



2020 NRTRC TAO VIRTUAL CONFERENCE



Northwest Regional Telehealth Resource Center and the Telehealth Alliance of Oregon **Welcome You**

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VIRTUAL SESSION INSTRUCTIONS

- Audio and video are muted for all participants
- Use the Q&A feature to ask questions 
- Moderator will read questions to the speaker
- Presentation slides are posted at <https://nrtrc.org/sessions>. Recordings will be posted after the conference.

- Moderator: Matt McCullough
- Presenter:
 - Tim Lovell, Director, Telehealth Operations, Intermountain Healthcare

Virtual Visits: Added Cost or Value Add?

In an Integrated Health System



*Tim Lovell, MBA
Operations Director, Connect Care*



Intermountain Scope & Stewardship



>200 Clinics (UT / NV)



9 States, **40+** sites



23 Hospitals
+1 Virtual Hospital



39,800 Caregivers
(includes Nevada)



900,000+
SelectHealth Members



\$250M
Financial Assistance



30+ Acute Care
Services



>800,000 telehealth
Interactions



10 Out-Patient /
DTC Services

Telehealth at Intermountain

ACUTE CARE, PEDIATRICS

Pediatric Trauma

- ER Trauma consults

Newborn Critical Care

- Newborn emergency consults

Craniofacial Consults

- Integrated Staffing with multiple specialties: *Plastic Surgeon, Otolaryngology, Craniofacial Orthodontics, Speech Therapy, Social Work, Nursing and Audiology*

Acute Care Services (24/7)

Critical Care Services

- ICU patient management
- 170 beds monitored daily

Hospitalist Services

- MedSurg, Nocturnal, Post Acute Care

Hybrid Services

- Critical Care and Hospitalist model

Medical Oncology

- Care planning, treatment and management

Crisis Care Services

- Emergency Behavioural Health

Acute Care Services (24/7)

Neuro Stroke

- Real time evals and tPA recommendations
- Over 5,000 consults

Neuro Consults

- On-demand, in-patient consults
- Post stroke / ICU care management

Infectious Disease

- Asynchronous and Synchronous
- On-demand, out / in-patient consults

Antibiotics Stewardship Program

- Review and management of program

Telehealth at Intermountain

DIRECT TO CONSUMER

Connect Care Urgent Care

- Low acuity care management
- Largest System Urgent Care ~55K visits in 2020
- On-demand 24 x 365
- \$59 price point
- APP staffed
- Nationwide coverage
- Integrated Amwell and Cerner platforms
- Local Rapid Strep and COVID-19 testing

DIRECT TO CONSUMER

Scheduled Video Visits

- Scheduled follow up consults
- Primary Care and Specialty Care
- EAP Service and Workman Comp
- Visits integrated with iCentra EMR

Post Acute

- Skilled Nursing Facility after hours follow ups

Remote Patient Monitoring

- Hospital charged and readmission prevention

SPECIALTY CONSULT (2020 / 2021)

Neurology Consults

- Low Back Pain and Migraine Headache management

Endocrinology Consults

- Standardize A1c management

Rheumatology Consults

- Reduce inappropriate pharmacy spend

Nephrology Consults

- Home care management

What I'll Cover Today:

1. Virtual Visit Claims Study
2. Model For Defining Virtual Visit Value

Acknowledgements

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Doug Elmer, FSA, MAAA, SelectHealth – Claims data and analysis

