

What is ACCORDS?

Adult and Child Center for Outcomes Research and Delivery Science

ACCORDS is a 'one-stop shop' for pragmatic research:

- A multi-disciplinary, collaborative research environment to catalyze innovative and impactful research
- Strong methodological cores and programs, led by national experts
- Consultations & team-building for grant proposals
- Mentorship, training & support for junior faculty
- Extensive educational offerings, both locally and nationally



ACCORDS Upcoming Events – mark your calendars!

January 13, 2025 AHSB 2200/2201	Digital Health and Applied Clinical Informatics Ethics in Bias in Artificial Intelligence <i>Presented by Matt DeCamp, MD, PhD</i>
January 15, 2025 Virtual	Transforming and Advancing a Learning Health System: Multiple Perspectives for Mutual Gain Ken Kawamoto, MD, PhD
February 2025 Day 1 (2/14): AHSB Day 2 (2/28): Zoom	*New Workshop* ACCORDS/CCTSI Pragmatic Research Planning Workshop <i>Registration live on ACCORDS Education website!</i> Rolling application cycle; due latest by January 10, 2025
Annual Conference June 4-6, 2025 9:00-3:30pm MT	Colorado Pragmatic Research in Health Conference Future of Pragmatic Research: Building Multidisciplinary Teams for Innovation and Impact





Improving Infectious Diseases Care in Utah: 10 Years in a Learning Health System

Presented by:
Eddie Stenehjem, MD, MSc





University of Colorado **Anschutz Medical Campus**

Improving Infectious Diseases Care in Utah 10 Years in a Learning Health System

Eddie Stenehjem, MD MSc
Professor of Medicine
Division Head (interim), Division of Infectious Diseases
Executive Vice Chair, Department of Medicine



Agenda

- **What is Intermountain Health?**
- **What is a learning health system?**
- **10+ years of research in a learning health system**



