steal

- Why this is a **bad** idea
  1. Your process is definitely a little bit different and may be very different from the clinic where the corrective action was shown to be effective.
     - You may be making things worse at your clinic by implementing a corrective action that has been proven to be effective in another clinic.
  2. Risk perception of being a dictatorial leader.
  3. There's a missed opportunity for teambuilding/for improving multi-disciplinary communication.
  4. It's hard to know what corrective actions others have implemented.

Option 3 – Progressive adaptation

- Why this is a **good** idea

1. Take something that someone else has proven to be effective and adapt it for use in your process.
2. Medium time and effort required – potentially can still 'strike while the iron is hot'.
3. Great opportunity for teambuilding.
4. Great opportunity for improving multi-disciplinary communication.

Option 3 – Progressive adaptation

- Why this is a **bad** idea
  1. It's hard to know what corrective actions others have implemented.

What corrective actions are available?

- We need a list of corrective actions
  - comprehensive summary of corrective actions
  - classified using some sort of taxonomy
  - ranked according to effectiveness/resources
- Luckily, this list is forthcoming…
  - Brainchild of Steve Sutlief
  - We've looked at over 1000 reported RO-specific corrective actions

Corrective Action Taxonomy: Context-, Role-, Hazard-, Causal based

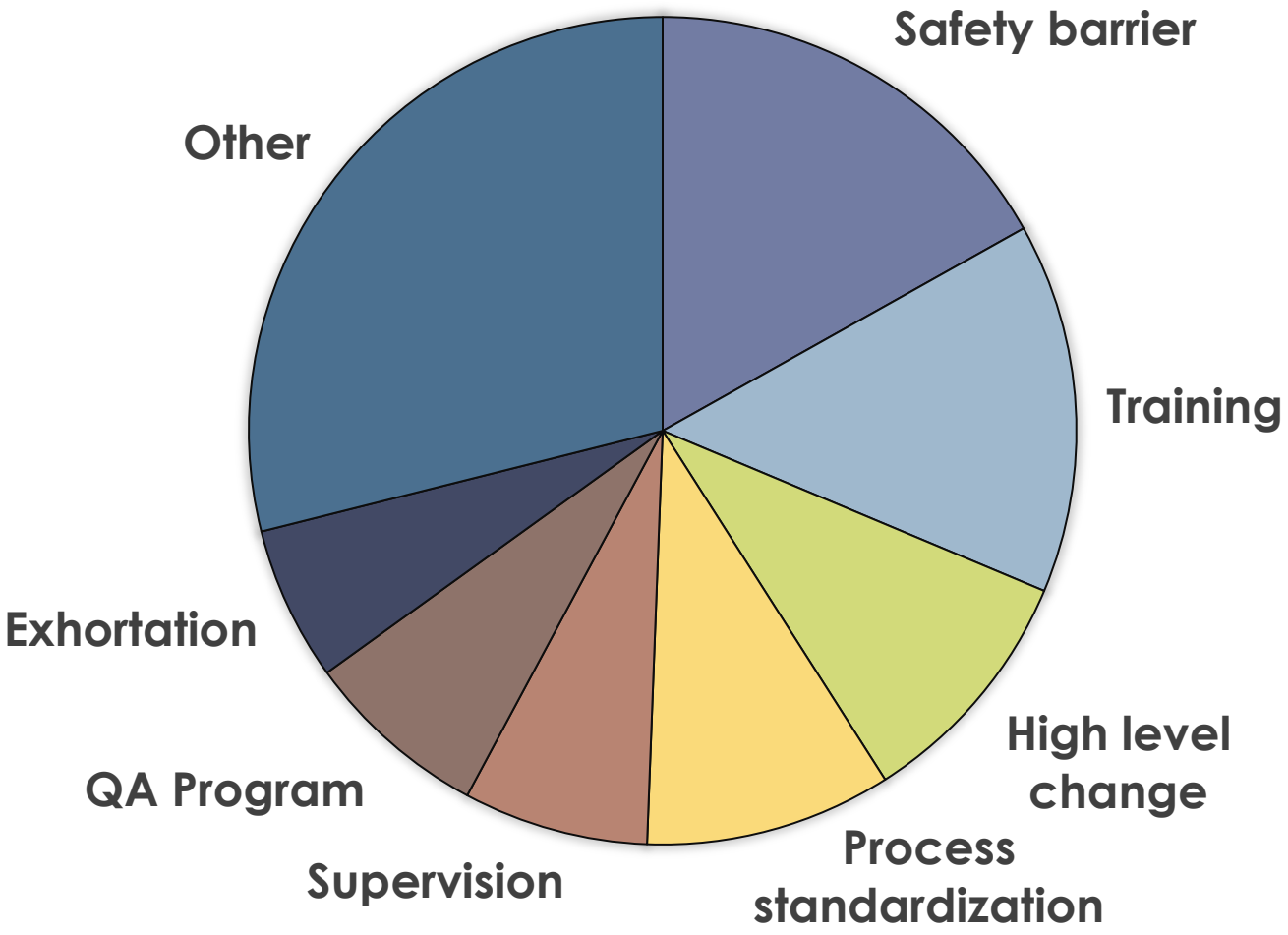
Process Step (location)
Patient assessment
Imaging for RT planning
Treatment planning
…

Role	*Hazard*
Physician	Elimination
Physicist	Substitution
Dosimetrist	Engineering
Therapist	Administration
…	…

