

High Value, Cost-Conscious Medicine Curriculum for Pediatric Sub-Interns

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Disclosure

I have no financial conflicts of interest to disclose.



Reflective Poem

*But I don't understand. Shouldn't we get
an X-ray just to make sure?*

*Won't antibiotics help? My cousin's kid
had something similar and it cleared
up with antibiotics.*

*Isn't there something else we can do?
What else can we do?*

*It's just that I want the best for my child.
I want you to do something!
Do something*

*An X-ray isn't indicated
Antibiotics don't actually treat viral
illnesses*

*Time will help
We can wait*

*We all want your child to get better
I'm doing the best that I can, but
sometimes rest is best.
The best medicine is no medicine.*

*I want to do something, anything to
make your child better.*

*I stay awake at night running
Differentials through my head, tests
to run, consultants to ask, but come
up with nothing but time.*

Time will heal your child.

It feels like a cop-out

*I can explain the risks and benefits all
day, but still the answer is
Time.*

Problem Identification

- **\$765 billion** of healthcare costs have been identified as potentially avoidable
- Physicians are responsible for directing **>85%** of all spending
- Medical students often witness overuse of resources and may go on to model what they have observed





Targeted Needs Assessment

- Competency with the lowest score:
“Demonstrate incorporation of cost awareness principles in standard clinical judgments and decision-making”



Objective

To develop, implement, and evaluate a curriculum on high value, cost-conscious medicine for 4th-year medical students completing a Pediatric Sub-Internship (Sub-I)





Methods: Curriculum Development

Learning Objectives

1. Describe what high value, cost-conscious medicine involves
2. Rate high value care (HVC) as important to the future of our healthcare system and patient care
3. Rate communication about HVC with patients, families and consultants as beneficial to patient care
4. Demonstrate effective communication skills for discussing HVC with patients, families and consultants



Methods: Curriculum Development

Assignments

- Readings
- Fishbone Diagram
- *Choosing Wisely*[®] communication e-module
- 3 novel HVC e-modules

Direct Observations

- Observation of communication skills by an Attending physician

Reflective Writing

- Unstructured (free-form) writing or poetry

Small Group Discussion

- Monthly session for all students





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HVC e-Modules

Waste and Outcomes

In 2009, the United States spent **\$2.5 trillion** on health care!



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Methods: Curriculum Implementation

Sub-Internship Site	Number of Students (% of total students)
Children's Colorado Inpatient Unit	20 (49%)
Neonatal ICU at University Hospital	6 (14.5%)
Neonatal ICU at Denver Health	6 (14.5%)
Denver Health Inpatient Unit	4 (10%)
Children's Colorado Pediatric ICU	3 (7%)
Children's Colorado Neonatal ICU	2 (5%)

- Educational materials uploaded to an online learning platform



Methods: Curriculum Evaluation

Retrospective Survey

- Administered during Small Group Discussion
- Learner perception of knowledge, attitudes, and skills
- 100% response rate



Methods: Curriculum Evaluation

Content Analysis of Reflective Writing

- 3 independent coders
- Tabulated different types of writing
- Identified reflective themes



Methods: Curriculum Evaluation

Fishbone Diagram Checklist

- 9-item scoring checklist

- Identify a problem and create a clear, specific problem statement
- Identify possible causes of the problem
- Determine the major categories of causes of the problem
- Continue to ask "Why?" and apply the *5 Whys technique*
- Organize all secondary causes under appropriate categories
- Present at Small Group Session



Methods: Curriculum Evaluation

Direct Observations

Rochester Participatory Decision-Making Scale (RPAD)

- Assesses physician behavior that encourages patient participation in decision-making

1. Explains the clinic issue or nature of the decision
2. Discussion of the uncertainties associated with the situation
3. Clarification of agreement
4. Examines barriers to follow-through with treatment plan
5. Gives patient opportunity to ask questions
6. Medical language matches patient's level of understanding
7. Asks, "Any questions?"
8. Asks open-ended questions
9. Physician checks his/her understanding of the patient's point of view