Intermountain by the Numbers



7 Primary States¹
(UT, NV, ID, CO, MT, KS, WY)



63,000+
Caregivers



33 Hospitals
Including 1
Virtual Hospital



1,092,000+
SelectHealth
Members



\$14.7 billion²
Total Revenue



4,800
Licensed Beds



385
Clinics



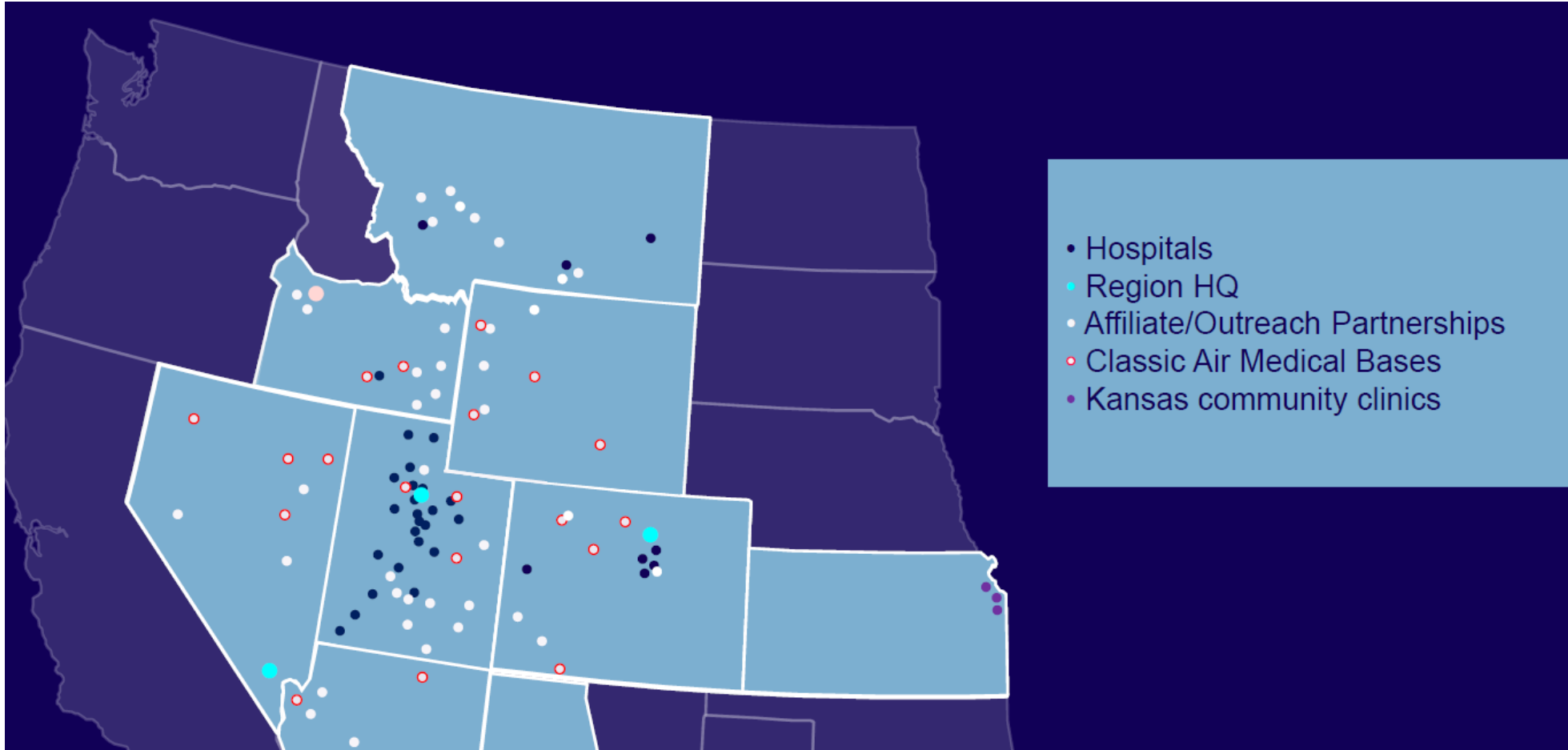
4,200 Employed
Physicians & APPs



School of Medicine

UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

Intermountain's Current Footprint



Intermountain History



- LDS Hospital built in 1905
- 1944 – first surgical and medical residencies
- 1954 – first medical computer!
- 1974 – Intermountain Healthcare takes over operation from LDS Church's 15 hospitals and commits to operate them as a non-profit, serving the community and patients
- “Be a model health system”

Defining a Learning Health System

A health system in which internal data and experience are systematically integrated with external evidence, and that knowledge is put into practice. As a result, patients get higher quality, safer, more efficient care, and health care delivery organizations become better places to work.

Learning Health Systems:

- Have leaders who are committed to a culture of continuous learning and improvement.
- Systematically gather and apply evidence in real-time to guide care.
- Employ IT methods to share new evidence with clinicians to improve decision-making.
- Promote the inclusion of patients as vital members of the learning team.
- Capture and analyze data and care experiences to improve care.
- Continually assess outcomes refine processes and training to create a feedback cycle for learning and improvement.



August 1, 2012

Start Antibiotic Stewardship

- Given dedicated time for stewardship (40% ish)
- Joined a very small group with incredible potential (4)
- Joined a system that valued QI/PI and research
- Had just finished my MSCR at Emory
- Relatively mentorless



Antibiotic Stewardship Timeline



2012

Successful Securing Grant Funds:
SCORE (Joint Comm)

 **Eddie Stenehjelm, MD**
Principle Investigator

2012

2 ID/AS PharmD's
2 Hosp covered
Lots of potential
"Committee"


OBSTACLES


Successful Securing Operational Funds:
Tele ID and ASP

 **Todd Vento, MD**
Medical Director


 **John Veillette, PharmD**
Lead pharmacy role


Successful Securing Operational Funds:
ASP Leadership


 **Eddie Stenehjelm, MD**
Medical Director

 **Whitney Buckel, PharmD**
Pharmacy Manager

Successful Securing Grant Funds:
SCORE – UC (CDC)

 **Eddie Stenehjelm, MD**
Principle Investigator

 **Adam Hersh, MD PhD**
Principle Investigator

 **Anthony Wallin, MD**
Co – Investigator - UC

COVID
Operations / Research

Clinical Trials
CDC VISION Network
COVID Rounds
Novel therapeutics
Dissemination of best practices

2023

- 13 ID/AS PharmDs
- 23 Hosp covered
- Tele program
- National leader
- System based
- Continuum

How it started

- Asked to lead the system committee on stewardship
- CMS and Joint Commission talking about regs
- Realized I wasn't going to get more support anytime soon
- Needed to get a grant
- Pfizer and Joint Commission Grant to study small hospitals!



