Implementing *Choosing Wisely*  SCL Health

Using technology to create a platform for change
Value Based Purchasing

Oh, crap! Was that TODAY?
• Why
  • Safety, quality, and stewardship alignment locally and globally, no reason to think we are different

• How
  • Guideline content from Choosing Wisely
  • Technical
    • Extracts from our EMR master files
    • Alerts built outside and reimported into our EMR
    • Testing and validation
    • Analytics tools show behavior with alerts firing silently
• Why part 2
  • data show focused opportunities
    • makes it real—patients and costs
    • valid or necessary variation needs to be managed
    • business case drives clinical leadership attention
• How part 2
  • pick subset of alerts to begin with based upon clinical and financial business case and move to visible alerts
• PDSA cycles ongoing
– Formed in 2012 by the American Board of Internal Medicine (ABIM) Foundation
– Originally 9 medical societies, now over 70
– Over 300 recommendations
– Potent partnerships – Consumer Reports
Approach Taken by Medical Societies

• Each society created a list of "Things Physicians and Patients Should Question"
• 5 to 15 recommendations
• Evidence-based

Don’t take a multi-vitamin, vitamin E or beta carotene to prevent cardiovascular disease or cancer.

Vitamin supplementation is a multi-billion dollar industry ($20 billion in the United States, much of which is taken with the intention to prevent cardiovascular disease or cancer. However, there is insufficient evidence to demonstrate benefit from multivitamin supplementation to prevent cardiovascular disease or cancer. Adequate evidence demonstrates that supplementation with vitamin C and beta carotene in healthy populations specifically have no benefit on cardiovascular disease or cancer. Beta carotene is also associated with increased risk of lung cancer in smokers and people who have been exposed to asbestos.

Don’t routinely perform PSA-based screening for prostate cancer.

More than 1200 symptom-free men need to be screened for prostate cancer in order to save one additional life. As a result, increased harms and medical costs due to widespread screening of asymptomatic men are believed to outweigh the benefits of routine screening. There is high likelihood of having a false positive result leading to worry, unnecessary quality of life and unnecessary hospitalization, when many of these elevated PSA are caused by enlarged prostate and infection instead of cancer. This recommendation pertains to the routine screening of most men. In rare circumstances, such as a strong family history of prostate and related cancers, screening may be appropriate.

Don’t use whole-body scans for early tumor detection in asymptomatic patients.

Whole-body scanning with a variety of techniques (MRI, PET, PET CT) is marketed by some to screen for a wide range of undiagnosed cancers. However, there is no evidence that these imaging studies will improve survival or improve the likelihood of finding a tumor (incidental tumor detection is less than 5% in asymptomatic patients screened). Whole-body scanning has a high rate of positive findings that result in unnecessary testing and procedures with additional visits, including considerable exposure to radiation with PET and CT. A very small increase in the possibility of detecting cancer later in life, and acquiring additional medical costs is a result of these procedures. Whole-body scanning is not recommended by medical professional societies for asymptomatic patients. It is a wasteful practice that is used in asymptomatic patients.

Don’t use expensive medications when an equally effective and lower-cost medication is available.

On average, the cost of a generic drug is 30%-80% lower than the name-brand product. Although generic drugs are required to have the same active ingredient, strength and similar effectiveness as brand-name drugs. Studies indicate that for every 95% increase in the use of generic chlorpheniramine, Medicare costs would be reduced by $1 billion annually.

Don’t perform screening for cervical cancer in low-risk women aged 65 years or older and in women who have had a total hysterectomy for benign disease.

Health care professionals should not perform cervical screening in women who have had a hysterectomy that removed their cervix and do not have a history of high-grade pre-cancerous lesions or cervical cancer. Screening provides no benefit to these patients and may subject them to potential risks from false-positive results, leading to physical (e.g., vaginal bleeding from bleeding or psychological) (e.g., anxiety).

In addition, cervical cancer should not be performed on women over the age 65 that are at a low risk for cervical cancer and have had negative results from prior screening. Health care professionals should make this decision on a case-by-case basis, but once a patient stops receiving screenings, in general, they should not re-start screenings. Screening for women in this population provides little to no benefit in the absence and prevalence of cervical disease declines for women starting age 40-50 years.

Don’t schedule elective, non-medically indicated inductions of labor or Cesarean deliveries before 39 weeks 0 days gestational age.

Delivery prior to 39 weeks 0 days has been shown to be associated with an increased risk of neonatal disabilities and a potential increase in mortality and morbidity. There are clear medical indications for delivery prior to 39 weeks 0 days based on maternal and/or fetal conditions. A maternal fetal distress test, in the absence of appropriate clinical criteria, is not an indication for delivery.

