High Value Care In Practice and Education
Richard M. Wardrop III, MD, PhD
UNC Department of Pediatrics – 6/26/14
Formal Objectives

By the conclusion of session, faculty will be able to:

1. Describe the key elements of HVC
2. Describe the efforts to promote HVC in Medicine throughout the educational continuum
3. Understand milestone evaluation in medical education as related to HVC
4. Evaluate HVC delivery in their practice to their identified area of expertise (Hospital Practice, Ambulatory, Sub-specialty practice)
5. Articulate their strengths, weaknesses and action plan for improving their practice and instruction in HVC.
Disclosures / Disclaimers

• Disclosure
  » APDIM support
  » AHEC Traveling Fellowship
  » AHEC HVC Collaboration
  » AOE FD Series

• Disclaimer
  » Not an expert
  » Starting discussion
  » No political message
  » Sad for our system
  » Want to be part of solution
HVC Curriculum for Faculty, GME and UME (i.e. Why are we doing this?)

- We have **identified** learning needs within Medicine and Pediatrics in Faculty, GME, and students relating to HVC at UNC.

- We **hypothesize** that there are learning needs in other areas that are “universal” to care of patients and that HVC education is potentially a need in other GME programs and for other faculty.

- We **propose** that through effective faculty development that resident and student programs / curricular components could be created.

- The supposition: The system will benefit from HVC Education. It is a national priority for many large professional and educational organizations.
Local / Regional Needs Assessment

- UNC and AHEC Faculty Surveyed / Learners Surveyed
- The vast majority of faculty (37/43), all residents (10/10), and all students (7/7) do not feel confident in their ability to deliver or teach others to deliver HVC.
- Very few respondents (3/60) had received formal instruction in HVC as part of their training either in medical school, residency, or faculty development curricula.
- A pilot presentation in HVC was found to be useful by (16/17) students and residents.
- Additionally faculty respondents felt their teaching (35/43) of HVC and their practice (35/43) of HVC would improve with focused faculty development in this area.
High Value Care Principles

- High value care may be defined as a collective assessment of the benefit of a test, intervention, or procedure, relative to the cost of that test, intervention, or procedure.
  - A central principle of HVC is the relationship of medical outcomes achieved adjusted for cost.
  - Higher cost does not necessarily imply higher value.
  - Judgments about what constitutes HVC practice are fundamental to decision making in the majority of clinical settings.
  - Obviously high-cost interventions may provide good value if they are highly beneficial; conversely, low-cost interventions may have little or no value if they provide little benefit.
The Value Equation

Value = \frac{Net \ Outcomes}{Net \ Cost}
My own interest

- Started in Virginia with the Hospitalist director complaining to me that too many residents ordered PPI for patients
- Almost simultaneously, one of the prelim residents on pediatrics service was complaining about all of the CT scans being ordered to r/o appendicitis on children
- Both of these observations spawned scholarly projects looking at the phenomenology of overuse
My own interest

• PPI study showed that 70% of order in hospitalized inpatient were prescribed PPI with no indication. Estimated savings was possible ~$250,000-$300,000.
• EPIC order set change implemented
• Moving back to WakeMed – remained interested but had no firm nucleus to focus efforts.
• Kept an interest….
• When the AHEC fellowship was announced, I picked this as one area of focus.
HVC Background: Wasteful Spending

• ~$700 billion of U.S. healthcare spending is wasteful
  » ~30% of total spending
• Physicians responsible for 87% of wasteful spending
• No real disincentive to curb physician ordering practices
  » “Defensive medicine”
• High Value Care not emphasized in medical education
  » This is changing - Milestones
• It’s up to us!
Healthcare Waste

- Estimated $700 Billion of “Healthcare waste” annually
- $250-325B in “Unwarranted use”
- $75-100B in “Provider inefficiency and errors”
- $25-50B in “Lack of care coordination”
Ordering more services... 

- Two areas of greatest expenditures and most rapid growth: imaging and tests
HVC Background: US Spending as % of GDP

National Health Expenditures per Capita, 1960-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>NHE as a Share of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>5.2%</td>
</tr>
<tr>
<td>1970</td>
<td>7.2%</td>
</tr>
<tr>
<td>1980</td>
<td>9.2%</td>
</tr>
<tr>
<td>1990</td>
<td>12.5%</td>
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<tr>
<td>2000</td>
<td>13.8%</td>
</tr>
<tr>
<td>2001</td>
<td>14.5%</td>
</tr>
<tr>
<td>2002</td>
<td>15.4%</td>
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<tr>
<td>2003</td>
<td>15.9%</td>
</tr>
<tr>
<td>2004</td>
<td>16.0%</td>
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<td>2005</td>
<td>16.1%</td>
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<tr>
<td>2007</td>
<td>16.4%</td>
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<td>2008</td>
<td>16.8%</td>
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<tr>
<td>2009</td>
<td>17.9%</td>
</tr>
<tr>
<td>2010</td>
<td>17.9%</td>
</tr>
</tbody>
</table>

Notes: According to CMS, population is the U.S. Bureau of the Census resident-based population, less armed forces overseas.

Source: Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, at http://www.cms.hhs.gov/NationalHealthExpendData/ (see Historical; NHE summary including share of GDP, CY 1960-2010; file nhegdp10.zip).
HVC Background: US Spending

US spends two-and-a-half times the OECD average

Total health expenditure per capita, public and private, 2010 (or nearest year)

Source: OECD Health Data 2012.

1. In the Netherlands, it is not possible to clearly distinguish the public and private share related to investments.
2. Total expenditure excluding investments.