Causal	*Second Level*
Organizational management	Policies, procedures, regulations Training; sharing knowledge Leadership & external controls Physical Environment …
Technical	Accept. testing, commissioning Equipment design Equipment maintenance Environment (ergonomic) …
Individual actions	Staff behaviors Patient circumstances

Sutlief, Brown AAPM 2014

Distribution of Corrective Actions



The two most commonly used corrective actions are…

2%	1.	More Hand Washing and Less Texting
9%	2.	Supervision and High Level Change
1%	3.	Exhortation and Punishment
88%	4.	Safety barriers and Training
1%	5.	Less Hand Washing and More Texting

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2. Supervision and High Level Change
3. Exhortation and Punishment
4. Safety barriers and Training
5. Less Hand Washing and More Texting

Implementing Corrective Actions

- Let's split this up into…
  1. **Safely** implementing corrective actions
  2. **Effectively** implementing corrective actions

- These can sometimes be at odds...
  1. Take so long to figure out how to safely implement something that people no longer remember the problem
  2. Implement a corrective action that everybody loves but causes negative downstream effects

Safely Implementing Corrective Actions

- This is really about…
  1. making sure that the corrective action will address the problem you are having
  2. making sure you don't make things worse - understanding downstream effects
- Must include some sort of hazard analysis
  - Sit down with your multi-disciplinary team and try to figure out everything that could possibly go wrong
  - You can't imagine everything that will go wrong…

Safely Implementing Corrective Actions

- Implementation
  - Test the corrective action in a mock setting
  - Test the corrective action in a mock setting **again**!
  - Roll out the corrective action in a step-wise fashion
  - Seek feedback and be open to change

Effectively Implementing Corrective Actions

- This is really about…
  1. generating buy-in from those who are directly effected,
  2. understanding corrective actions as behavior changes.
- Generating buy-in and promoting behavior change
  - If you don't have this part figured out, your corrective action is destined to fail!!
  - I promise.

Generating buy-in and promoting behaviour change

- Helps to ensure that...
  - Your fancy new corrective action is adopted
  - Is persistent (even past the initial newlywed phase)
- So then the questions is – How do you this?

Generating buy-in and promoting behaviour change

- My thoughts…
  - Involve as many stakeholders in the process as possible/reasonable
  - Value all of their opinions equally
  - Communicate way more than you think might be necessary
  - Be ready to accept that your first solution is very unlikely to be the best – it will need to be modified
- What do the experts say?

How do you promote behavior change?

- Strategies for assisting health workers to modify and improve skills. – World Health Organization, 2000
  1. Predisposing strategies
  2. Enabling strategies
  3. Strategies for reinforcing behavior change
  4. Strategies used at the team level

Promoting behavior change

1. Predisposing strategies
   - Educational materials
   - Conferences
   - Outreach visits
   - Local opinion leaders
   - Self assessment

Strategies for assisting health workers to modify and improve skills: Developing quality health care, a process of change – Woodward, WHO, 2000

Promoting behavior change

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Promoting behavior change

2. Enabling strategies
   - Practice rehearsal
   - Clinical guidelines and care maps
   - Reminders

Promoting behavior change

- Practice rehearsal
  - Providing opportunities to rehearse new skills within the context of a continuing education event has been shown to produce positive results. (Kottke, Brekke,Stolberg & Hughes, 1989)
- Clinical guidelines and care maps
  - In a review of 59 studies, all but 4 found positive change in behavior with the use of clinical guidelines.
  - Clinician involvement and focused educational events are predictors of success.

The use of clinical guidelines and care maps…

9%	1.	Has been shown to be ineffective
17%	2.	Warrants further study
72%	3.	Has been shown to be highly effective
1%	4.	Is something that we should leave to hospital CEOs
2%	5.	Is not of interest in radiation oncology

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Promoting behavior change

- Reminders
  - These are essentially checklists or time-outs and have been shown to be effective in changing behavior – improving compliance with clinical protocols

Reminders and checklists…

1%	1.	Are commonly perceived as a waste of time
7%	2.	Are known to be ineffective
88%	3.	Can improve compliance with clinical protocols
2%	4.	Are the most likely cause of future incidents
3%	5.	Are designed deliberately by management to force everyone to do more paperwork

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2. Are known to be ineffective
3. Can improve compliance with clinical protocols
4. Are the most likely cause of future incidents
5. Are designed deliberately by management to force everyone to do more paperwork

N Engl J Med. 2006 Dec 28;355(26):2725-32. An intervention to decrease catheter-related bloodstream infections in the ICU. Pronovost P

Promoting behavior change

3. Strategies for reinforcing behavior change
   - Audit and feedback
   - Peer review

Promoting behavior change

4. Strategies used at the team level
   - Development of quality improvement (QI) teams
   - QI teams have been shown to have positive impacts on quality in healthcare (Laffel, 1986; Berwick, 1990; Burns, 1992)

The development of QI teams…

1%	1.	Is one way to get people excited about coming to work
71%	2.	Is one way to promote behavioral change
19%	3.	Is a reasonable substitute for monitoring quality indicators
9%	4.	Is absolutely necessary in a single-physicist clinic
0%	5.	Is unlikely to be effective

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5. Is unlikely to be effective

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Summary

- We've looked at how to design corrective actions
  - Progressive adaptation
  - List of corrective actions forthcoming
- We've looked at how to implement corrective actions
  - Safely – hazard analysis and testing
  - Effectively – generating buy-in and promoting behaviour change