Designing a Boot Camp for Pediatric Fellows

Debra Boyer, Chris Kennedy, Don Boyer, Jim Bale
Disclosures

- We have nothing to disclose
Why do a Fellow’s Boot Camp?

- Decreased duty hours
  - Skills not obtained during residency
- Obtain uniformity amongst new fellows
- Skills training
- Team training
- Fellow (& faculty networking)
- Scholarly activity
Structure of Workshop

- Performing a Needs Assessment
- Identifying and Assessing Resources
- Course Development
- Example of Boot Camp Activity
Needs Assessment

Needs → Outcomes

- What is a needs assessment?
- Why do we conduct one?
- What does it entail?
- How do we acquire results?
- Who do we ask?
- How do we analyze and use results?
- How do we assess outcomes?
A Structured Approach

- Identify purpose
  - Focus groups
  - Brainstorming
- Determine target and enabling populations
  - Who are your learners?
  - Who are your faculty?
  - What other groups are important to ask?
- Define goals
  - Short range
  - Long range
A Structured Approach

- Determine the best mechanism(s) to answer these questions
  - Focus groups
  - Questionnaires (SurveyMonkey, others)

- Define the questions
  - Create questions that give useful answers
  - Should help to define learning gaps
A Structured Approach

- Collect and analyze data
  - Try to differentiate needs vs. wants

- Implement change and measure outcomes
  - Determine performance outcomes to measure
Example- Pediatric Pulmonary Fellowship

- Clinical exposure, teaching experiences and procedural training are variable
- No formal training with simulation
- No formal training in difficult conversations

- Other issues not yet identified
Example-Needs Assessment

- Current Fellows (7/8)
- Current Faculty (14/18)
- Former Fellows (15/23)
- Pediatric Pulmonary Training Directors (33/49)
- Nurses (4/6)
Simulation Training for Management of Hemoptysis

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How adequately trained are fellows in

% superb/adequately trained

- Sleep
- Pulm HTN
- BPD
- Chronic Vent

- CHB faculty
- Program Directors
- Former Fellows
- Current Fellows
Exercise- Needs Assessment

1. Define your target group of learners
2. What groups will you survey for your needs assessment?
3. Develop a few questions for each group
4. Discuss as dyads/triads
Resources

Rio Tinto Copper Mine, Utah
Learning Objectives:
1) Identify and analyze resources needed for a fellowship boot camp

2) Identify challenges and obstacles which may arise in attaining such resources and develop a strategy to address these obstacles
The 5 W’s:

- **Who** – human resources
- **What** – technical resources
- **When** – timing
- **Where** – location considerations
- **Why** – NEEDS ASSESSMENT
The 5 W’s:

- **Who** – *human resources*
  - Fellows/Participants
  - Faculty
  - Technicians
  - Administrative staff

- **What** – *technical resources*
  - Simulation equipment
  - Supplies
  - Food

- **When** – *timing*
  - Availability of participants
  - Availability of faculty
  - “Big picture” fit

- **Where** – *location availability*
  - Catchment area of participants
  - Cost of location
  - Resource availability
Exercise - Resources

- Identify resources needed for your Boot Camp
  - Consider challenges/obstacles

- Identify possible areas of funding

- Discuss as dyads/triads
HUMAN RESOURCES

- **Fellows/Participants**
  - # of participants without loss of educational impact
  - Desired catchment area? (Local, regional, national or international)

- **Faculty**
  - Who will teach/facilitate? Curriculum development?
  - Are they sim-trained or will they have to be taught as well?

- **Technicians**
  - Room and skills station set-up
  - Simulation equipment technical support

- **Administrative staff**
  - Registration, Pre-Course information/planning, Evaluations, Post-course follow-up

- **Other**
  - Actors or other participants (i.e. models for ultrasound)
The 5 W’s: What?

TECHNICAL RESOURCES

- **Simulation equipment**
  - Manikins and computer support
    - Existing & corporate loan
  - Sufficient dispensable components
  - Utilize assistance of other near-by programs participating

- **Supplies**
  - Stepwise approach to each session, with all resources listed out (Equipment Lists)

- **Food!!!**
The 5 W’s: When?

**TIMING**

- **Availability of participants**
  - Call schedules & cross-coverage
  - Travel times
  - Competing interests (national conferences, exam dates, etc)
- **Availability of faculty**
  - “Lost” time of faculty
  - Weekday vs. weekend
  - Travel considerations
- **“Big picture” fit**
  - Must fit within the larger scale curriculum for participating programs
LOCATION, LOCATION, LOCATION!

