Data to Drive Decisions: Using Data to Reduce Low Value Care

September 22, 2022
Presenters

Kyle Russell, MS
Virginia Health Information
Chief Executive Officer

Tim Ginader, MS
CIVHC
Health Care Data Analyst
Our Mission

We strive to empower individuals, communities, and organizations through collaborative support services and health care information to advance the Triple Aim: Better Health, Better Care, Lower Cost

We are:

• Non-profit
• Independent
• Objective
Who We Serve

Change Agents

Individuals, communities, or organizations working to lower costs, improve care, and make Colorado healthier.
What’s in the CO APCD?

What’s **IN** the CO APCD?

- **870+ Million Claims** (2013-2021)
- **36 Commercial Payers, + Medicaid & Medicare** *
- **5+ Million Lives**, Including 1M (50%) of self-insured
- **Nearly 70% of Covered Lives** (medical only)*
- **Trend information 2013-Present**

*Reflects 2021 calendar year only*
How We Inform

Public CO APCD Data
Identify opportunities for improvement and to advance health care through public reports and publications

Non-Public CO APCD Data
Datasets and reports to address specific project needs aimed at better health, better care and lower costs
Introduction

• CIVHC engaged Milliman to apply their MedInsight Health Waste Calculator version 8.0 to the CO APCD to measure the use and cost of low value care services.

• This report summarizes the analysis of results for 58 measures of low value care from 2017 through 2020.

• CIVHC will send data on a semi-annual basis to be run through the health waste calculator.
What is “Low Value Care”? 

• Low value care is care in which the potential harm or cost is greater than the benefit to a patient
• Defined principally by Choosing Wisely guidelines, which were developed by American Board of Internal Medicine Foundation

• Contributing Factors
  • Fear of malpractice
  • Perception that patients want or expect tests or medications
  • Lack of information about the patient
  • Financial incentives of fee-for-service reimbursement
Examples of Low Value Care Measures

• Pediatric Head CT Scans
  • Low diagnostic yields and high risks

• Imaging Tests for Eye Disease
  • Unnecessary for patients without symptoms of disease

• Cardiac Stress Testing
  • Oftentimes unnecessary and therefore wasteful

• Routine General Health Checks
Why is Low Value Care Important?

A substantial amount of U.S. health care spending is on services that do not make us healthier.

$3.5 TRILLION

$935 BILLION

$345 BILLION

LOW-VALUE CARE

Unnecessary, inefficient services, failure of care delivery & coordination

WASTE
Administrative Complexity, Fraud, Pricing Failure, Low-Value Care
Methods

• Only patients with ‘Sufficient History’ are included
• Different low value care services cause different levels of potential harm
• Services are classified as ‘wasteful’, ‘likely wasteful’, ‘necessary’, and ‘optimal’
  • We defined low value care as ‘likely wasteful’ and ‘wasteful’ services
• Spending for low value care results are reported as the allowed amount (plan and patient paid amounts) for the specified services
Key Measurement Statistics

• Low Value Index = \( \frac{\text{Wasteful} + \text{Likely Wasteful}}{\text{Necessary} + \text{Wasteful} + \text{Likely Wasteful}} \)

• Optimal Index = \( \frac{\text{Optimal}}{\text{Optimal} + \text{Necessary} + \text{Wasteful} + \text{Likely Wasteful}} \)

• Percent Low Value Costs

• Cost Per Member Per Month (PMPM)
Low Value Care Summary Results

Statewide Trends

Percentage of Spending on Low Value Services from all Triggered Services

<table>
<thead>
<tr>
<th>Year</th>
<th>Triggered Services Cost</th>
<th>Low Value Services Cost</th>
<th>% Low Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$1.85</td>
<td>$0.21</td>
<td>11.2%</td>
</tr>
<tr>
<td>2018</td>
<td>$1.94</td>
<td>$0.21</td>
<td>10.6%</td>
</tr>
<tr>
<td>2019</td>
<td>$2.00</td>
<td>$0.20</td>
<td>9.9%</td>
</tr>
<tr>
<td>2020</td>
<td>$1.88</td>
<td>$0.19</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

Percentage of Low Value Services from all Triggered Services

<table>
<thead>
<tr>
<th>Year</th>
<th>Triggered Services</th>
<th>Low Value Services</th>
<th>Low Value Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$5.02</td>
<td>43.4%</td>
<td>4.70</td>
</tr>
<tr>
<td>2018</td>
<td>$5.10</td>
<td>41.7%</td>
<td>4.17</td>
</tr>
<tr>
<td>2019</td>
<td>$5.05</td>
<td>39.7%</td>
<td>3.91</td>
</tr>
<tr>
<td>2020</td>
<td>$4.70</td>
<td>38.9%</td>
<td>3.63</td>
</tr>
</tbody>
</table>
Statewide trends continued
Insurance Type Results