Information on data for Israel: http://dx.doi.org/10.1787/888932315602.
HVC Background: US Spending

Healthcare Spending per capita vs.
Average Life Expectancy Among OECD Countries

Average Life Expectancy at Birth (Years)

Total Expenditure on Health per capita in USD

USA

Linear Trend line
HVC Background: Infant Mortality
More Recently

EXECUTIVE SUMMARY

MIRROR, MIRROR ON THE WALL
How the Performance of the U.S. Health Care System Compares Internationally

Karen Davis, Kristof Stremikis, David Squires, and Cathy Schoen
June 2014

ABSTRACT
The United States health care system is the most expensive in the world, but comparative analyses consistently show the U.S. underperforms relative to other countries on most dimensions of performance. Among the 11 nations studied in this report—Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States—the U.S. ranks last, as it did in prior editions of Mirror, Mirror. The United Kingdom ranks first, followed closely by Switzerland. Since the data in this study were collected, the U.S. has made significant strides adopting health information technology and undertaking payment and delivery system reforms spurred by the Affordable Care Act. Continued implementation of the law could further encourage more affordable access and more efficient organization and delivery of health care, and allow investment in preventive and population health measures that could improve the performance of the U.S. health care system.
**EXHIBIT ES-1. OVERALL RANKING**

<table>
<thead>
<tr>
<th>COUNTRY RANKINGS</th>
<th>AUS</th>
<th>CAN</th>
<th>FRA</th>
<th>GER</th>
<th>NETH</th>
<th>NZ</th>
<th>NOR</th>
<th>SWE</th>
<th>SWIZ</th>
<th>UK</th>
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<tr>
<td><strong>OVERALL RANKING (2013)</strong></td>
<td>4</td>
<td>10</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>7</td>
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<td>Quality Care</td>
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<td>9</td>
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<td>7</td>
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<td>Patient-Centered Care</td>
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<td>6</td>
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<tr>
<td>Cost-Related Problem</td>
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<td>6</td>
<td>3</td>
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<td>Timeliness of Care</td>
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<td>4</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>9</td>
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<td>3</td>
<td>5</td>
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<td>Efficiency</td>
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<td>10</td>
<td>8</td>
<td>9</td>
<td>7</td>
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<td>4</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>11</td>
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<td>Equity</td>
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<td>4</td>
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<td>6</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>11</td>
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<td>Healthy Lives</td>
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<td>8</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Health Expenditures/Pop, 2011**</td>
<td>$3,800</td>
<td>$4,522</td>
<td>$4,118</td>
<td>$4,495</td>
<td>$5,099</td>
<td>$3,182</td>
<td>$5,669</td>
<td>$3,925</td>
<td>$5,643</td>
<td>$3,405</td>
<td>$8,508</td>
</tr>
</tbody>
</table>

Notes: * Includes ties. ** Expenditures shown in US PPP (purchasing power parity); Australian $ data are from 2010.
DIMINISHING RETURN


Houston…we have a problem…

- Unsustainably high costs and increasing spending
  - Overuse
  - Underuse
    - Disparities
  - Misuse
  - Inefficiency
  - Access to care

- With bad outcomes….
HVC Presentations…

• Focus on overuse and cost more than
  » Underuse
  » Misuse
  » Inefficiency
  » Downstream hazards
  » Real harms

• The message then is not as powerful
Overuse?

1. Use of a CTA to rule out PE in a patient with neg D-dimer
2. Use of abdominal CT in 8 yo with non-specific abdominal pain
3. Use of steroids in an infant with bronchiolitis
4. Use of MRI in a child with new onset complex seizures
5. Use of antibiotics in a child with a viral syndrome
6. Empirically treating for SBI in febrile neonate
How overuse may manifest

- **Overtesting** – when benefit of test is nil and likely outweighed by risks (*pap after hysterectomy for benign dz*)
- **Overdiagnosis** – diagnosing "pseudo-disease" (*screen detected prostate ca in elderly*)
- **Overtreatment** – treating pseudo-disease harm (*bisphosphonate for osteopenia*)
- **Preference misdiagnosis** – treating/testing a patient who if fully informed would decline the service (*regret after atypical femoral fx*)
Why does overuse matter?

1. Harm is **the only possible outcome**
   e.g. 20 year old woman has CT chest, 3 in 1000 chance will develop cancer as a result

2. We have an **ethical obligation** to avoid unnecessary harm

3. It’s pricey!

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More on why it matters.

Easy to ignore – harms may be downstream or counterintuitive (i.e. cancer from radiation for CT scans)

Labels – patients do worse when told they are sick

Lots to diagnose with good prognosis if left alone (i.e. 70% of men > 70 yrs have occult prostate cancer)

Underuse?

1. Holding Influenza vaccine for a child with suspected egg allergy
2. Holding antibiotics for simple AOM in an otherwise well 4 yo.
3. Modifying vaccine schedule based on parent concerns
4. Holding epinephrine in child with anaphylaxis
Misuse (a type of overuse)?

1. Prescribing TMP/SMX in a child allergic to sulfa
2. Using anti-histamines alone for anaphylaxis
3. Reversing coagulopathy with human blood products
4. Continuous pulse oximetry in an infant with bronchiolitis not on 02
What’s the Value of that Test or Intervention?