- Catchment area of participants
  - Centralized location?
  - Availability of desired location
- Cost of location
  - Funding availability or shared cost?
- Resource availability
  - Are other resources limited at certain times or locations?
Resource Attainment

- Largest Challenges to Boot camp Implementation
  - **TIME**
    - Financial compensation (monetary constraints)
    - Other incentives for faculty participation
      - Institutional recognition
      - Networking abilities
      - Publication potential if studied
  - **FUNDING**
    - Local, Regional and National Grant sources
      - Intramural funding
      - AAP
      - Sub-specialty society funding
      - Corporate “sponsorship”
      - AHRQ
Course Development
Series of steps

- Write objectives - simple sentences, think in measurable terms
- Get key stakeholders together
- Match objectives with learning method
- Decide how to evaluate as early as possible
- Pilot and revise - consider different aspects realism, difficulty, timeframes
Think about these questions

What is the content of this course? knowledge, skill, behavior?

How will the course be delivered to the participants?

What are the number and duration of course sessions?

What are the course tasks for participants?
Unique bootcamp features

- Created around focused knowledge skill or behaviors specific to training - so should focus on deliberate practice.
- Identify individual learning gaps and fill them - so should be very learner focused.
- Needs to be challenging with varying levels of difficulty - so assume nothing but accelerate complexity to make fellows think.
- Minimize didactics - so should be as immersive as possible.
Format Options

- The marathon session
- Multiple sessions - basic skills vs bootcamp
- Benefits and downsides
Evaluation methods

- Primarily formative
- Facilitated debriefing - script key questions to ask learners about the situation
- Checklist vs global assessment
- Consider objective criteria - such as time to troubleshoot problems
- If skills are the focus - break them down to a series of steps
- Consider self reflection to create ILP’s
My advice

- Think big, creatively, and fun
- Plan evaluations from the beginning
- Scheduling is a nightmare-start way ahead
- Overplan
- Over estimate the time needed
- Pilot with different levels of providers
- Use nontraditional partners
Exercise- Course Development

- Develop 1-2 learning objectives for one session of your boot camp
- Design a Boot Camp Activity to address this objective
- Develop an assessment tool
- Discuss in dyads/triads
Example of Boot Camp Activity
### Chest tube placement

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No sig differences btwn groups
How adequately trained are fellows in:

- Chest Tubes
- Career Development
- Quality Improvement research

% superb/adequately trained

- p<0.05

Categories:
- CHB faculty
- Program Directors
- Former Fellows
- Current Fellows
Summary - Usefulness of simulation

- Absolutely essential
  - Complications of FB
  - Management of hemoptysis
  - Management of PTX
  - End-of-life care
  - New diagnosis of CF

- Nice, but not essential
  - Thoracentesis
  - Conscious sedation
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Learning Objectives

- Recognize pneumothorax as complication during bronch
- Treat pneumothorax
- Skills
  - Chest Tube Placement
  - Pleurovac troubleshooting
Structure of Session

- High fidelity simulation
  - Bronchoscopy with transbronchial biopsies
- Patient develops pneumothorax
Structure of Session

- High fidelity simulation
  - Bronchoscopy with transbronchial biopsies
- Patient develops pneumothorax

- Skills session- Chest tube placement
Structure of Session

- High fidelity simulation
  - Bronchoscopy with transbronchial biopsies
- Patient develops pneumothorax
- Skills session- Chest tube placement
- Skills session- Pleurovac Jeopardy
Did we meet our learning objectives?

- Recognize Pneumothorax during bronch
- Treat Pneumothorax
- Skills
  - Chest Tube Placement
  - Pleurovac troubleshooting
Lessons Learned:

“Having sim-trained facilitators is key.”
“It’s exhausting but hugely rewarding.”
“Finding people to help co-invest is hugely important.”

Anne Ades, MD
Director of NICU Simulation, CHOP

“It’s like a big jigsaw puzzle.”

Ellen Deutsch, MD
Director of Perioperative Simulation, CHOP

“Stick to the principles of instructional design and mix it up!”

Roberta Hales, MHA, RRT-NPS, RN
Simulation Educator, CHOP
References

Contact

- debra.boyer@childrens.harvard.edu
- BoyerD@email.chop.edu
- James.Bale@hsc.utah.edu
- ckenney@cmh.edu
Questions