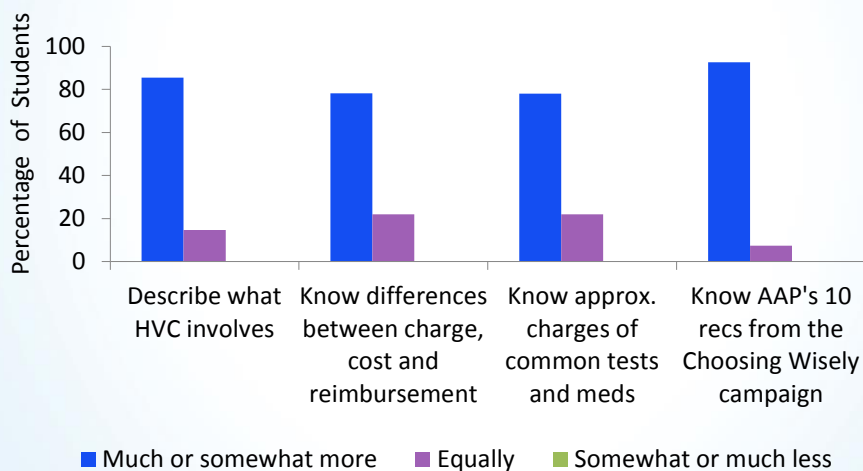


Results

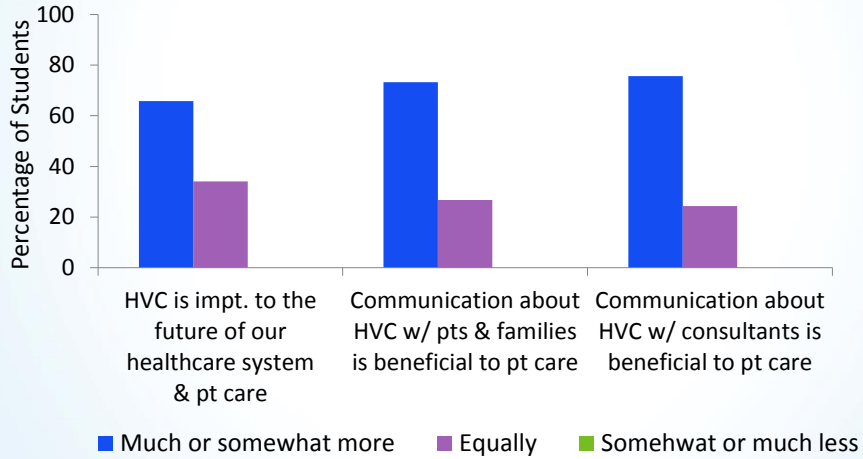
- 93% rated the overall educational experience as **excellent or very good**
- 88% completely or mostly agreed with being **prepared to incorporate cost awareness principles in standard clinical judgments and decision-making**
- 93% reported a self-perceived change of now being much or somewhat more likely **to consider HVC when developing a management plan**