Insurance Type

Percentage of Spending on Low Value Services from all Triggered Services, 2019

- Triggered Services Cost
- Low Value Services Cost
- Pct Low Value

<table>
<thead>
<tr>
<th>Insurance Type</th>
<th>Allowed Amount for Services (Billions)</th>
<th>Volume of Services (Millions)</th>
<th>Percent of Spending that is Low Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>$0.74</td>
<td>0.60</td>
<td>13.0%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>$0.35</td>
<td>0.54</td>
<td>12.0%</td>
</tr>
<tr>
<td>Medicare</td>
<td>$0.47</td>
<td>0.44</td>
<td>10.8%</td>
</tr>
<tr>
<td>Medicare Advantage</td>
<td>$0.44</td>
<td>0.42</td>
<td>10.2%</td>
</tr>
</tbody>
</table>
Geographic Region
Division of Insurance Rating Areas
# Most Prominent Low Value Services

Seventeen Services Account for Over 90% of Total Services and Total Spending for Low Value Care in 2019

<table>
<thead>
<tr>
<th>Cost per Service</th>
<th>Spending in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$369</strong></td>
<td>Inappropriate Opioid Prescription</td>
</tr>
<tr>
<td><strong>$13,107</strong></td>
<td>Two or More Antipsychotic Medications</td>
</tr>
<tr>
<td><strong>$186</strong></td>
<td>PICC Stage III-V CKD</td>
</tr>
<tr>
<td><strong>$35</strong></td>
<td>25-OH-Vitamin D Deficiency</td>
</tr>
<tr>
<td><strong>$35</strong></td>
<td>EKGs and Other Cardiac Screens</td>
</tr>
<tr>
<td><strong>$56</strong></td>
<td>Imaging Tests for Eye Disease</td>
</tr>
<tr>
<td><strong>$7,129</strong></td>
<td>Coronary Angiography</td>
</tr>
<tr>
<td><strong>$380</strong></td>
<td>Colorectal Cancer Screening in Adults 50 Years and Older</td>
</tr>
<tr>
<td><strong>$640</strong></td>
<td>Headache Image</td>
</tr>
<tr>
<td><strong>$202</strong></td>
<td>Routine General Health Checks</td>
</tr>
<tr>
<td><strong>$9,571</strong></td>
<td>Vertebroplasty</td>
</tr>
<tr>
<td><strong>$970</strong></td>
<td>Cardiac Stress Testing</td>
</tr>
<tr>
<td><strong>$9,463</strong></td>
<td>Renal Artery Revascularization</td>
</tr>
<tr>
<td><strong>$66</strong></td>
<td>Cervical Cancer Screening in Women</td>
</tr>
<tr>
<td><strong>$195</strong></td>
<td>Lower Back Pain Image</td>
</tr>
<tr>
<td><strong>$452</strong></td>
<td>Pediatric Head Computed Tomography Scans</td>
</tr>
<tr>
<td><strong>$15</strong></td>
<td>Antibiotics for Acute Upper Respiratory and Ear Infections</td>
</tr>
</tbody>
</table>

**Risk of Patient Harm**
- High
- Medium
- Low
Currently Available Interactive Reports

• **Employer Report**
  • Can be generated for a single employer or multiple employers
  • For employers with insufficient volume, can be produced at the county-level
  • Promotes employee education and value-based benefit design

• **Public Report**
  • Highlights comparisons between statewide and DOI Regions
Putting Low Value Care Data To Work—Virginia’s Journey

September 22, 2022
Choosing Wisely campaign not resonating with physicians

What can be done to improve all-payer claims databases?
$2.2 Million Funding for Smarter Care Virginia

1,000+ Participating Physician Practices

7,000+ Participating Physicians
Agenda

1. Who is Virginia Health Information (VHI) and what do we do?
2. How we got started reporting on low value care
3. Overview of Smarter Care Virginia
4. Reflection on journey so far
VIRGINIA HEALTH INFORMATION (VHI)

VHI is an independent, nonprofit, 501(c)(3) health information organization established in 1993 to administer Virginia Health Care Data Reporting Initiatives
What is VHI’s Mission?

Official Mission - [https://vhi.org/About/default.asp](https://vhi.org/About/default.asp)

Translation:

- Break down walls and open channels to share healthcare data
- Support reporting where transparency is needed the most
- Do this in a way that is unbiased, collaborative and provides substantial value to the Commonwealth per dollar of investment
How VHI has Evolved

A few major highlights. There have been many other steps along the way built on a strong foundation.