Example 1: Small Community Hospitals

15 Small Community Hospitals

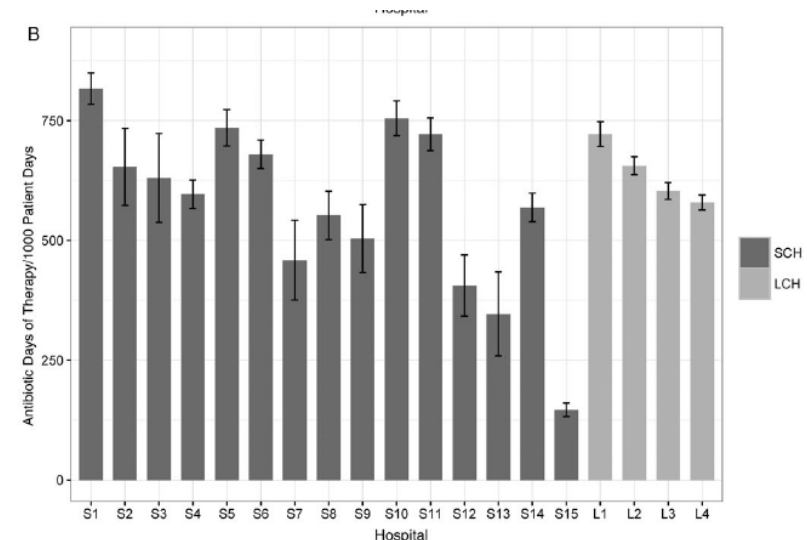
- Antibiotic use unknown
- NO ID or ASP support
- <20% of US hospitals with ASP
- >80% of hospitals in the US with < 200 beds

Clinical Infectious Diseases Advance Access published September 30, 2016
Clinical Infectious Diseases
MAJOR ARTICLE
IDSA Infectious Diseases Society of America
hivma hiv medicine association
OXFORD

Antibiotic Use in Small Community Hospitals

Edward Stenehjem,^{1,7} Adam L. Hersh,³ Xiaoming Sheng,⁴ Peter Jones,¹ Whitney R. Buckel,² James F. Lloyd,⁵ Stephen Howe,⁶ R. Scott Evans,^{5,6} Tom Greene,⁴ and Andrew T. Pavia³

¹Division of Clinical Epidemiology and Infectious Diseases, ²Department of Pharmacy, Intermountain Medical Center, Murray, ³Division of Pediatric Infectious Diseases, ⁴Study Design and Biostatistics Center, University of Utah School of Medicine, ⁵Biomedical Informatics, University of Utah, and ⁶Medical Informatics, Intermountain Healthcare, Salt Lake City, Utah; and ⁷Division of Infectious Diseases, Stanford University School of Medicine, California



SCORE Study: Cluster RCT

How do stewardship in small hospitals?

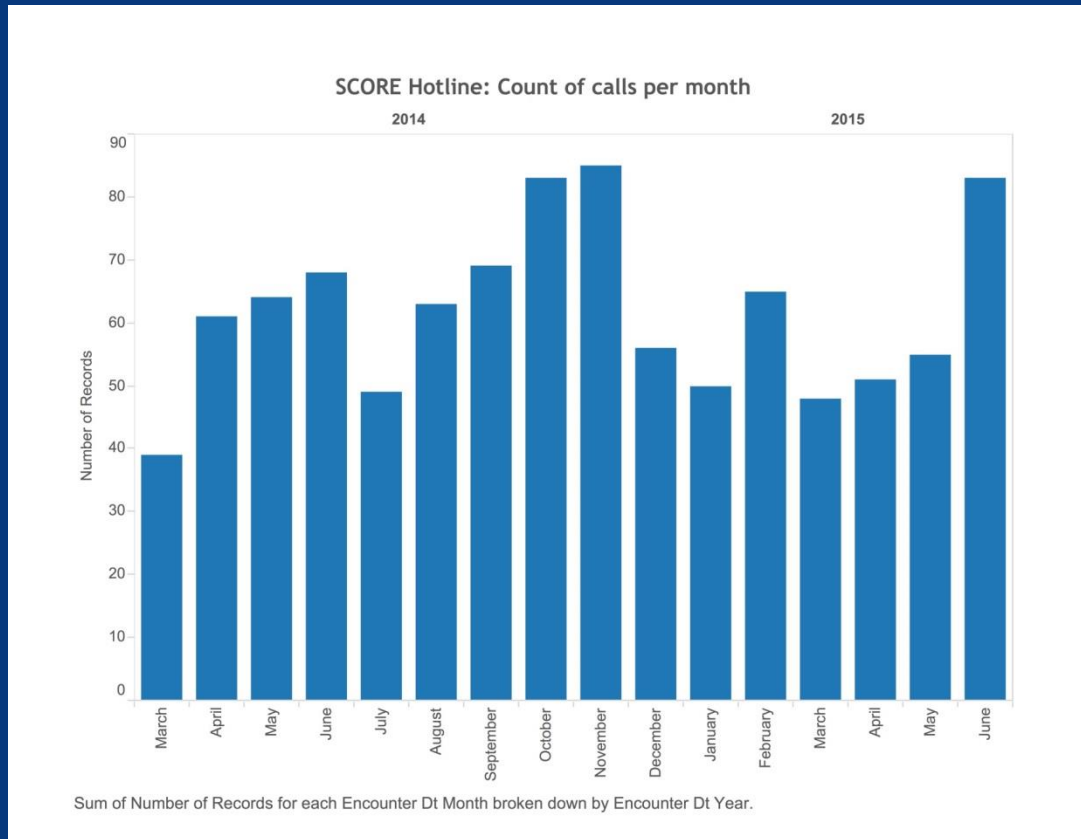
Program components		
Common to all programs		
Basic stewardship education and tools		
ID hotline		
Antibiotic utilization report		
Program 1	Program 2	Program 3
	Advanced antibiotic stewardship education	Advanced antibiotic stewardship education
	Limited prospective audit and feedback	Expanded prospective audit and feedback
	Local antibiotic restriction	ID-controlled antibiotic restrictions
		ID review of designated cultures