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Cost</th>
<th>Value</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>D-dimer in low risk patients HIV screening</td>
</tr>
<tr>
<td>High</td>
<td>High</td>
<td>High</td>
<td>HAART for HIV Warfarin in high risk A-fib</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Annual pap, average risk Annual lipid testing</td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>MRI for non-specific LBP Stress testing in low risk CP</td>
</tr>
</tbody>
</table>

- Immunizations
- IVIG for KD
- CXR during asthma exacerbation
- 4 day admit for constipation
ACP High Value Initiative

Table. Questions Physicians Should Ask Themselves Before Ordering Tests

Did the patient have this test previously?
   If so, what is the indication for repeating it? Is the result of a repeated test likely to be substantively different from the last result?
   If it was done recently elsewhere, can I get the result instead of repeating the test?
Will the test result change my care of the patient?
What are the probability and potential adverse consequences of a false-positive result?
Is the patient in potential danger over the short term if I do not perform this test?
Am I ordering the test primarily because the patient wants it or to reassure the patient?
   If so, have I discussed the above issues with the patient?
Are there other strategies to reassure the patient?
Assigning Value

• Pediatric Targets?
  » Daily labs
  » Monitoring
  » Early discharges
  » Stool pathogens test
  » Respiratory panel in select venues

• Think about your own practice
  • Think about things you may start doing and stop doing
You’ll never walk alone…

- Help is here!

KEEP CALM AND Practice HVC
Eureka: Resources to support HVC Practice and Education

- ACP / AAIM content
  - V1.0 and 2.0
- ABIM content – Choosing Wisely Campaign
- ACP support
- ACGME Milestones
ACP Took a Stand

Aims are simple of the Campaign

• Helping physicians to provide the best possible care to their patients.

• Simultaneously reducing unnecessary costs to the healthcare system.
Steps Toward High Value, Cost-Conscious Care

- **Step one:** Understand the benefits, harms, and relative costs of the interventions that you are considering
- **Step two:** Decrease or eliminate the use of interventions that provide no benefits and/or may be harmful
- **Step three:** Choose interventions and care settings that maximize benefits, minimize harms, and reduce costs (using comparative-effectiveness and cost-effectiveness data)
- **Step four:** Customize a care plan with the patient that incorporates their values and addresses their concerns
- **Step five:** Identify system level opportunities to improve outcomes, minimize harms, and reduce healthcare waste
HVC Application

- A challenge for clinicians is to distinguish between cost and value within their specialty.
  - an accepted first step in providing HVC is to decrease or eliminate care that provides no benefit or care that may even be harmful.
  - an accepted second step providing HVC is to offer / provide medical options that provide good value with medical benefits that are in line with their costs AND in line with patient values.
Robust ACP Content for Faculty

New from ACP: Free Online High Value Care Cases

Free MOC and CME Credit with easy online submission

HVC Cases provide:
- Five 30-60 minute topics include cases and questions based on real patients
- Online format for use anytime, anywhere
- Improved outcomes while balancing benefit with costs and harms
- Benefit for all members of the healthcare team

High Value Care (HVC):
Care that balances the clinical benefits with harms and costs with the goal of improving patient outcomes

The five topics covered:
- Avoid Unnecessary Testing
- Use Emergency and Hospital Level Care Judiciously
- Improve Outcomes with Health Promotion and Disease Prevention
- Prescribe Medications Safely and Cost-effectively
- Overcome Barriers to HVC
Robust ACP Content for Faculty, Residents and Students

Interactive curriculum helps future internists learn about high value care principles.

What is High Value Care?

ACP's High Value Care (HVC) initiative is a broad program that connects two important priorities for the College:

1. Helping physicians to provide the best possible care to their patients.

Why We Care

Approximately 30% of healthcare costs (more than $750 billion annually) are spent on wasted care.

This wasted care is potentially avoidable and would not negatively affect the quality of care if eliminated.

What We Offer

Healthcare Professionals:

ACP has developed clinical recommendations, physician resources, curriculum and public policy recommendations around this initiative.

Patients:
### 2011:

**Providing High-Value, Cost-Conscious Care: A Critical Seventh General Competency for Physicians**

Steven E. Weinberger, MD

<table>
<thead>
<tr>
<th>Critical Deficiencies</th>
<th>Lacks awareness of external factors (e.g. socioeconomic, cultural, literacy, insurance status) that impact the cost of health care and the role that external stakeholders (e.g. providers, suppliers, financiers, purchasers) have on the cost of care</th>
<th>Recognizes that external factors influence a patient’s utilization of health care and may act as barriers to cost-effective care</th>
<th>Consistently works to address patient specific barriers to cost-effective care</th>
<th>Teaches patients and healthcare team members to recognize and address common barriers to cost-effective care and appropriate utilization of resources</th>
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<tbody>
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<td>Ignores cost issues in the provision of care</td>
<td>Does not consider limited health care resources when ordering diagnostic or therapeutic interventions</td>
<td>Minimizes unnecessary diagnostic and therapeutic tests</td>
<td>Incorporates cost-awareness principles into standard clinical judgments and decision-making, including screening tests</td>
<td>Actively participates in initiatives and care delivery models designed to overcome or mitigate barriers to cost-effective high quality care</td>
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### 2013:

10. Identifies forces that impact the cost of health care, and advocates for, and practices cost-effective care. (SBP3)

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Comments:
Choosing Wisely Campaign from ABIM

- 2009 Initiative by National Physicians Alliance developed “Top 5 lists”
- In 2012 – this was rebranded by the ABIM Foundation as the Choosing Wisely Campaign.
- Vision was for medical societies to come up with lists of 5 things that patients and physicians should question
- Now 40 specialty specific lists exist

http://www.choosingwisely.org/
Choosing Wisely – Pediatrics

Antibiotics should not be used for apparent viral respiratory illnesses (sinusitis, pharyngitis, bronchitis).

Although several antibiotics prescribing rules for children have been set, they still remain amazingly high. Necessary antibiotic use for viral respiratory illnesses can lead to antibiotic resistance and contribute to higher health care costs and the risks of adverse events.