- 1993: VHI founded, Patient Level Data System established
- 2013: Virginia All-Payer Claims Database created
- 2017: Virginia Emergency Department Care Coordination (EDCC) Program established
- 2019: VHI becomes official Virginia HIE via ConnectVirginia
VIRGINIA'S ALL PAYER CLAIMS DATABASE (APCD)

Participating Health Insurance Companies

- Aetna/CVS/Innovation Health
- Anthem
- Carefirst
- Cigna
- CMS
- DMAS
- Humana
- Kaiser Permanente
- Magellan
- Optima Health
- Piedmont
- United Health Group Plans & Optum
- Virginia Premier

-All individuals covered by Medicaid FFS, Medicaid Managed Care, Medicare FFS and Medicare Advantage

- 40-60% of commercially insured individuals depending on the timeframe

- All individual and small group market, Self insured large group is based on Opt-In decision of employer

- COVA and VA municipalities must participate
VIRGINIA CENTER FOR HEALTH INNOVATION (VCHI)

VCHI is an independent, nonprofit, 501(c)(3) organization established in 2012 to facilitate innovation by convening key stakeholders and securing the resources to accelerate value-driven models of wellness and healthcare throughout Virginia.
# 2017 Statewide Low Value Services Report - Overall

<table>
<thead>
<tr>
<th>Service Category</th>
<th>Mean Cost</th>
<th>Median Cost</th>
<th>Percentile 25</th>
<th>Percentile 75</th>
<th>5-Year Change</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Test</td>
<td>123.45</td>
<td>120.00</td>
<td>100.00</td>
<td>125.78</td>
<td>5% increase</td>
<td>0.001</td>
</tr>
<tr>
<td>Laboratory Test</td>
<td>234.56</td>
<td>240.00</td>
<td>200.00</td>
<td>250.00</td>
<td>3% decrease</td>
<td>0.034</td>
</tr>
<tr>
<td>Imaging Test</td>
<td>345.67</td>
<td>350.00</td>
<td>300.00</td>
<td>350.00</td>
<td>2% increase</td>
<td>0.012</td>
</tr>
</tbody>
</table>

**Note:** All values are in USD and reflect the average cost of services provided in the state of [State] for the year 2017. The 5-year change reflects the percentage increase or decrease in costs compared to the previous year. The P-value indicates the statistical significance of the change.

*Source: [Statewide Low Value Services Report]*
# SUMMARY OF 2018 DATA

**January 2020, HWC Version 7.1**

<table>
<thead>
<tr>
<th>Reporting Period</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Measures</td>
<td>48</td>
</tr>
<tr>
<td>CMS Data Included?</td>
<td>Yes</td>
</tr>
<tr>
<td>Dollars Spent on Unnecessary Services</td>
<td>$539 million per year</td>
</tr>
<tr>
<td>Unnecessary Services Identified</td>
<td>1.72 million per year</td>
</tr>
</tbody>
</table>
## FOLLOW-UP REQUESTS

<table>
<thead>
<tr>
<th>Low Value Measure</th>
<th>Total Low Value Measured</th>
<th>Low Value Index</th>
<th>Low Value Index Trend (Absolute Percentage)</th>
<th>Total Cost (Proxy)</th>
<th>Average Cost per Service (Proxy)</th>
<th>Minimum Risk of Harm Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't perform revascularization without prior medical management for renal artery disease.</td>
<td>30</td>
<td>29</td>
<td>99.6%</td>
<td>$308,720</td>
<td>$10,517</td>
<td>High</td>
</tr>
<tr>
<td>Don’t place peripherally inserted central catheters (PICC) in stage III-V (CKD) patients without consulting nephrology.</td>
<td>42</td>
<td>33</td>
<td>79.9%</td>
<td>$644,741</td>
<td>$15,407</td>
<td>High</td>
</tr>
<tr>
<td>Don’t prescribe nonsteroidal anti-inflammatory drugs (NSAIDs) in individuals with hypertension or heart failure or CKD of all causes, including diabetes.</td>
<td>2,209</td>
<td>1,600</td>
<td>72.7%</td>
<td>$114,022</td>
<td>$50</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t do imaging for low back pain within the first six weeks, unless red flags are present.</td>
<td>1,363</td>
<td>1,162</td>
<td>87.1%</td>
<td>$291,912</td>
<td>$205</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t perform PSA-based screening for prostate cancer in all men regardless of age.</td>
<td>7,274</td>
<td>5,818</td>
<td>80.0%</td>
<td>$636,510</td>
<td>$109</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t order unnecessary cervical cancer screening (Pap smear and HPV test) in all women who have had adequate prior screening and are not otherwise at high risk for cervical cancer.</td>
<td>11,703</td>
<td>5,147</td>
<td>44.0%</td>
<td>$428,200</td>
<td>$53</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t perform imaging of the cardiac arteries for simple syncope without other neurologic symptoms.</td>
<td>137</td>
<td>45</td>
<td>32.7%</td>
<td>$67,602</td>
<td>$563</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t order annual electrocardiograms (ECGs) or any other cardiac screening for low-risk patients without symptoms.</td>
<td>43,084</td>
<td>4,863</td>
<td>10.5%</td>
<td>$1,179,241</td>
<td>$261</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t perform stress cardiac imaging or advanced non-invasive imaging in the initial evaluation of patients without cardiac symptoms unless high-risk markers are present.</td>
<td>2,362</td>
<td>210</td>
<td>8.6%</td>
<td>$142,520</td>
<td>$679</td>
<td>Medium</td>
</tr>
<tr>
<td>Don’t prescribe oral antibiotics for members with upper URI or ear infection (acute sinusitis, URI, viral respiratory illness or acute otitis externa).</td>
<td>16,256</td>
<td>15,058</td>
<td>97.6%</td>
<td>$338,017</td>
<td>$21</td>
<td>Low</td>
</tr>
</tbody>
</table>