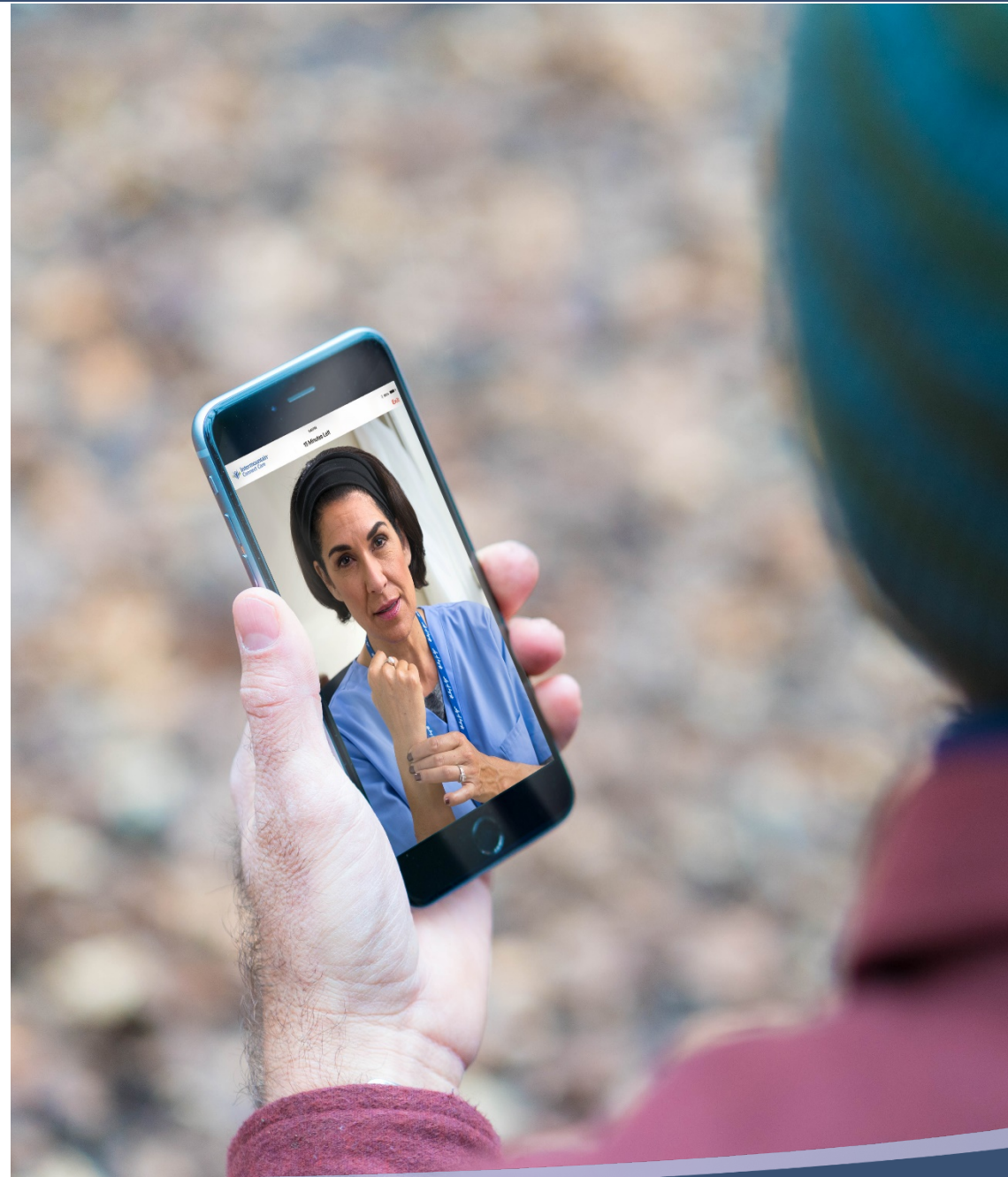
Conrad Daley, SelectHealth, – Claims data and analysis

Tammy Christiansen, Intermountain – BI

Claims Value Study

Virtual vs traditional care settings for low-acuity urgent conditions: An economic analysis of cost and utilization using claims data

2019 July publication in Journal of Telemedicine and Telecare



Background

- Little research on online urgent care or ‘virtual care’ (VC) visits.
- Mixed results on impact to overall cost of care.^{1,2}
- Motivation: retrospective claims study by Gordon, et al (2017). ¹
- Conduct similar study with unique perspective of an integrated health system.