SCORE Hotline Results

- 1,006 calls to the adult ID clinician

- Call Infectious Diseases** for any of the following infections:
- Patients requiring home IV antibiotics
 - *S. aureus* bacteremia
 - *Candida* bloodstream infections
 - Endocarditis
 - Confirmed CNS infection
 - Carbapenem-resistant organisms
 - HSV infections in children <60 days old
 - Bone and joint infections in children



Type of Call

New: 77%

Follow-up: 23%

Time per call

< 1 minute: 1.6%

1 – 5 minutes: 47.4%

5-15 minutes: 48%

>15 min: 2.6%

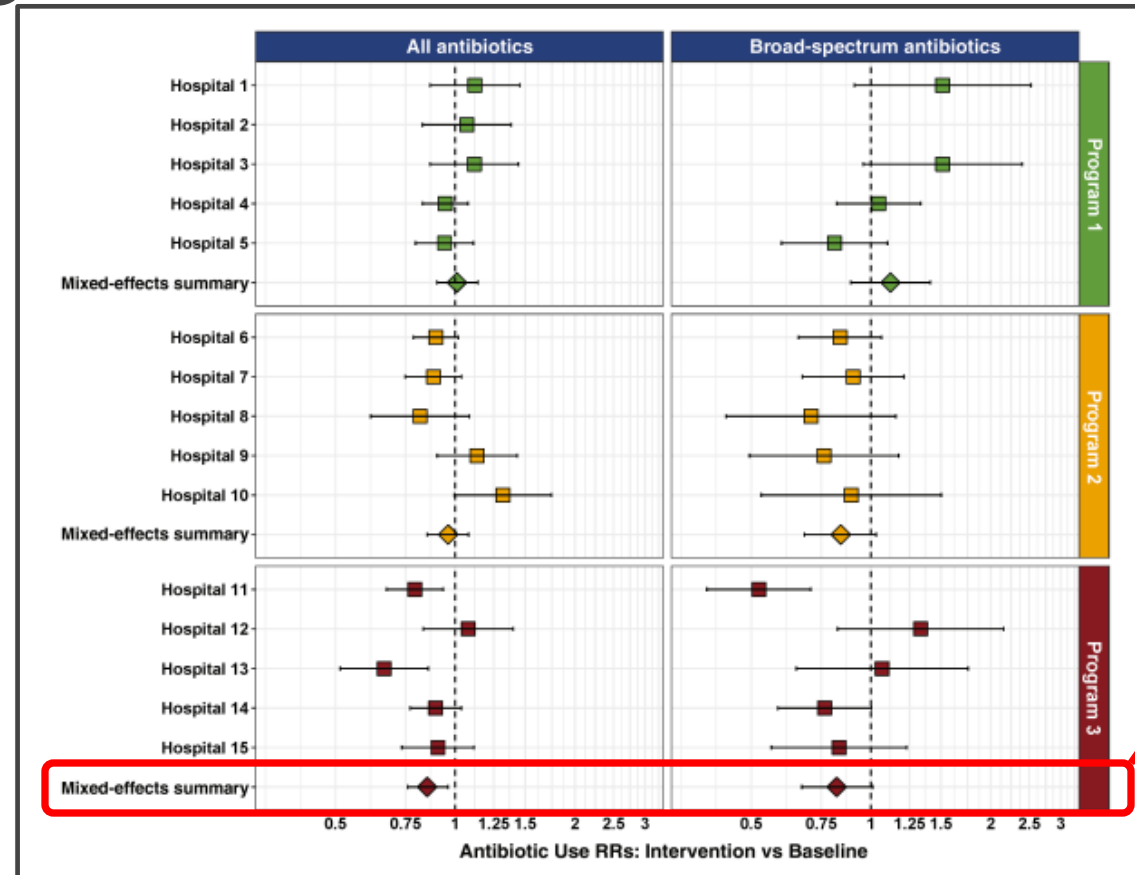
SCORE Highlights

- The self referral
- “Can I send you a picture?”
 - Worms in stool/skin
 - I/(my patient) has this rash
- “I have a Mormon missionary here from...”
- “90 y/o with pseudomonas PJI and....”
- “I can’t pronounce this organism...”



SCORE Study: Cluster RCT

Results - ITS



Now what?
We can't take
this program
away!

How sustain these gains?

Intermountain Tele – ID and Stewardship



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Operationalize!