*Sample Employer Low Value Services Report*
*Prepared using data from the Virginia All Payer Claims Database (APCD)*
Statewide data starts to create a national stir

Health Affairs article, “Low-Cost, High Volume Services Contribute The Most To Unnecessary Health Spending”, was the 3rd most read Health Affairs Article in 2017
VCHI awarded a $2.2 M grant from Arnold Ventures to launch a statewide pilot to reduce the provision of low-value health services.
"Drop the Pre-Op"

- Don't obtain baseline laboratory studies in patients without significant systemic disease undergoing low risk surgery
- Don't obtain baseline diagnostic cardiac testing or cardiac stress testing in asymptomatic stable patients with known cardiac disease undergoing low or moderate risk non-cardiac surgery
- Don't obtain EKG, chest x-rays or pulmonary function test in patients without significant systemic disease undergoing low-risk surgery

Treatment & Screening

- Don't order annual electrocardiograms or any other cardiac screening for low-risk patients without symptoms
- Don't perform stress cardiac imaging or advanced non-invasive imaging in the initial evaluation of patients without cardiac symptoms unless high-risk markers are present
- Don't routinely order imaging tests for patients without symptoms or signs of significant eye disease
- Don't place peripherally inserted central catheters (PICC) in stage III-V CKD patients without consulting nephrology
- Don’t do imaging for low back pain within the first six weeks, unless red flags are present.
- Don’t prescribe opiates in acute disabling low back pain before evaluation and a trial of other alternatives is considered.
Resources Provided

- Provider Performance Data Reports (Provided Quarterly)
- CME-approved webinars (4)
- Faculty office hours
- Monthly calls with Project Leadership Team and other Cohort 1 CLT members
- Online Platform (Virginia Health Innovation Network)
## Low Value Services Dashboard for Health System

<table>
<thead>
<tr>
<th>Measure Label</th>
<th>Practice Name</th>
<th>Practitioner Specialty</th>
<th>Provider Type</th>
<th>Type of Insurance</th>
<th>Waste Event To Date</th>
<th>When is this service appropriate?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative Laboratory Studies</td>
<td>All</td>
<td>All</td>
<td>Professional</td>
<td>All</td>
<td>Multiple values</td>
<td>- A targeted history and physical exam is deferred and the pre-procedure laboratory should be obtained. - This may change the preoperative, intraoperative, and postoperative management of the patient. - The patient is higher risk. (ASA II to ASA IV) - This patient is undergoing a vaginal procedure and requires a urinalysis per guidelines.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Statewide Index</th>
<th>Average Practice Index</th>
<th>Average Index for Like-Specialties</th>
</tr>
</thead>
<tbody>
<tr>
<td>82%</td>
<td>82%</td>
<td>75%</td>
</tr>
</tbody>
</table>

### Practitioner Comparison

<table>
<thead>
<tr>
<th>Practitioner</th>
<th>Total Low Value Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Smith</td>
<td>15%</td>
</tr>
<tr>
<td>Dr. Lee</td>
<td>45%</td>
</tr>
<tr>
<td>Dr. Johnson</td>
<td>78%</td>
</tr>
<tr>
<td>Dr. Brown</td>
<td>94%</td>
</tr>
<tr>
<td>Dr. Smith</td>
<td>57%</td>
</tr>
</tbody>
</table>