Cough and cold medicines should not be prescribed or recommended for respiratory illnesses in children under four years of age.

Research has shown that these products offer little benefit to young children and can have serious adverse side effects. Many cough and cold products for children have more than one ingredient, increasing the chance of undesirable reactions if combined with another product.

Computed tomography (CT) scans are not necessary in the immediate evaluation of minor head injuries; clinical observation/Pediatric Emergency Care Applied Research Network (PECARN) criteria should be used to determine whether imaging is indicated.

Minor head injuries occur commonly in children and adolescents. Approximately 60% of children who visit hospital emergency departments with a head injury are given a CT scan, many of which are unnecessary. Unnecessary exposure to radiation poses considerable danger to children including increasing the lifetime risk of cancer because a child’s bone structure is more sensitive to ionizing radiation. CT scans impose on-site costs to the health care system. Clinical observation prior to CT decision-making for children with minor head injuries is an effective approach.

Neuroimaging (CT, MRI) is not necessary in a child with simple febrile seizure.

CT scanning is associated with radiation exposure that may not be desirable for future cancer risk. MRI also is associated with risks from required sedation and high cost. The literature does not support the use of skull films in the evaluation of a child with a simple fever. Children evaluating fevers or young children after a simple fever seizure should direct their attention toward identifying the cause of the child’s fever.

Computed tomography (CT) scans are not necessary in the routine evaluation of abdominal pain.

Utilization of CT imaging in the emergency department evaluation of children with abdominal pain is increasing. The increased utilization rate for cancer due to recent widespread exposure is a special concern given the small variability of children’s organs. There also is the potential for radiation overdose with inappropriate CT protocols.

Don’t order chest radiographs in children with uncomplicated asthma or bronchiolitis.

National guidelines articulate a reliance on physical examination and patient history for diagnosis of asthma and bronchiolitis in the pediatric population. Multiple studies have established limited clinical utility of chest radiographs for patients with asthma or bronchiolitis. Omission of the use of chest radiography will reduce costs, but not compromise diagnostic accuracy and care.

Don’t routinely use bronchodilators in children with bronchiolitis.

Published guidelines do not advocate the routine use of bronchodilators in patients with bronchiolitis. Comprehensive reviews of the literature have demonstrated that the use of bronchodilators in children admitted to the hospital with bronchiolitis has no effect on any important outcomes. There is limited demonstration of clear impact of bronchodilator therapy upon the course of disease. Additionally, providers should consider the potential impact of adverse events upon the patient.

Don’t use systemic corticosteroids in children under 2 years of age with an uncomplicated lower respiratory tract infection.

Published guidelines recommend that corticosteroid medications not be used routinely in the management of bronchiolitis. Furthermore, additional studies in patients with other viral lower respiratory tract infections have failed to demonstrate any benefits.

Don’t treat gastroesophageal reflux in infants routinely with acid suppression therapy.

Antireflux therapy has been demonstrated to have no effect in reducing the symptoms of gastroesophageal reflux disease (GERD) in children. Concerns regarding the use of proton-pump inhibitor therapy in infants include an inability to definitively diagnose pediatric patients according to the established criteria of GERD, lack of documented efficacy of acid suppression therapy in infants and the potential adverse effects associated with acid suppression therapy.
Choosing Wisely

Don’t routinely avoid influenza vaccination in egg-allergic patients.

Of the vaccines that may contain egg protein (measles, mumps, rabies, influenza and yellow fever), measles, mumps and rabies vaccines have at most negligible egg protein; consequently no special precautions need to be followed in egg-allergic patients for these vaccines. Studies in egg-allergic patients receiving egg-based inactivated influenza vaccine have not reported reactions; consequently egg-allergic patients should be given either egg-free influenza vaccine or should receive egg-based influenza vaccine with a 30-minute post-vaccine observation period. Egg-allergic patients receiving the yellow fever vaccine should be skin tested with the vaccine and receive the vaccine with a 30-minute observation period if the skin test is negative. If positive, the vaccine may be given in graded doses with appropriate medical observation.

Egg protein is present in influenza and yellow fever vaccines and in theory could cause reactions in egg-allergic patients. However, in 27 published studies collectively 4,172 patients with egg allergy received 4,729 doses of egg-based inactivated influenza vaccine (IIV) with no cases of anaphylaxis, including 513 with severe egg allergy who uneventfully received 597 doses. The CDC’s Advisory Committee on Immunization Practices recommends that egg-allergic persons receive IIV as a single dose without prior vaccine skin testing and be observed for 30 minutes afterwards for any possible allergic reaction. If the reaction to the ingestion of eggs was hives only, the vaccine can be administered in a primary care setting, whereas if the reaction to the ingestion of eggs was more severe, the vaccine should be administered in an allergist/immunologist’s office. Two new IIVs not grown in eggs have been approved for patients 18 years and older: Flucelvax, prepared from virus propagated in cell culture, and Flublok, recombinant hemagglutinin proteins produced in an insect cell line. For egg-allergic patients 18 years of age and older, either egg-based IIV can be used with the precautions above or egg-free IIV can be used.

Measles and mumps vaccines (and Purified Chick Embryo Cell [PCEC] rabies vaccine) are grown in chick embryo fibroblast cultures and contain negligible or no egg protein. Thus, MMR and PCEC rabies vaccine can be administered to egg-allergic recipients in the usual manner.

Per the Yellow Fever vaccine package insert, egg-allergic recipients should be skin tested with the vaccine prior to administration. If negative, the vaccine can be given in the usual manner, but the patient should be observed for 30 minutes afterward. If the vaccine skin test is positive, the vaccine can be given in graded doses under appropriate medical observation.
Choosing Wisely

Don’t overuse non-beta lactam antibiotics in patients with a history of penicillin allergy, without an appropriate evaluation.