Open Forum Infectious Diseases

MAJOR ARTICLE

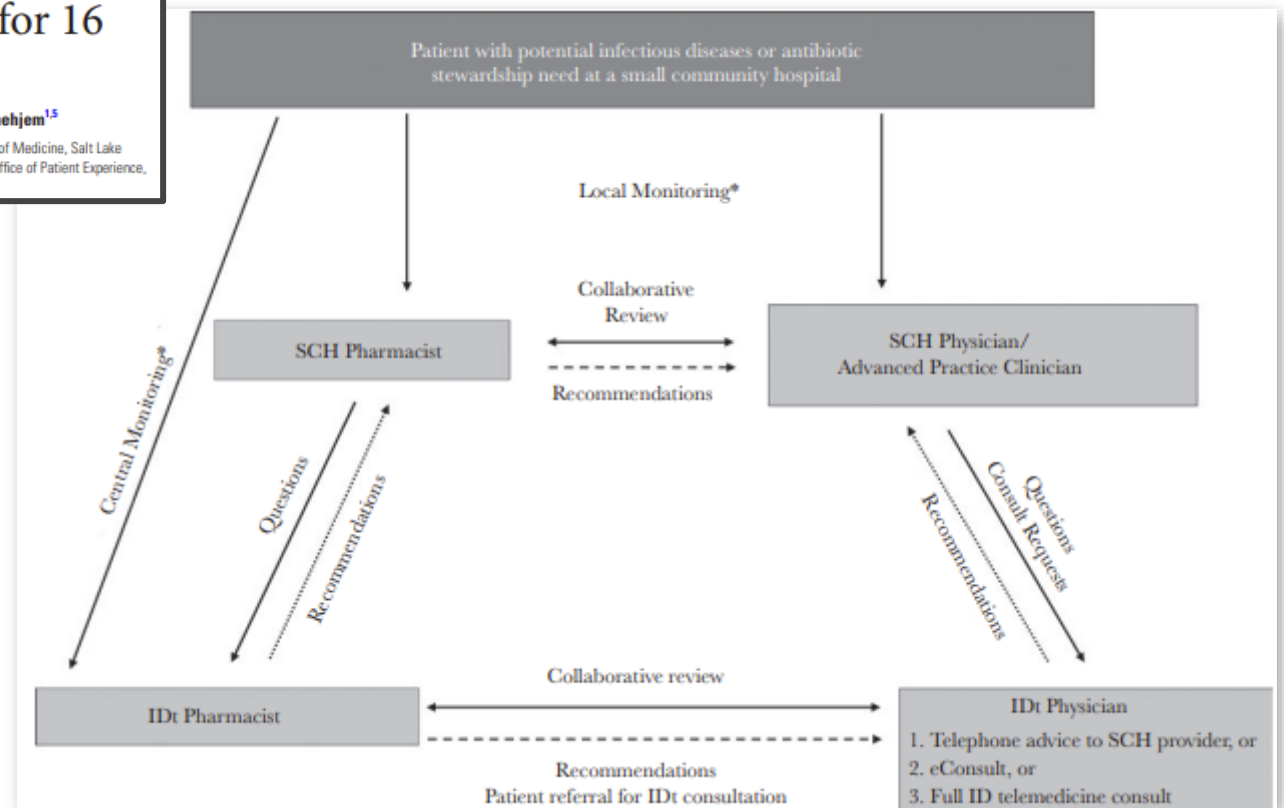


Implementation of an Infectious Diseases Telehealth Consultation and Antibiotic Stewardship Program for 16 Small Community Hospitals

Todd J. Vento,^{1,2,3,4} John J. Veillette,^{3,4} Stephanie S. Gelman,^{1,2,3} Angie Adams,¹ Peter Jones,¹ Katherine Repko,³ and Edward A. Stenehjem^{1,5}

¹Division of Infectious Diseases and Clinical Epidemiology, Intermountain Medical Center, Murray, Utah, USA, ²Division of Infectious Diseases, University of Utah School of Medicine, Salt Lake City, Utah, USA, ³Intermountain Healthcare TeleHealth Services, Murray, Utah, USA, ⁴Department of Pharmacy, Intermountain Medical Center, Murray, Utah, USA, and ⁵Office of Patient Experience, Intermountain Healthcare, Salt Lake City, Utah, USA

- Now with an innovative staffing model
- Over 5 non-Intermountain hospitals
- Used as a model for other tele enabled specialties
- National model for tele - ID



2024: Research and Innovation

Open Forum Infectious Diseases

MAJOR ARTICLE



A Fully Integrated Infectious Diseases and Antimicrobial Stewardship Telehealth Service Improves *Staphylococcus aureus* Bacteremia Bundle Adherence and Outcomes in 16 Small Community Hospitals

John J. Veillette,^{1,2,6} Stephanie S. May,^{1,2} Althea D. Gabrellas,³ Stephanie S. Gelman,^{1,4} Jordan Albritton,^{5,6} Michael D. Lyons,⁷ Edward A. Stenehjem,^{4,7} Brandon J. Webb,^{4,7,8} Joseph D. Dalto,⁹ S. Kyle Throneberry,^{1,4} Valoree Stanfield,⁴ Nancy A. Grisel,⁴ and Todd J. Vento^{1,4}

