Choosing Wisely Clinical Decision Support

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75% of decision support interventions succeed when the information is provided to clinicians automatically, whereas none succeed when clinicians are required to seek out the advice.

<table>
<thead>
<tr>
<th>Predictors of Success</th>
<th>Adjusted OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic provision of decision support as part of workflow</td>
<td>112</td>
</tr>
<tr>
<td>Provision of decision support at the time and location of decision making</td>
<td>15</td>
</tr>
<tr>
<td>Provision of recommendation rather than just an assessment</td>
<td>7</td>
</tr>
<tr>
<td>Computer-based generation of decision support</td>
<td>6</td>
</tr>
</tbody>
</table>

## Medical Research Funding

- NIH research: $32 billion in 2013
- US medical research: $95 billion/year
- Global medical research: >$140 billion/year
- $1.1 billion comparative effectiveness research
- Choosing Wisely

## Output

- 20,000 biomedical journals
- 6,000 articles per day
- 1 article every 26 seconds

## Point of Care

- Brain
  - 200 MB

**CDS**
Opportunity to Reduce Costs While Providing Excellent Quality of Care

• Overtreatment
  ○ “subjecting patients to care that, according to sound science and the patients’ own preferences, cannot possibly help them”
  ○ $248 billion per year
  ○ 10% of health care expense

• Berwick DM, et al. JAMA 2012;307:1513-6
• Choosing Wisely
• 120 tests that do not benefit patients
• 150 more over next 9 months
• 35 subspecialty societies
• Representing > 500,000 physicians
• 79% of AMA physicians agreed that they should adhere to guidelines that say do not perform marginally beneficial care

• Benefits of reducing inappropriate utilization*
  ○ Up to 19-times greater false-positive rate than true-positive rate
  ○ No improvement in patient worry, anxiety, symptoms
• Elimination of 5 of 90 “Choosing Wisely”-type tests would reduce costs by $5 billion per year**

** Arch Intern Med. 2011;171(20):1858-1859
• “Don’t do” imaging studies for chronic isolated headache

• Potential harms
  - Kaiser Permanente Woodland Hills
  - 1990, 100,800 adults
  - 15 to 27 month follow-up period
  - No CT scans for chronic isolated headache yielded new and important information
  - CT brain radiation exposure may cause 4,000 additional cases of cancer per year in US
    - Model based on National Research Council’s “Biological Effects of Ionizing Radiation”
  - False positives, one led to unnecessary brain biopsy.
    » Arch Intern Med. 2009 Dec 14;169(22):2071-7
Cedars-Sinai Health System

- Alerts > 100 per day

<table>
<thead>
<tr>
<th>alert firings – last 7 days:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>recommendation</strong></td>
</tr>
<tr>
<td>BENZODIAZEPINE FOR PATIENTS &gt; 65 YEARS OLD</td>
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<tr>
<td>NSAIDS FOR PATIENTS WITH HYPERTENSION</td>
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<tr>
<td>A1C&lt;7.5% IN DIABETIC PATIENTS &gt; 65</td>
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<tr>
<td>VITAMIN D DEFICIENCY TESTING</td>
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<tr>
<td>SPIROMETRY IN ASTHMA</td>
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<tr>
<td>TESTOSTERONE FOR ED</td>
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<tr>
<td>IMAGING FOR LOW BACK PAIN</td>
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<tr>
<td>LYME DISEASE</td>
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<tr>
<td>HPV DNA</td>
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<tr>
<td>PAP SMEAR AGES 30-65</td>
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<tr>
<td>CERVICAL CANCER SCREENING WOMEN OVER 65</td>
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<td>URINARY CATHETER</td>
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<td>CHEST X RAY PREOP OR ADMISSION</td>
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<td>RENAL ARTERY US</td>
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<td>ANTIBIOTICS FOR SINUSITIS</td>
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<tr>
<td>BRAIN IMAGING FOR UNCOMPPLICATED HEADACHE</td>
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<tr>
<td>CAROTID ARTERY STENOSIS SCREENING</td>
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</table>
Benzodiazepines in the Elderly

- Increased risk of falls (57% for benzos, 97% for Valium)
- Increased risk of MVAs
- Increased risk of hip fractures

Don’t use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.

Large scale studies consistently show that the risk of motor vehicle accidents, falls and hip fractures leading to hospitalization and death can more than double in older adults taking benzodiazepines and other sedative-hypnotics. Older patients, their caregivers and their providers should recognize these potential harms when considering treatment strategies for insomnia, agitation or delirium. Use of benzodiazepines should be reserved for alcohol withdrawal symptoms/delirium tremens or severe generalized anxiety disorder unresponsive to other therapies.

## Impact of Blind Spot Monitor
Prescriptions of Benzodiazepines to Elderly Patients

<table>
<thead>
<tr>
<th>Change in number of prescriptions from baseline with active alert*</th>
<th>Age &gt;=65 years</th>
<th>Age &lt;65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot MD offices</td>
<td>-20.9%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Control MD offices</td>
<td>10.6%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Difference</td>
<td>-31.5%</td>
<td>+0.01%</td>
</tr>
</tbody>
</table>

*Comparison periods 7/13/13 to 8/6/13 and 8/7/13 to 8/31/13
Over-riding the Blind Spot Monitor

Benzodiazepine Over-rides By Physician
Patients >65 Years – Early Data

- Physician 1: 19
- Physician 2: 13
- Physician 3: 7
- Physician 4: 5
- Physician 5: 4
- Physician 6: 2
- Physicians 7, 8, and 9: 0
Potential Impact

• Reduction in benzodiazepine use 31.5%

• Projected reductions over 1 year
  o Fall related injuries 22
  o ED visits 6
  o Hospitalizations 3
  o Deaths from falls 2

Woolcott et al. JAGS 2009,
CDC. MMWR Weekly 2008,
Schiller et al., Adv Data No. 392 (CDC) 2007,
Pariente et al, Drugs Aging 2008
optimizing interventions

passive reminder

pop-up alert no action required

pop-up alert action required

intervention intensity

low impact

7.0

medium impact

6.5

high impact

hemoglobin A1c in diabetic patients > 65 years old
"Complex but empirically validated algorithms will be embedded in EHR systems as decision support tools to assist in everyday patient care. Those management algorithms will evolve and be modified continuously in accordance with inputs from ongoing clinical observations and from new research. Clinical decision support algorithms will be derived entirely from data, not expert opinion, market incentives, or committee consensus."
How to join in:

Please have interested organizations contact Mary Riordan, director of member engagement for WCHQ via email at mriordan@wchq.org

Questions or requests for additional information can also be sent to Mary via email or by phone at 608-826-6854

Thank you!
Please complete the evaluation that you will receive via email immediately after this webinar. Your feedback is important to us.

Thank you for attending today’s webinar!