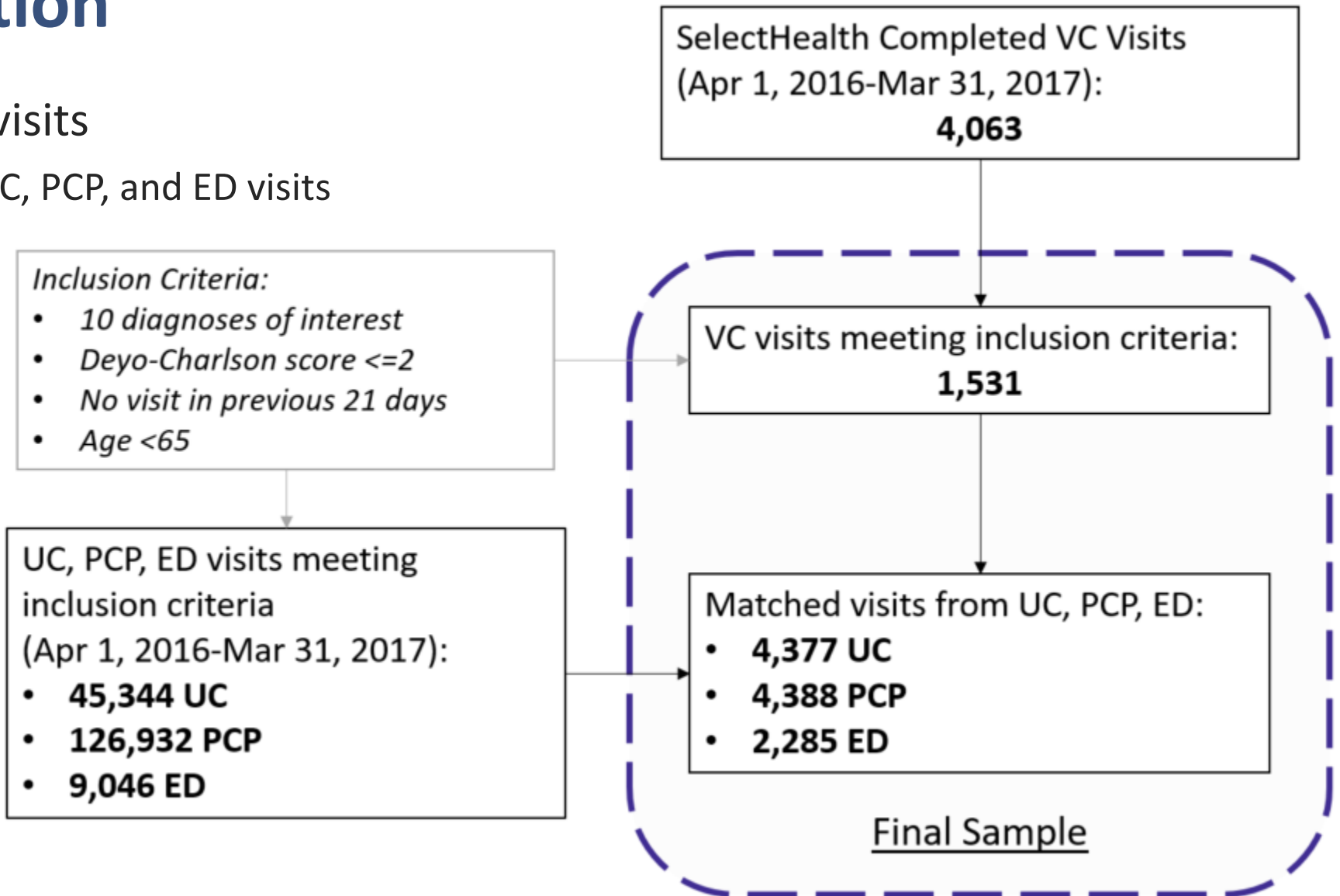
1. Gordon E et al. Virtual Visits for Acute, Nonurgent Care: A Claims Analysis of Episode-Level Utilization. *JMIR*. 2017;19(2). <https://www.jmir.org/2017/2/e35/>
2. Ashwood JE et al. Direct-To-Consumer Telehealth May Increase Access To Care But Does Not Decrease Spending. *Health Aff*. 2017;36(3):485-291.

