



High-Value Care in Pre-Clinical Medical Education: A Pilot of an Integrated Longitudinal Curriculum

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Background

- Health care affordability is a growing area of concern in the US, with increasing emphasis on the **role of physicians** in practicing high value care (HVC)
- Over **50% of healthcare spending** is driven by **hospital care and physician and clinical services**¹, which highlights the role of physician decision-making in driving healthcare costs
- Training location and culture** has a long-lasting impact on whether providers prioritize and practice cost-conscious care²
- Principles of HVC are not historically taught in undergraduate medical education, and there are **no existing published curricula** for preclinical learners.
- At UCSF School of Medicine, there is **no longitudinal HVC curriculum** during pre-clinical education

Methods

Key project members: 2 medical students, a faculty advisor, course directors, content area experts and clinical lecturers

1. Foundation– Introduction to HVC Independent Learning Module (HVC ILM)

A 16-minute, online video lecture, introducing the importance of HVC, definitions and frameworks for assessing value, and key examples.

Goal: To give students shared language to begin discussing HVC with peers and teachers in the preclinical and clinical learning environment.

2. Learning– Integrated HVC Clinical Learning Objectives (LOs)

We identified clinical lectures where HVC could be incorporated then, engaged clinical lecturers and content area experts at our institution, as well as Choosing Wisely guidelines, to develop LOs that were deemed clinically important and content-appropriate. Using the LOs, we developed 1-2 slides for inclusion in the relevant clinical lecture.

Goal: Incorporate HVC guidelines and concepts into relevant clinical topics, to help students apply concepts to real world examples. Slides are distinct and easily recognizable with a branded HVC at UCSF logo.

3. Assessment– HVC-Focused Multiple-Choice Questions (MCQs)

Based on each learning objective, we worked with course directors and lecturers to create one MCQ for inclusion in students’ weekly quizzes.

Goal: To help students consolidate and solidify the material presented in lecture through testing application in a clinical scenario.

Results

Curriculum was delivered to **161 students** during the seven-week Airways, Breathing and Circulation course in **Fall 2020** at UCSF.

- Total time of our longitudinal curriculum was 40 minutes (20 minute introductory module and 20 minutes of lecture material delivered over four lectures), in addition to four multiple choice questions.
- LOs developed included
 - 1) Outpatient management of hypertension**
 - 2) Intervention for symptomatic angina**
 - 3) Anticoagulation selection and financial history taking**
 - 4) Workup for pulmonary embolism**
- Prior to the course, **26%** of students felt that HVC should be incorporated into the preclinical curriculum, which increased to **76%** after the course.
- By curricular element, students rated the clinical LOs delivered during lectures as the most impactful, with **90%** of students surveyed stating that the LOs were helpful to learning principles of HVC
- 76%** felt the foundational module was helpful, and **76%** of students felt the multiple choice quiz questions were helpful

HVC and Coronary Artery Disease

Avoid performing...

- ✓ Stress testing in asymptomatic pts
- ✓ Stress testing for routine follow up visits in asymptomatic pts
- ✓ Stress testing for pre-op assessment in low-risk pts or procedures
- ✓ PCI in stable asymptomatic pts w/o significant ischemia



American College of Cardiology
Five Things Physicians and Patients Should Question

Society for Cardiovascular Angiography and Interventions
SCAI
Five Things Physicians and Patients Should Question



Aims

We aimed to create a model to deliver HVC education that is replicable and scalable across the entire preclinical curriculum with three distinct components:

- 1) Introduction to HVC independent learning module**
- 2) Integrated HVC learning objectives during existing lectures**
- 3) HVC-focused multiple choice questions during weekly quizzes**

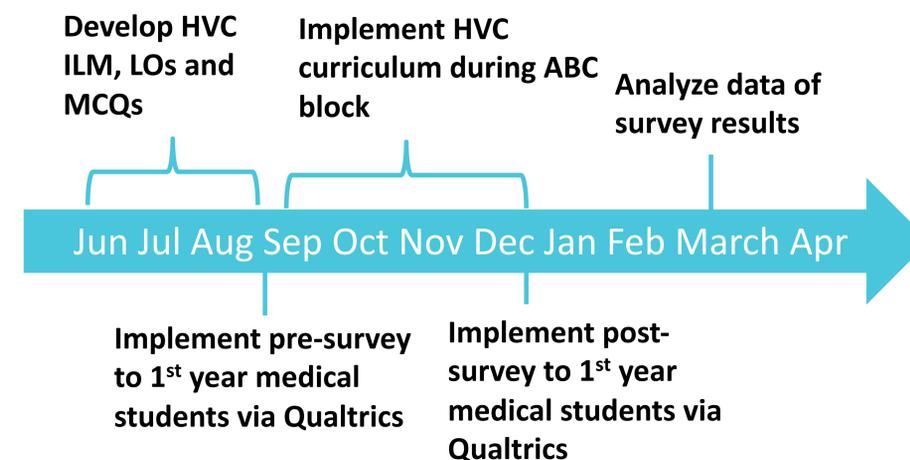
Aim 1: Determine the effect of a longitudinal, integrated preclinical curriculum on student attitudes towards high-value, cost-conscious care

Measure the effect of our pilot curriculum on first-year UCSF medical students using the Leap-Hunderfund survey, which has previously been validated a cohort of medical students across multiple institutions

Aim 2: Determine the feasibility and replicability of a longitudinal, integrated preclinical HVC curriculum

Identify barriers for replication in other clinical blocks through semi-structured interviews with key medical education stakeholders.

Timeline



Conclusions

- UCSF pre-clinical students desire more HVC education
- Curriculum can be delivered early and longitudinally, without impacting the pre-existing curriculum
- Ongoing work to expand this longitudinal curricular model into additional pre-clinical systems-based blocks
- Teaching HVC in pre-clinical medical education may impact student knowledge, attitudes, and interest with respect to HVC.
- Future research will aim to examine the impact of this pre-clinical curriculum on students’ clinical decision-making during clinical rotations.

References:

- Health Care Costs Almanac, 2018 <https://www.chcf.org/resource/california-health-care-almanac>
- Korenstein D, Kale M, Levinson W. Teaching Value in Academic Environments: Shifting the Ivory Tower. JAMA. 2013;310(16):1671–1672. doi:10.1001/jama.2013.280380