### Graph

- The graph shows a comparison of low value services across different practitioners.
- The x-axis represents total low value services, and the y-axis represents the percentage of low value services.
- Each practitioner is color-coded and compared against the average for the state and their specific specialty.
### Low Value Services Individual Report

<table>
<thead>
<tr>
<th>Measure Label</th>
<th>Practitioner Name</th>
<th>Type of Insurance</th>
<th>Waste To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative Baseline Laboratory Studies</td>
<td>Sheila Harmon</td>
<td>All</td>
<td>Multiple Values</td>
</tr>
</tbody>
</table>

#### Preoperative Baseline Laboratory Studies - Idella Isaman

**Total Services Measured:** 89

<table>
<thead>
<tr>
<th>Low Value Index</th>
<th>Year Index</th>
<th>Avg. System Index</th>
<th>Avg. Statewide Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>84%</td>
<td>89%</td>
<td>82%</td>
<td></td>
</tr>
</tbody>
</table>

#### When is this service appropriate?

- A targeted history and physical exam determine that the pre-procedure laboratory should be obtained.
- Labs results may change the preoperative, intraoperative or postoperative management of the patient.
- The patient is undergoing a urologic procedure and requires a urinalysis per guidelines.

#### When is this service **NOT** appropriate?

- The patient does not have significant systemic disease and is otherwise healthy (patient is ASA I or ASA II) and is undergoing a low-risk procedure (for example, arthroscopy and orthopedic procedures that only require local anesthesia, cataract surgery, corneal replacement and other ophthalmologic procedures, cystoscopy and other minor urologic procedures, dental restorations and extractions, endoscopy, hema repair, minor laparoscopic procedures, superficial plastic surgery).
- Blood tests or fluid shifts are not expected to be minimal.
Low Value Services Dashboard for Health System

When is this service appropriate?

- A targeted history and physical exam to determine that the pre-procedure laboratory should be obtained
- Lab results may change the preprocedural, intraoperative or postoperative management of the patient
- The patient is higher risk (ASA III or IV)
- The patient is undergoing a surgical procedure and requires an analgesia per guidelines

When is this service NOT appropriate?

- The patient does not have significant systemic disease and is otherwise healthy (graded ASA I or ASA II) and is undergoing a low risk procedure (e.g., arthroscopy and orthopedic procedures that only require local anesthesia, cataract surgery, coronal replacement and other orthopedic procedures, coronary and other minimally invasive procedures, dental extractions and soft-tissue, endoscopy, hernia repair, incision and drainage of abscess)
- Blood loss or fluid shifts were expected to be minimal

Services Trend

Index Trend

Total Low Value Services

Low Value Index

Arg. statewide Index

Underlying data for 2021 Q1 through 2021 Q4 does not include Medicare FFS claims and may not include claims from some Medicaid and/or commercial payers. As a result, trends may be inconsistent during this timeframe and should be analyzed with caution.
EACH MEASURE PRESENTS UNIQUE CHALLENGES
EACH MEASURE PRESENTS UNIQUE CHALLENGES
Preoperative Baseline Laboratory Studies
ONGOING IMPACT: EXPANDING BEYOND VIRGINIA

State APCD Low-Value Care Report
ONGOING IMPACT: EXPANDING BEYOND VIRGINIA

Spending on 47 Low-Value Services in Medicaid and Commercial Plans in 2017 by Patients and Plans

Notes: spending in thousands $. These figures only represent Maine, Colorado, and Virginia. Washington did not separately report patient and plan spending, estimated allowed spending based on standard pricing for Medicaid and commercial plans.
ONGOING IMPACT- REFLECTION ON THE DATA

- Impact of COVID-19
- Data lag
- Waste Calculator Version
- Include facility results?
- Validating results
ONGOING IMPACT- REFLECTION ON THE PROGRAM

- Nothing has generated more interest
- Facilitates movement from research to clinical decision making support
- While not perfect, APCDs are the most ideal data source available for this type of project
Thank You.

Facebook: @VaHealth
Twitter: @VaHealthInfo
LinkedIn: Virginia Health Information
Website: www.vhi.org
Questions and Feedback

Reach out to info@civhc.org

Connect with CIVHC on Facebook, LinkedIn, and Twitter

Recording will be posted here: www.civhc.org/about-civhc/news-and-events/event-resources/
Next Webinar

• October 20th, 12-1pm MT
• Advance Care Planning
• Presenters: CIVHC