Methods

- Episode defined as an index visit with no claims in preceding 21 days and included all claims ≤ 21 days after index visit.
- Outcomes
 - Total cost of episode (includes visits, Rx, labs, and imaging)
 - Follow-up rate
 - Utilization rate for labs, imaging, and antibiotics
- Analytic methods
 - Total cost of episode: generalized linear model with gamma distribution and log link
 - Follow-up and utilization rate: generalized linear model with binomial distribution and logit link
- Aggregated patient survey responses from VC for analysis of projected savings and added costs.

Sample Selection

- 1531 Virtual Care visits
 - Matched 1:3 with UC, PCP, and ED visits



Limitations

- Results apply only to patients that met our inclusion criteria
- Only patients insured by SelectHealth.
- Unable to complete 3:1 match for ED.
- Unable to completely control for acuity.
- Insufficiently powered to show significance in Dx comparisons.

Sample Characteristics

- Demographics
 - Similar distribution for gender and pediatric (age <18) versus adult (age 18-65) across care settings.
- Comorbidities
 - Similar rates of DM, hypertension, CHF, COPD, and asthma across care settings.
- Diagnoses
 - Similar rates for VC, UC, PCP.
 - ED rates different than VC.
 - For VC bronchitis, conjunctivitis, URI, and UTI constitute 84% of all visits.

| | VC (N=1531) | UC (N=4377) | PCP (N=4388) | ED (N=2285) |
|-----------------------|----------------|----------------|-----------------|----------------|
| Diagnosis | | | | |
| Bronchitis | 3.6% | 3.7% | 3.7% | 7.0% |
| Conjunctivitis | 17.0% | 17.1% | 17.1% | 10.0% |
| Cough | 1.5% | 1.6% | 1.5% | 2.9% |
| Dermatitis / eczema | 2.5% | 2.4% | 2.5% | 3.6% |
| Digestive symptoms | 1.7% | 1.8% | 1.8% | 3.4% |
| Ear pain | 2.1% | 2.2% | 2.2% | 4.2% |
| Influenza / pneumonia | 4.6% | 4.8% | 4.8% | 9.1% |
| Sinusitis | 39.7% | 39.0% | 39.1% | 9.5% |
| URI | 12.8% | 13.2% | 13.2% | 24.9% |
| UTI | 14.5% | 14.2% | 14.2% | 25.4% |

21 Day Follow-up Rates

| | VC (N=1531) | UC ¹ (N=4377) | PCP ¹ (N=4388) | ED ¹ (N=2285) |
|-----------------------------|-------------|--------------------------|---------------------------|--------------------------|
| Any follow-up medical visit | 35.3% | 35.6% | 35.7% | 73.0%*** |
| Evaluation & Management | 26.6% | 24.5% | 22.6%*** | 39.8%*** |
| Emergency Department | 1.8% | 2.3% | 2.6% | 9.7%*** |
| Inpatient | 0.4% | 0.6% | 0.7% | 2.6%* |

¹ UC, PCP, and ED visits adjusted for VC distribution of comorbidities, age, sex, and diagnosis
Significance compared to VC: * p<.05; ** p<.01; *** p<.001

Lab, Imaging, and Antibiotic Use

| | VC (N=1531) | UC ¹ (N=4377) | PCP ¹ (N=4388) | ED ¹ (N=2285) |
|----------------------------|-------------|--------------------------|---------------------------|--------------------------|
| Outpatient lab use, 21-day | 9.0% | 27.5%*** | 25.7%*** | 11.5%* |
| Imaging, 21-day | 3.9% | 7.2%*** | 5.5%* | 27.8%*** |
| Antibiotic Rx Claim, 3-day | 69.8% | 70.0% | 69.8% | 62.3%*** |