¹Infectious Diseases TeleHealth Service, Intermountain Medical Center, Murray, Utah, USA, ²Department of Pharmacy, Intermountain Medical Center, Murray, Utah, USA, ³Division of Infectious Diseases, University of Utah, Salt Lake City, Utah, USA, ⁴Division of Clinical Epidemiology and Infectious Diseases, Intermountain Medical Center, Murray, Utah, USA, ⁵TeleHealth Services, Intermountain Healthcare, Midvale, Utah, USA, ⁶RTI International, Durham, North Carolina, USA, and ⁷Division of Infectious Diseases and Geographic Medicine, Stanford University School of Medicine, Stanford, California, USA

BRIEF REPORT

Journal of Hospital Medicine

Effect of tele-COVID rounds and a tele-stewardship intervention on antibiotic use in COVID-19 patients admitted to 17 small community hospitals

Stephanie Shealy May PharmD, BCIDP^{1,2} | John J. Veillette PharmD, BCIDP^{1,2}
Brandon J. Webb MD¹ | Edward A. Stenehjem MD, MsC³ |
Steven K. Throneberry MD^{1,3} | Stephanie Gelman MD^{1,3} | Michael Pirozzi MD⁴
Valoree Stanfield MS⁵ | C. Dustin Waters PharmD, BCIDP⁶ | Nancy A. Grisel MPA
Todd J. Vento MD, MPH^{1,3}

An Implementation Roadmap for Establishing Remote Infectious Disease Specialist Support for Consultation and Antibiotic Stewardship in Resource-Limited Settings

Daniel J. Livorsi,^{1,2} Rima Abdel-Massih,^{3,4} Christopher J. Crnich,^{5,6} Elizabeth S. Dodds-Ashley,⁷ Charlesnika T. Evans,^{8,9} Cassie Cunningham Goedken,¹ Kelly L. Echevarria,¹⁰ Allison A. Kelly,^{10,11,12} S. Shaefer Spires,⁷ John J. Veillette,^{13,14} Todd J. Vento,^{13,15,16} and Robin L. P. Jump^{17,18}