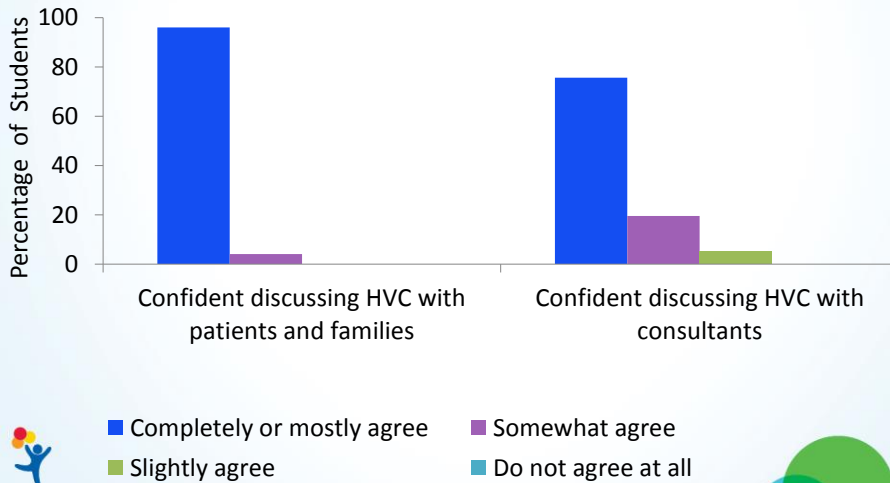
Results: Cognitive Changes



Results: Attitudinal Changes

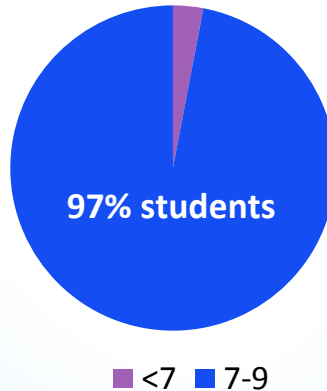


Communication Skills: Confidence Levels



Results:
Direct Communication Observations

**Rochester Participatory Decision-Making
Scale (RPAD) Scores**

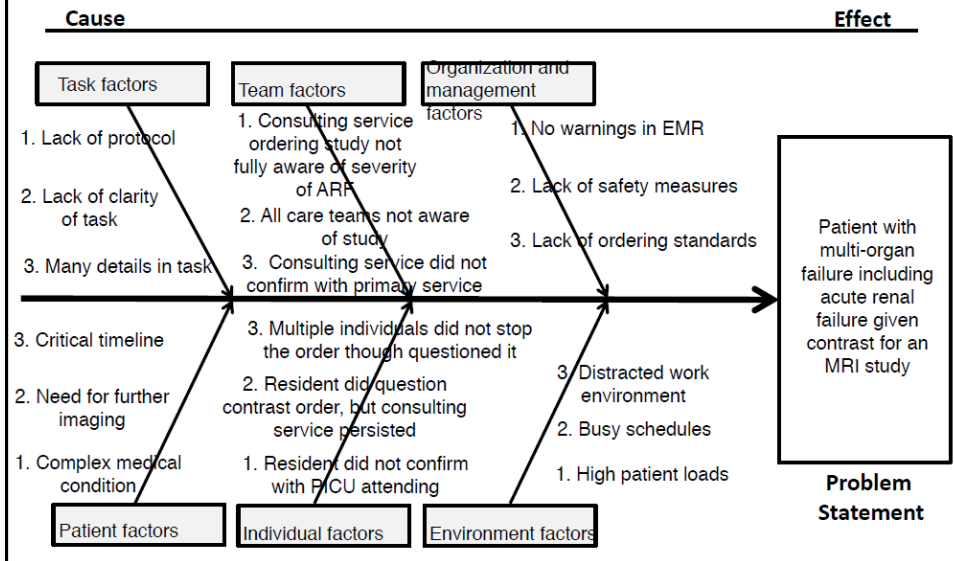


Results:
Fishbone Diagrams

- 100% met all criteria on scoring checklist
- Students successfully recognized system issues that led to unintended consequences

- ✓ Identify a problem and create a clear, specific problem statement
- ✓ Identify possible causes of the problem
- ✓ Determine the major categories of causes of the problem
- ✓ Continue to ask "Why?" and apply the *5 Whys technique*
- ✓ Organize all secondary causes under appropriate categories
- ✓ Present at Small Group Session

Student Fishbone



Results: Content Analysis of Reflective Writing

- **Structure**
 - 36 free-form narratives
 - 5 poems
- **Focus**
 - 23 high value care
 - 18 low value care



Results: Content Analysis of Reflective Writing

Barriers to HVC

Limit
unnecessary
interventions

Communication

Emotional
reactions


Practice changes

Role of
consultants



Student Reflective Writing

*After discussing the **pros and cons** of each of the modalities, the mother felt comfortable with the plan... I provided **clear reasoning** of why one modality was preferred over the other. This **shared decision-making** went a long way in this explanation of **high value care**.*





Discussion

- Improved perceived knowledge, attitudes, and skills by using multiple educational strategies and innovative modules
- Demonstrated increased knowledge and honed skills through fishbone diagrams, reflective writings, and direct observations
- Geared towards trainees and can be completed during a 4-week rotation
- Asynchronous components allow for flexibility and easy maintenance



Future Directions

- Instruction on hospital finances
- More strategies for discussing HVC with consultants
- Maintaining education throughout Residency and one's career






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