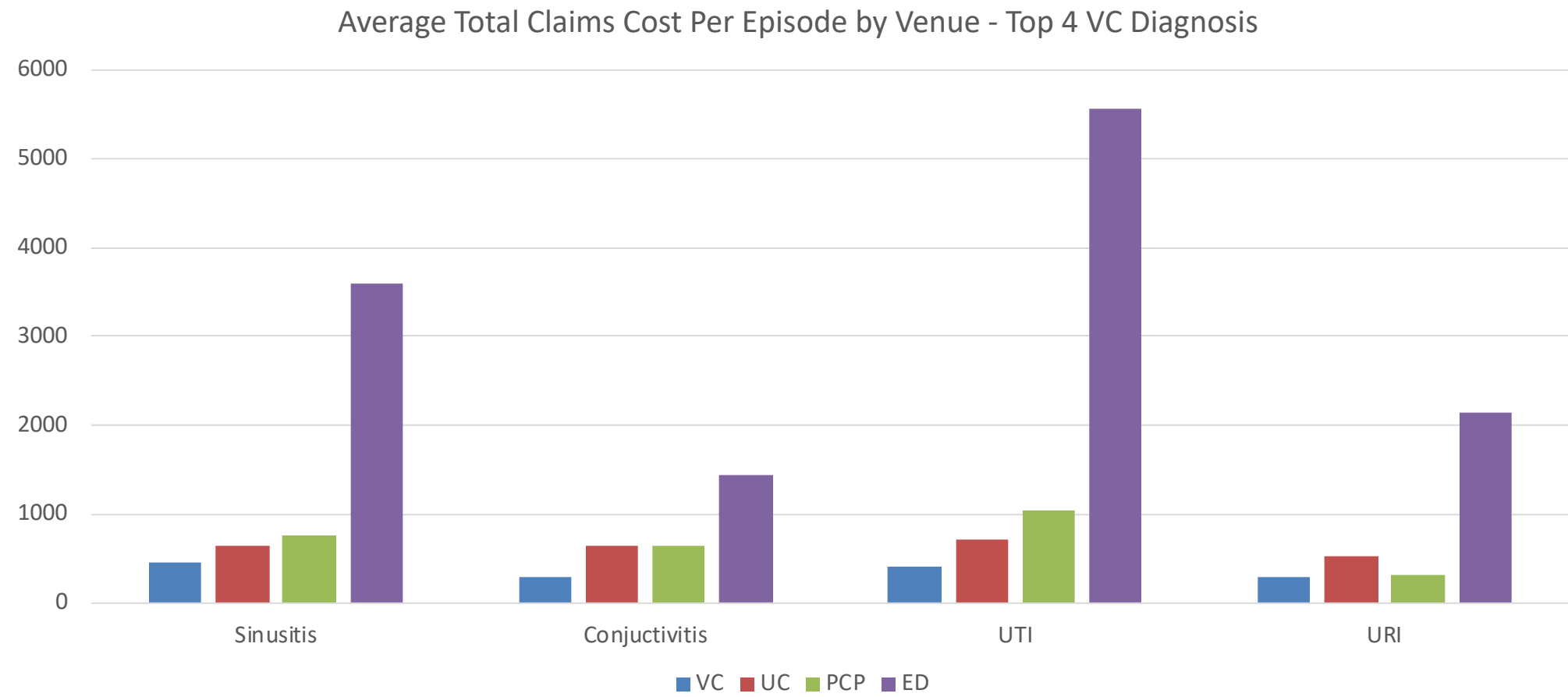
¹ UC, PCP, and ED visits adjusted for VC distribution of comorbidities, age, sex, and diagnosis
Significance compared to VC: * p<.05; ** p<.01; *** p<.001