Don’t schedule elective, non-medically indicated inductions of labor between 39 weeks 0 days and 41 weeks 0 days unless the cervix is deemed favorable.

Ideally, labor should start on its own either spontaneously or by artificial means. Higher Cesarean delivery rates result from inductions of labor when the cervix is unfavorable. Health care practitioners should discuss the risks and benefits with their patients before considering inductions of labor without medical indications.

Don’t perform routine annual cervical cytology screening (Pap tests) in women 30–65 years of age.

In average-risk women, annual cervical cytology screening has been shown to reduce the occurrence of cancer detected at screening, reducing the mortality of cervical cancer in average-risk women. However, there is no evidence that routine screening increases overall survival rates. Women with a previous negative Pap test have a reduced risk of developing cervical cancer and the relative risk of cervical cancer is greater than 10 years before diagnosis. Women who are not at risk for cervical cancer should not receive screening.

Don’t treat patients who have mild dysplasia of less than two years in duration.

Carcinoma in situ (CIN 2) is associated with the presence of the human papilloma virus (HPV), which does not require treatment in average-risk women. Women with CIN 2 on biopsy have a much lower chance of developing cervical cancer and the relative risk of cervical cancer is greater than 10 years before diagnosis. Women who are not at risk for cervical cancer should not receive screening.

Don’t screen for ovarian cancer in asymptomatic women at average risk.

In population studies, there is only limited evidence that screening of asymptomatic women with serum CA-125 levels and/or transvaginal ultrasound can detect ovarian cancer at an earlier stage than is currently detected in the United States. Because of the high prevalence of ovarian cancer and the invasive nature of the interventions required after a positive screening test, the potential harms of screening outweigh the potential benefits.
Antipsychotic drugs are usually not the best choice for treating sleep problems.

Breast cancer treatment: A better way to check the lymph nodes.

CT scans for children with head injuries: When they need them...

Lab tests before surgery: When you need them...

Pap tests: When you need them...

Imaging tests for lower back pain: When you need them...

Treating disruptive behavior in people with dementia.

Antibiotics: When children need them for respiratory illness.
Make the opportunity real.

Society for Cardiovascular Angiography and Interventions

Avoid coronary angiography to assess risk in asymptomatic patients with no evidence of ischemia or other abnormalities on adequate non-invasive testing.

Society for Cardiovascular Angiography and Interventions

Avoid PCI in asymptomatic patients with stable SIHD without the demonstration of ischemia on adequate stress testing or with normal fractional flow reserve (FFR) testing.
<table>
<thead>
<tr>
<th></th>
<th># CDS alerts</th>
<th>annual savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>inpatient</td>
<td>41</td>
<td>$1,719,201</td>
</tr>
<tr>
<td>ambulatory</td>
<td>102</td>
<td>$4,212,145</td>
</tr>
<tr>
<td>total</td>
<td>143</td>
<td>$5,931,346</td>
</tr>
</tbody>
</table>

Assumes perspective of 100% at-risk contract and uses national Medicare reimbursement rates for cost estimates.

Savings estimates
April 2014 – March 2015
March 4, 2015 through June 4, 2015 for the following

1. Imaging for Lower Back Pain;
2. Benzodiazapine for Patients over 65;
3. Carotid Artery Stenosis screening;
4. Carotid Imaging for Syncope; and
5. Antibiotics for Sinusitis

3,192 alerts fired silently representing an estimated opportunity savings of $343,102. These five measures account for 39% of all ambulatory alerts and 35% of the total opportunity savings.
Don’t use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.
Choosing Wisely: Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium. *(American Geriatrics Society)*¹, ², ³

Hyperlink: [Choosing Wisely – American Geriatrics Society](#)  
Information for Patients: [Use of Sedatives in Elderly Patients](#)

Reasons for override:

- sleep disorder
- end of life care
- withdrawal / DT
- non-drug options failed
- peri-procedural anesthesia

note: CDS alert displays using Epic’s native best practice alerts; Epic does not allow use of actual screenshots
CDS to reduce one inpatient blood test:

51 distinct decision points required for the logic tree

**trigger**
IF any inpatient order signed when below criteria is met

**inclusion criteria**
Patient Age $\geq 17$ years
AND active order = (CBC OR CBC no differential, no platelets LAB OR CBC w/auto diff OR CBC w/auto diff/plt OR CBC with manual differential OR CBC w/ manual diff/plt OR CBC with diff OR CBC with differential OR CBC with differential, no platelets )
AND order frequency = (Daily OR Every 24 hours OR Now then every 12 hours OR Every 12 hours OR 2 times daily)
AND order type = Inpatient
AND logged in provider is resident OR ((physician OR fellow OR physician assistant) AND is (specialty = (general medicine OR general surgery) OR patient attending provider))
AND time since admitted to inpatient $\geq 3$ days in hospital or rehab
AND $\geq 3$ HgB results within past 4 days AND $\geq 1$ HgB resulted within past 1 day
AND $\geq 3$ WBC results within past 4 days AND $\geq 1$ WBC results within past 1 day