While about 10 percent of the population reports a history of penicillin allergy, studies show that 90 percent or more of these patients are not allergic to penicillins and are able to take these antibiotics safely. The main reason for this observation is that penicillin allergy is often misdiagnosed and when present wanes over time in most (but not all) individuals. Patients labeled penicillin-allergic are more likely to be treated with alternative antibiotics (such as vancomycin and quinolones), have higher medical costs, experience longer hospital stays, and are more likely to develop complications such as infections with vancomycin-resistant enterococcus (VRE) and Clostridium difficile.

Evaluation for specific IgE to penicillin can be carried out by skin testing. Ideally, penicillin skin testing should be performed with both major and minor determinants. The negative predictive value of penicillin skin testing for immediate reactions approaches 100 percent, whereas the positive predictive value is between 40 and 100 percent. The usefulness of in vitro tests for penicillin-specific IgE is limited by their uncertain predictive value. They are not suitable substitutes for penicillin skin testing.

By identifying the overwhelming majority of individuals who can safely receive penicillin and penicillin-like drugs, we can improve the appropriateness of antibiotic therapy and clinical care outcomes.
Don’t do computed tomography (CT) for the evaluation of suspected appendicitis in children until after ultrasound has been considered as an option.

Although CT is accurate in the evaluation of suspected appendicitis in the pediatric population, ultrasound is nearly as good in experienced hands. Since ultrasound will reduce radiation exposure, ultrasound is the preferred initial consideration for imaging examination in children. If the results of the ultrasound exam are equivocal, it may be followed by CT. This approach is cost-effective, reduces potential radiation risks and has excellent accuracy, with reported sensitivity and specificity of 94 percent.
Choosing Wisely – applicable all areas?

Don’t transfuse more than the minimum number of red blood cell (RBC) units necessary to relieve symptoms of anemia or to return a patient to a safe hemoglobin range (7 to 8 g/dL in stable, non-cardiac in-patients).

Transfusion of the smallest effective dose of RBCs is recommended because liberal transfusion strategies do not improve outcomes when compared to restrictive strategies. Unnecessary transfusion generates costs and exposes patients to potential adverse effects without any likelihood of benefit. Clinicians are urged to avoid the routine administration of 2 units of RBCs if 1 unit is sufficient and to use appropriate weight-based dosing of RBCs in children.

Don’t test for thrombophilia in adult patients with venous thromboembolism (VTE) occurring in the setting of major transient risk factors (surgery, trauma or prolonged immobility).

Thrombophilia testing is costly and can result in harm to patients if the duration of anticoagulation is inappropriately prolonged or if patients are incorrectly labeled as thrombophilic. Thrombophilia testing does not change the management of VTEs occurring in the setting of major transient VTE risk factors. When VTE occurs in the setting of pregnancy or hormonal therapy, or when there is a strong family history plus a major transient risk factor, the role of thrombophilia testing is complex and patients and clinicians are advised to seek guidance from an expert in VTE.

Don’t use inferior vena cava (IVC) filters routinely in patients with acute VTE.

IVC filters are costly, can cause harm and do not have a strong evidentiary basis. The main indication for IVC filters is patients with acute VTE and a contraindication to anticoagulation such as active bleeding or a high risk of anticoagulant-associated bleeding. Lesser indications that may be reasonable in some cases include patients experiencing pulmonary embolism (PE) despite appropriate, therapeutic anticoagulation, or patients with massive PE and poor cardiopulmonary reserve. Retrievable filters are recommended over permanent filters with removal of the filter when the risk for PE has resolved and/or when anticoagulation can be safely resumed.
Choosing Wisely: ATS and ACCP

For patients recently discharged on supplemental home oxygen following hospitalization for an acute illness, don’t renew the prescription without assessing the patient for ongoing hypoxemia.

Hypoxemia often resolves after recovery from an acute illness, and continued prescription of supplemental oxygen therapy incurs unnecessary cost and resource use. At the time that supplemental oxygen is initially prescribed, a plan should be established to re-assess the patient no later than 90 days after discharge. Medicare and evidence-based criteria should be followed to determine whether the patient meets criteria for supplemental oxygen.

Don’t perform chest computed tomography (CT angiography) to evaluate for possible pulmonary embolism in patients with a low clinical probability and negative results of a highly sensitive D-dimer assay.

Clinical practice guidelines for pulmonary embolism indicate that the cost and potential harms of CT angiography (including radiation exposure and the possibility of detecting and treating clinically insignificant pulmonary emboli with anticoagulation) outweigh the benefits for patients with a low pre-test probability of pulmonary embolism. In patients with a low clinical prediction score (e.g., Wells or Geneva score) followed by a negative D-dimer measured with a high sensitivity test (e.g., ELISA), pulmonary embolism is effectively excluded and no further imaging is indicated for pulmonary embolism evaluation.
Choosing Wisely — The Politics and Economics of Labeling Low-Value Services

Nancy E. Moster, M.D., M.P.H., Carrie H. Cola, Ph.D., Thomas D. Sequist, M.D., M.P.H., and Meredith B. Rosenthal, Ph.D.

With its Choosing Wisely campaign, the American Board of Internal Medicine (ABIM) Foundation boldly invited professional societies to own their role as “stewards of finite health care resources.” Question to “spark discussion about the need — or lack thereof — for many frequently ordered tests and treatments.” In 2013, additional societies and consumer groups joined the effort; there are now more than 40 specialty-specific lists and more than 10 “consumer partners.”