Cost Analysis

| | Average Cost Per Visit | | | |
|-----------------------|------------------------|-----------------------------|---------------------------|-----------------------------|
| | VC (N=1531) | UC ¹ (N=4377) | PCP ¹ (N=4388) | ED ¹ (N=2285) |
| Index Cost | \$45 | \$136*** | \$114*** | \$1384*** |
| Pharmacy Cost | \$111 | \$114 | \$117 | \$153* |
| Follow-up Cost | \$288 | \$413 | \$490* | \$1782*** |
| Total Cost | \$429 | \$661*** | \$707** | \$3403*** |

¹ UC, PCP, and ED visits adjusted for VC distribution of comorbidities, age, sex, and diagnosis
Significance compared to VC: * p<.05; ** p<.01; *** p<.001

Cost Analysis by Diagnosis



Discussion

- Significantly lower cost for VC vs all other care venues.
- Reaffirms results from Gordon et al, 2017 for an integrated health system.
- Higher total cost in non-VC venues is driven by cost of index visit and follow up care cost.
- Treatment of common VC conditions in EDs represent substantially higher costs for both system and patient.
- No significant difference in overall follow up rates between VC, UC, and PCP.
- No significant difference in antibiotic claim rates between VC, UC, and PCP.

Virtual Visit Value – Implications for an Integrated System

- Directing of patients with applicable conditions to virtual care...
 - can lower overall health plan cost.
 - is not associated with higher rates of antibiotic claims or follow-up care.
- Health plan savings should be considered as part of overall value proposition to the integrated health system.

Defining the Value of Virtual Visits

Claims Cost Reduction

+

Patient Value

+

System Value

=

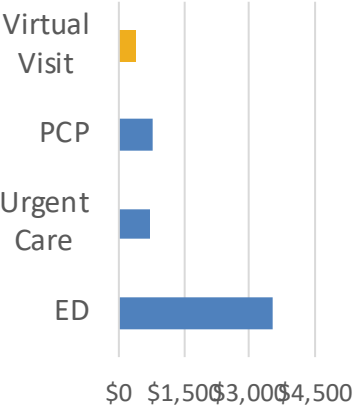
Overall Value

Demonstrating SelectHealth Value

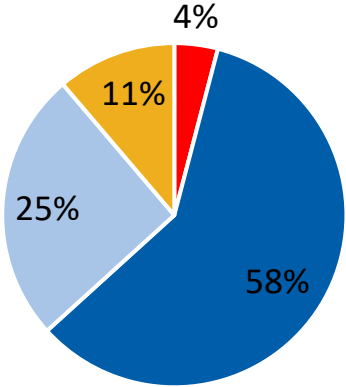


2019

Total Treatment Costs
(initial visit and all care costs within 21 days)



Redirect Patient Survey Response
(post Visit)



- Emergency Department
- Urgent Care
- PCP
- Done Nothing

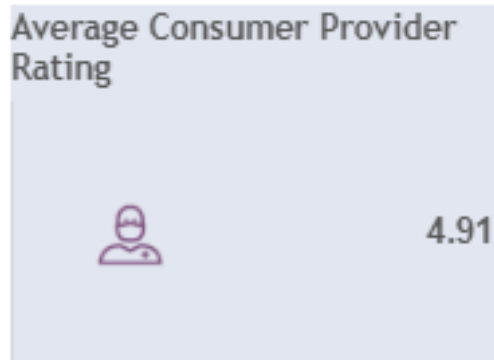
| | |
|-----------------------------------|------------------|
| SelectHealth Savings Per Claim | \$258 |
| SelectHealth Connect Care Claims | 15,342 |
| Total SelectHealth Savings | \$3.31 MM |

Demonstrating Patient Value

| | Per Visit | \$ Savings Per Visit |
|------------------------------------|--------------|----------------------|
| Reduced Time Waiting and Traveling | 43.5 minutes | \$16.63 ¹ |
| Reduced Travel | 14.2 miles | \$8.24 ² |
| Reduced Visit Cost | | \$127 |
| Total Patient Savings | | \$151.87 |