**exclusion criteria**
NOT lab order status = completed OR pending
NOT (Heart Rate $\geq 100$ bpm in past 12 hours OR Respiratory Rate $\geq 24$/min in past 12 hours OR Systolic Blood Pressure $< 90$ mmHg in past 12 hours)
NOT (Temperature $< 96.8$ °F in past 48 hours OR Temperature $\geq 100.4$ °F in past 48 hours)
NOT (NPO after midnight OR discharge order OR discharge planning order OR transfuse RBC order OR transfuse uncrossmatched RBC OR transfuse platelet order OR crossmatch order)
NOT (any WBC $< 4,000$/ml in past 3 days OR WBC $\geq 11,000$/ml in past 3 days)
NOT (any Hgb result $< 7.5$ g/dL in past 3 days OR Hgb decrease $> 4$% in 72 hours OR Hgb decrease $> 4$% in 48 hours)
NOT (Hgb increase $> 8$% in 72 hours OR Hgb increase $> 8$% in 48 hours)
NOT (any Platelet result $< 50,000$/ml in last 3 days OR platelet decrease $\geq 20$% in 72 hours OR platelet decrease $\geq 20$% in 48 hours)

**recommendation**
Fire Best Practice Advisory with override reasons developed from Choosing Wisely® references
Benzodiazepines in elderly patients

A Choosing Wisely® recommendation from the American Geriatrics Society states:

Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.\(^1\)\(^2\)\(^3\)

Acknowledge reason:
- Failed non-drug options and first-line d...
- Withdrawal / delirium tremens
- Seizure disorder
- Severe / refractory GAD
- Peri procedural anesthesia
- End-of-life care
- Rapid eye movement sleep disorders
- Other indication (please specify)

[Options: Accept & Stay, Accept, Cancel]
Alert Activity per Month

- January: 618
- February: 594
- March: 649
- April: 579

Alert Categories:
- Benzodiazepine
- Antibiotics/Sinusitis
- Carotid
- Pap Smear
- Low Back Imaging
# of alerts caused by providers per month

- **Jan**: 14 (under 5), 52 (between 5 and 10), 143 (over 10)
- **Feb**: 17 (under 5), 43 (between 5 and 10), 163 (over 10)
- **March**: 13 (under 5), 50 (between 5 and 10), 141 (over 10)
- **April**: 13 (under 5), 70 (between 5 and 10), 137 (over 10)

Legend:
- **under 5**
- **between 5 and 10**
- **over 10**
### Top 5 providers with most alerts

<table>
<thead>
<tr>
<th>Provider Type- Specialty</th>
<th>Alerts/day</th>
<th>Alerts/month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Assistant - Family Medicine</td>
<td>0.97</td>
<td>29</td>
</tr>
<tr>
<td>Physician - Internal Medicine</td>
<td>0.73</td>
<td>22</td>
</tr>
<tr>
<td>Nurse Practitioner - Family Medicine</td>
<td>0.63</td>
<td>19</td>
</tr>
<tr>
<td>Physician - Family Medicine</td>
<td>0.6</td>
<td>18</td>
</tr>
<tr>
<td>Physician - Internal Medicine</td>
<td>0.58</td>
<td>17</td>
</tr>
</tbody>
</table>

- Median Alerts per Provider/month - 4.4
- Median Alerts per day - 46.60

*Based on Jan. thru April data*
# Dashboards

**opportunity dashboard**

since 08.06.2014:
- $ - total savings
- $ 1,038,476 total opportunity
- 10,388,798 alerts fired
- 117,538 alerts followed

<table>
<thead>
<tr>
<th>Initiative</th>
<th>alerts</th>
<th>Followed</th>
<th>overridden</th>
<th>ignored</th>
<th>unknown</th>
<th>savings (est)</th>
<th>opportunity - (est)</th>
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<tbody>
<tr>
<td>Choosing Wisely - Ambulatory</td>
<td>8,216</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$ -</td>
<td>$ 987,983</td>
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<tr>
<td>Ambulatory Pilot Alerts</td>
<td>3,192</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$ -</td>
<td>$ 343,102</td>
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<tr>
<td>Choosing Wisely - Inpatient</td>
<td>343</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$ -</td>
<td>$ 50,493</td>
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</table>
Stratified by alert, Imaging for Low Back Pain and Carotid Artery Stenosis Screening account for 83% of the opportunity savings ($283,995).