The message, the messenger, and the method are key features of this stewardship initiative. The creators of the Choosing Wisely campaign have carefully crafted a recommendation for “conversing” emphasizing individual patients and their societies, not payers, develop the lists. As testimony to its careful design, the initiative does not appear to be generating concern about tampering or undermining the patient-physician relationship, as past efforts to reduce health care overuse have tended to do.

Participation in the program and the choice of items listed convey much about the societies and their members’ inclination to embrace the stewardship challenge. On the surface, the creation of low-value service lists suggests that physicians are willing to make recommendations to improve health care value even against their own financial interests. The services included on the lists, however, vary widely in terms of their potential impact...
Choosing Wisely Campaign from ABIM

<table>
<thead>
<tr>
<th>Organization</th>
<th>Distribution of Services</th>
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<tbody>
<tr>
<td>American College of Radiology</td>
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<td>American College of Physicians</td>
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<td>Society of Nuclear Medicine and Molecular Imaging</td>
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<td>American Academy of Otolaryngology—Head and Neck Surgery</td>
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<td>American Academy of Pediatrics</td>
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<td>American Society of Clinical Oncology</td>
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<td>American Urological Association</td>
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<td>Society of Thoracic Surgeons</td>
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<td>American Academy of Family Physicians</td>
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<td>Society for Vascular Medicine</td>
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<td>American College of Rheumatology</td>
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<td>American Academy of Allergy, Asthma, and Immunology</td>
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<td>Society of Hospital Medicine (pediatric)</td>
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<td>Society of Cardiovascular Computed Tomography</td>
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<td>Society of Hospital Medicine (adult)</td>
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<td>American Academy of Hospice and Palliative Medicine</td>
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<td>American Society for Clinical Pathology</td>
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<td>American Geriatrics Society</td>
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UME

• ACP Content
• Transitions course for rising 3rd years
• Clerkships
• Health of Populations Thread at UNC
• TEC Cases at UNC

GME

• Do No Harm Campaign (Colorado)
• Medicine Pre-clinic Conferences
• System Wide Curriculum (DUMC)
• Noon-conferences focused on HVC
• Noon Conferences with HVC content capsules
The Do No Harm Project

www.medschool.ucdenver.edu/gim/donoharmproject

“To minimize the risk of harm, we must look for it.” — Fisher & Welch. JAMA. 281, no. 5 (1999): 446.
Injecting HVC into what we teach every day

• What supporting structures can you use
  » EBM / Guidelines
  » Choosing wisely lists
  » Modified ACP Content to your area
  » Institutional needs

• Where to insert this
  » Existing venues
  » New venues
  » Existing Content
THIS IS Jeopardy

Choosing Wisely®

An initiative of the ABIM Foundation

hvc High Value Care
Getting Wasted
What's it cost @ UNC?
Shot-Gunning
True or False
Pretty Pictures
True or False - Part II
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Brining Value to the Work-up and Diagnosis Primary Immunodeficiency in Adolescents and Adults

Richard M Wardrop III, MD, PhD
Departments of Internal Medicine and Pediatrics
Testing Humoral Immunity

- Response to immunization (pre and post)
  - Titers to tetanus – $30-59
  - Hib (conjugate vaccine) – $30-69
  - Pneumovax (polysaccharide vaccine) – 14 serotype $194-380

- Antibody levels
  - IgG, IgA, IgM, IgE – $50-59
  - IgG subclasses (age greater than 2) ($117-230)
  - Specific antibody titers

- B cells
  - Enumeration via flow
  - *In vitro* response to mitogens and anti-CD40

HIV – $66-129

Humoral Immunity Panel - $382
How does one rationally proceed?

Suspected primary immunodeficiency

- Sinopulmonary bacterial infections only?
  - Yes
  - Proceed to referral/therapy
  - No
  - Are there:
    - Neisserial infections?
    - Abscesses and/or fungi?
    - c. Atypical mycobacteria?
      - ii. Disseminated infection?
      - iii. Opportunistic infection?
  - a. SCID a possibility?
    - Yes
    - Proceed immediately to referral
    - No
    - b. Is there a phagocyte defect?
      - Yes
      - Proceed to referral/therapy
      - No
      - Is there a cellular or combined defect?
        - Yes
        - Undefined immunodeficiency or other problem
        - No
        - Proceed to referral/therapy

Anaphylaxis and Angioedema

Richard M. Wardrop III, MD, PhD
Medicine and Pediatrics
Noon Conference 6/24/14
Anaphylaxis

• An acute systemic allergic reaction
• True anaphylaxis is the result of a re-exposure to an antigen that elicits an IgE mediated response
• Usually caused by a common environmental substance that is not intrinsically harmful
• Often caused by medications, foods, and insect stings
• It is a systemic manifestation of a Type I hypersensitivity (immediate)
Diagnosis of Anaphylaxis – largely clinical

- **Histamine level ($219-430)**
  - Plasma histamine levels become elevated 5-10 minutes after activation and return to normal in 30-60 minutes
  - Serum samples may not be reliable due to basophil activation
  - 24 hour urine for N-methyl-histamine ($178-349)

- **Tryptase ($149-290)**
  - Peak at 1 hour in serum and remain elevated for 6 hours
    - Alpha – mastocytosis
    - Beta – anaphylaxis

- Serum IgE testing can be carried out
- Skin testing should be delayed
- The diagnosis is largely clinical
Choosing Wisely

Don’t perform unproven diagnostic tests, such as immunoglobulin G (IgG) testing or an indiscriminate battery of immunoglobulin E (IgE) tests, in the evaluation of allergy.