\$5.7M

Patient Savings in first 4 years

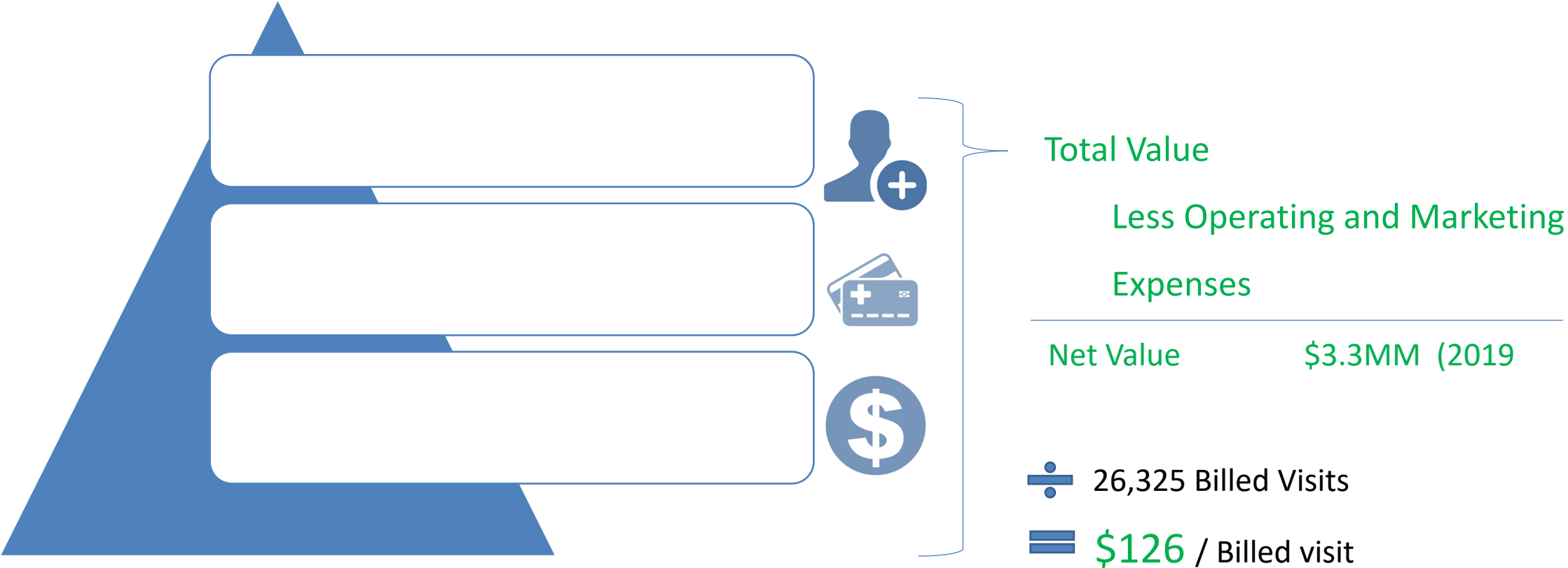


Where would you have gone?

| | | |
|---------------------------------|--------|------|
| Urgent care center | 14,551 | 55% |
| Doctor's office | 7,133 | 27% |
| Done nothing | 3,453 | 13% |
| Emergency room | 798 | 3% |
| Alternate online health service | 388 | 1% |
| Retail health clinic | 295 | 1% |
| Grand Total | 26,614 | 100% |

1. Based on Media Hourly Wage of \$17.14 for Utah workers: https://www.bls.gov/oes/2017/may/oes_ut.htm#00-0000
2. Based on IRS per mile reimbursement rate: <https://www.irs.gov/pub/irs-drop/n-19-02.pdf>

Integrated System Value





Thank You.

Questions?

Contact me at Tim.lovell@imail.org