Benzodiazapine for Patients Over 65 fired the most frequently (1,798) and accounts for 56% of all alerts.

<table>
<thead>
<tr>
<th>alert</th>
<th>cost (est)</th>
<th>alerts</th>
<th>Followed</th>
<th>overridden</th>
<th>ignored</th>
<th>unknown</th>
<th>savings (est)</th>
<th>opportunity (est)</th>
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<tbody>
<tr>
<td>Imaging For Low Back Pain</td>
<td>$300</td>
<td>505</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$-</td>
<td>$151,500</td>
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<tr>
<td>Carotid Artery Stenosis Screening</td>
<td>$363</td>
<td>365</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$-</td>
<td>$132,495</td>
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<tr>
<td>Benzodiazapine for Patients Over 65</td>
<td>$22</td>
<td>1,798</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$-</td>
<td>$39,556</td>
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<tr>
<td>Carotid Imaging for Syncope</td>
<td>$363</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$-</td>
<td>$12,705</td>
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<tr>
<td>Antibiotics For Sinusitis</td>
<td>$14</td>
<td>489</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$-</td>
<td>$6,846</td>
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**Imaging for Low Back Pain:** A total of 138 providers produced 505 silent alerts over the 3-month period. The top 10 providers in frequency account for only 17% of the alerts with 93% of providers having 5 alerts or less (see table).

<table>
<thead>
<tr>
<th>Provider Details</th>
<th>Alerts</th>
<th>Followed</th>
<th>Overridden</th>
<th>Ignored</th>
<th>Unknown</th>
<th>Silent</th>
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</thead>
<tbody>
<tr>
<td>Gregory, Joe Kesler [4080248]</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18 (100%)</td>
</tr>
<tr>
<td>Nichols, Robert James [4060406]</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>Kirkland, Brenda Gay [4060292]</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10 (100%)</td>
</tr>
<tr>
<td>Huber, Joy [4060240]</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10 (100%)</td>
</tr>
<tr>
<td>Bach, Ian S. [4001250]</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7 (100%)</td>
</tr>
<tr>
<td>Antonelli, Lara Michelle [4130003]</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7 (100%)</td>
</tr>
<tr>
<td>Banks, Heather Susann [4167548]</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6 (100%)</td>
</tr>
<tr>
<td>Ogrodnick, John P. [4007682]</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6 (100%)</td>
</tr>
<tr>
<td>Lovett Fournier, Erica Dawn [4170423]</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6 (100%)</td>
</tr>
<tr>
<td>Ellis, Clarence V [4010141]</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5 (100%)</td>
</tr>
</tbody>
</table>
activity dashboard provides an operational overview of alert and provider activity
“I had my own blog for a while, but I decided to go back to just pointless, incessant barking.”
## St. James Choosing Wisely Interventions

- Six pronged intervention
- Engaging the community, medical staff and individuals
- Monitoring and sharing success of interventional approaches

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Target Audience</th>
<th>Frequency</th>
<th>Goals</th>
</tr>
</thead>
</table>
| Step 1:  
Provider led community sharing of specific CW recommendations | Patients and Providers | Approximately every other month | Community awareness  
Provider awareness  
Choosing Wisely Exposure |
| Step 2:  
Brown Bag Lunch series | Providers and nurses | Prior to each community forum | Provider awareness  
Nursing awareness |
| Step 3:  
Consumer Report Handouts | Patients and Providers | Shared at each presentation and in waiting rooms | Community and provider sustainable awareness |
| Step 4:  
Sharing of geographically focused claims data | Providers |  
- Semiannual newsletter  
- Provider group conversations with dashboards | Provider awareness  
Identification for intervention opportunities  
Creating a competitive nature |
| Step 5:  
Stanson Health monitoring of Choosing Wisely recommendation adherence | Provider Community | Monthly reports | Share group adherence behavior monthly times 3 months after presentation then quarterly |
| Step 6:  
Stanson Health Alerts | Individual Provider | Each time a CW opportunity is noted in the three areas of focus | Educate  
Make provider aware of CW opportunity |
Lessons Learned

- Most providers don’t have a big problem but the impact of the opportunity is more than I would have speculated
- Currently available communication and education tools and processes for us have been rate limiting
- Change management challenges
  - patients perception more is better
  - providers perception it takes more time to educate non necessity than to execute an order
  - cloud of liability/defensive medicine
- Management is protective of alert prioritization
- projects that move fast (EMR implementation, MU, Ebola) vs projects that move more slowly (Is safety and stewardship optional?)