Appropriate diagnosis and treatment of allergies requires specific IgE testing (either skin or blood tests) based on the patient’s clinical history. The use of other tests or methods to diagnose allergies is unproven and can lead to inappropriate diagnosis and treatment. Appropriate diagnosis and treatment is both cost effective and essential for optimal patient care.

Don’t perform food IgE testing without a history consistent with potential IgE-mediated food allergy.

False or clinically irrelevant positive allergy tests for foods are frequent. Indiscriminate screening results in inappropriate avoidance of foods and wastes healthcare resources. IgE testing for specific foods must be driven by a history of signs or symptoms consistent with an IgE-mediated reaction after eating a particular food. Ordering IgE testing in individuals who do not have a history consistent with or suggestive for food allergy based on history frequently reveals positive tests that are unlikely to be clinically relevant. Testing, when done, should be limited to suspected foods.

The diagnostic utility of IgE testing for specific foods is optimal when a history compatible with or suggestive for the diagnosis of food allergy is present. In the absence of a compatible or suggestive history, the pre-test probability for a diagnosis of food allergy is low and a positive skin or in vitro IgE test does not establish a diagnosis of food allergy. Skin testing or serum testing for specific-IgE to food antigens has excellent sensitivity and high negative predictive value, but has low specificity and low positive predictive value.

Considering that 50 to 90 percent of presumed cases of food allergy do not reflect IgE-mediated (allergic) pathogenesis and may instead reflect food intolerance or symptoms not causally associated with food consumption, ordering panels of food tests leads to many incorrectly identified food allergies and inappropriate recommendations to avoid foods that are positive on testing.
Reflect

- Think of areas where you may introduce this into your teaching moving forwards
Closing

• The time is right to move forward as medical educators!
• It is important for faculty to understand these concepts as we need to instruct and rate our learners
• Faculty development then become a central need if we are to teach this to students and residents
• Be a champions locally and regionally and enlist admin / GME leaders
• Locally UNC SOM Academy of Educators offerings Summer / Fall 2014 to be teleconferenced
• Contact: richard_wardrop@med.unc.edu

Thanks for your time
Post-tests
AHEC High Value Care Collaboration: Promoting a Curriculum Across the Education Continuum
Richard M. Wardrop III, MD, PhD
AHEC Faculty Day
Project Overview

• We have developed a working group to promote HVC education and practice using regional relationships through the North Carolina AHEC system as well as:
  » NC ACP
  » APDIM
  » SHM

• Has included many of the AHEC sites in NC and academic centers
HVC Curriculum for AHEC Faculty, GME and UME (i.e. Why are we doing this?)

• We have **identified** learning needs within Medicine and Pediatrics in Faculty, GME, and students relating to HVC at UNC.

• We **hypothesize** that there are learning needs in other areas that are “universal” to care of patients and that HVC education is potentially a need in other GME programs and for other faculty.

• We **propose** that through effective faculty development that resident and student programs / curricular components could be created.

• **AHECs** are the perfect vehicle for doing this.
AHEC HVC Participants (so far)

- Southeastern AHEC and New Hannover Regional
  » Dr. Charin Hanlon – PD, Internal Medicine
  » Dr. Joseph Pino – President and CEO, DIO
  » Select other faculty from GME programs
- Greensboro AHEC and Moses Cone Hospital
  » Dr. Larry Klima – PD, Internal Medicine
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- Mountain AHEC
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  » Dr. Animita Saha – Clinic Director
- ECU
  » Dr. Suzanne Kraemer - PD
- Duke University
  » Dr. Suzanne Woods – Med Peds PD
- Wake Forest
  » Dr. Peter Lichstein – Governor-elect NC Chapter ACP
Local / Regional Needs Assessment

- UNC and AHEC Faculty Surveyed / Learners Surveyed
- The vast majority of faculty (37/43), all residents (10/10), and all students (7/7) do not feel confident in their ability to deliver or teach others to deliver HVC.
- Very few respondents (3/60) had received formal instruction in HVC as part of their training either in medical school, residency, or faculty development curricula.
- A pilot presentation in HVC was found to be useful by (16/17) students and residents.
- Additionally faculty respondents felt their teaching (35/43) of HVC and their practice (35/43) of HVC would improve with focused faculty development in this area.
UNC HVC Participants

» Dr. Richard M. Wardrop III – PD, Med-Peds Program and Moderator
» Dr. Lee Berkowitz – PD, Internal Medicine Program and Vice-Chair for Education
» Dr. Paul Chelminski – APD, Internal Medicine and Outpatient Resident Clinic Director
» Dr. Deb Bynum – rising PD, Internal Medicine, Past-PD Geriatrics
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» Dr. Mike Gilchrist – Medicine Faculty
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» Dr. Thomas Miller – Medicine Faculty
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» Dr. Wayne Price – Neonatology
» Dr. Charles Adrian Austin – Fellow Geriatrics
» Drs. Jon Heath, Marc Piper, David McNeely, Lee Sigmon, Joseph Bumgarner, Bred Barnes, Nick Potisek, and Maggie Hall – Med-Peds, Medicine, and Peds Chief Residents
» Drs. Josh Berkowitz, Katie Jacobson David Peritz, and Eric Walford – Med-Peds and Medicine Residents
» Kevin Kohler – MS1
AHEC HVC Project Goals (working)

• **Recruit** key faculty stakeholders from AHEC sites to encourage faculty development and curricular development exercises.

• **Design** the content backbone of an HVC curriculum for faculty, practitioners, residents and students at each site.

• **Disseminate** the HVC curriculum at sites where CME and instruction of residents is occurring.

• **Evaluate** the effectiveness of the curriculum from the standpoint of faculty growth and development, resident development, and change within the system of care.
Proposed AHEC HVC Curriculum Plan

Select Core Faculty
Select core Residents

Session 1

Session 2

Session 3

HVC Champions

All interested *Faculty at Local Events (AOE)

Medical Students

Residents

Phase 1
(teach the teachers)
(develop the content)

Phase 2
(teach the teachers)
(develop the faculty)

Phase 3
(teach the learners)
(Measure success)
Session 1 March 7th 2014: Overview

- Overall Goals and Objectives
- Session objectives / deliverables
- High Value Care Background

- Proliferation of HVC Resources
- Progress at UNC
- Shared progress at other sites
- Small Group Huddles
- Commit to action
- Closing
Session 1: Video Conference
Highlights

• Great turnout
  » Duke, Wake Forest, UNC
  » CMC / Charlotte AHEC
  » Moses Cone / Greensboro AHEC
  » WakeMed / Wake AHEC
  » New Hannover Regional / SEAHEC

• Included educators as well as administrators
  • Residents
  • Students
  • Learned about other center’s activities
  • Ranged form complete system wide curricula to just getting started
Recurring Themes and Challenges Across Sites

• Lack of transparency of cost of care at each site
• Defining functionality within local EMR to view cost within system to change behaviors
• Need for faculty development to have faculty serve as role models
• Effective engagement and support of administrators
• Need for effective measurement tools to assure no harm and positive effect

• Use of existing curricular component (ABIM choosing wisely topics and ACP V1 and 2, modules) effectively in different venues
• Need for development of local cases for instruction
• Need ways to translate HVC curriculum to quality projects that can serve as scholarly projects for students, residents, and fellows
Planned Sessions 2014-2015 with AOE

• Introduction to High Value Care for Faculty, Residents and Students
• Incorporating HVC into current teaching venues and settings

• Engagement of Medical Leadership and other caregivers in HVC
• Generating scholarship and measuring the effects of HVC
Pretest - 1

Please select your specialty:

1. General Pediatrics or Medicine – Ambulatory
2. General Pediatrics or Medicine – Hospital
3. Subspecialty of Pediatrics – Ambulatory
4. Subspecialty of Pediatrics – Hospital
5. 1 and 2
6. 3 and 4
7. Other
Pretest - 2

I have had training in High Value Care:

1. True 1-2 hours
2. True 3-5 hours
3. True >5 hours
4. What are you talking about?
5. False
Pretest – 3

How much responsibility do you feel physicians have to contain health care costs?

1. None
2. A little bit
3. Some
4. A large amount
Pretest - 4

What is the percentage of the US GDP that is spent on Healthcare is closest to:

1. 5%
2. 10%
3. 12%
4. 20%
Pretest - 5

The following organizations have robust materials on promoting High Value Care in Practice or Education:

1. American College of Physicians
2. Academic Alliance for Internal Medicine
3. American Board of Internal Medicine
4. Accreditation Council for Graduate Medical Education
5. All of the above
Pretest - 6

What percentage of the estimated $700B in healthcare waste is thought to be attributable to physicians’ practice of unwarranted use of resources:

1. 10%
2. 20%
3. 30%
4. 40%
5. 60%
Pretest - 7

Because of the large proportion of resources the US puts towards health care, US citizens have the highest life-expectancy and lowest infant mortality when adjusted for cost.

1. True
2. False
Areas of Planned / Proposed HVC Expansion at UNC

- Presenting idea to system admin to get buy in
- Across GME – presented to UNC GMEC
- Offer to all UNC SOM Faculty through AOE
- Peds Fellows – part of CME curriculum
- Offer to MS1-4 via Population Health Thread, CSI, CSD, PCC, clerkships and Capstone Course.
- Expand “content capsules” into conferences, teaching sessions, ward rounds etc.
- UNC groups (ambulatory, inpatient, specialty)
NC HVC Toolbox

- A repository for shared curricular material or other content allowing for promotion of HVC

- https://www.dropbox.com/sh/7xk8ee9eadhayza/kN5mz49QdX
Summary to date – plans going forward

- Identified interested faculty and service lines, projects
- Identify champions: faculty, resident
- Development meaningful measurement tools
- Develop content capsules for tool box
  - [https://www.dropbox.com/sh/7xk8ee9eadhayza/kN5mz49QdX](https://www.dropbox.com/sh/7xk8ee9eadhayza/kN5mz49QdX)
  - Cases for talks, QI, Research projects
  - Small talks pre-clinic, AM report etc.
  - Tweets or other social media
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Closing

• The time is right to move forward as medical educators!
• Find champions locally and regionally and enlist admin / GME leaders
• Future Sessions June / July 2014
• Locally UNC SOM Academy of Educators offerings Summer / Fall 2014 to be teleconferenced
• Contact: richard_wardrop@med.unc.edu

Thanks for your time
Posttest – 1

How much responsibility do you feel physicians have to contain health care costs?

1. None
2. A little bit
3. Some
4. A large amount
Posttest - 2

What is the percentage of the US GDP that is spent on Healthcare is closest to:

1. 5%
2. 10%
3. 12%
4. 20%
Posttest - 3

The following organizations have robust materials on promoting High Value Care in Practice or Education:

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What percentage of the estimated $700B in healthcare waste is thought to be attributable to physicians’ practice of **unwarranted use** of resources:

1. 10%
2. 20%
3. 30%
4. 40%
5. 60%
Because f the large proportion of resources the US puts towards health care, US citizens have the highest life-expectancy and lowest infant mortality when adjusted for cost.

1. True
2. False