¹VA Office of Rural Health, Veterans Rural Health Resource Center-Iowa City (VRHRC-IC), Iowa City Veterans Affairs Health Care System, Iowa City, Iowa, USA, ²Division of Infectious Diseases, University of Iowa Carver College of Medicine, Iowa City, Iowa, USA, ³Division of Infectious Diseases, Department of Medicine, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania, USA, ⁴Infectious Disease Connect, Inc, Pittsburgh, Pennsylvania, USA, ⁵Division of Infectious Diseases, Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ⁶William S. Middleton VA Hospital, Madison, Wisconsin, USA, ⁷Duke Center for Antimicrobial Stewardship and Infection Prevention, Durham, North Carolina, USA, ⁸Center of Innovation for Complex Chronic Healthcare (CINCCH), Edward Hines Jr. VA Medical Center, Hines, Illinois, USA, ⁹Preventive Medicine and Center for Health Services and Outcomes Research, Northwestern University, Chicago, Illinois, USA, ¹⁰Department of Veterans Affairs, Antimicrobial Stewardship Task Force, Washington, DC, USA, ¹¹Cincinnati Veterans Affairs Medical Center, Cincinnati, Ohio, USA, ¹²University of Cincinnati College of Medicine, Cincinnati, Ohio, USA, ¹³Intermountain Healthcare TeleHealth Services, Murray, Utah, USA, ¹⁴Department of Pharmacy, Intermountain Medical Center, Murray, Utah, USA, ¹⁵Division of Infectious Diseases and Clinical Epidemiology, Intermountain Medical Center, Murray, Utah, USA, ¹⁶Division of Infectious Diseases, University of Utah School of Medicine, Salt Lake City, Utah, USA, ¹⁷Geriatric Research Education and Clinical Center (GRECC) at the VA Pittsburgh Healthcare System, Pittsburgh, Pennsylvania, USA, and ¹⁸Division of Geriatric Medicine, Department of Medicine, School of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania, USA

Outcomes of patients with bacteriuria/pyuria of clinically undetermined significance (BPCUS) treated with antibiotics in 23 community hospital emergency departments

John J. Veillette PharmD^{1,2} | C. Dustin Waters PharmD³, Jared Olson PharmD^{4,5}, George Vargyas MD⁶, Emily M. Ingalls PharmD², Mary A. Hutton PharmD⁷, Nick Tinker PharmD², Stephanie S. May PharmD^{1,2}, Rachel A. Foster PharmD MPH², Jena Stallsmith PharmD MPA^{4,5} and Todd J. Vento MD MPH^{1,8}

¹Infectious Diseases Telehealth Service, Intermountain Healthcare, Murray, UT, USA, ²Department of Pharmacy, Intermountain Medical Center, Murray, UT, USA, ³Department of Pharmacy, McKay-Dee Hospital, Ogden, UT, USA, ⁴Department of Pharmacy, Primary Children's Hospital, Salt Lake City, UT, USA, ⁵Division of Infectious Diseases, Department of Pediatrics, University of Utah, Salt Lake City, UT, USA, ⁶Utah Emergency Physicians, Intermountain Medical Center Emergency Department, Murray, UT, USA, ⁷Department of Pharmacy, Utah Valley Medical Center, Provo, UT, USA and ⁸Division of Clinical Epidemiology and Infectious Diseases, Intermountain Medical Center, Murray, UT, USA

Antibiotic Stewardship Timeline

2012

Story telling / growth:

- Pharmacy support
- MD support
- Analytic support
- Across the state

2023

- 13 ID/AS PharmDs
- 23 Hosp covered
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- National leader
- System based
- Continuum

OBSTACLES



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- Lots of potential
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SCORE Grant



Successful Securing Operational Funds:

Tele ID and ASP

-  Todd Vento, MD
Medical Director
-  John Veillette, PharmD
Lead pharmacy role

Successful Securing Operational Funds:

System ASP Leadership

-  Eddie Stenehjem, MD
Medical Director
-  Whitney Buckel, PharmD
Pharmacy Manager

CDC Contract / Grant for Urgent Care:

SCORE - UC

-  Eddie Stenehjem, MD
Principle Investigator
-  Adam Hersh, MD PhD
Principle Investigator
-  Anthony Wallin, MD
Co – Investigator - UC

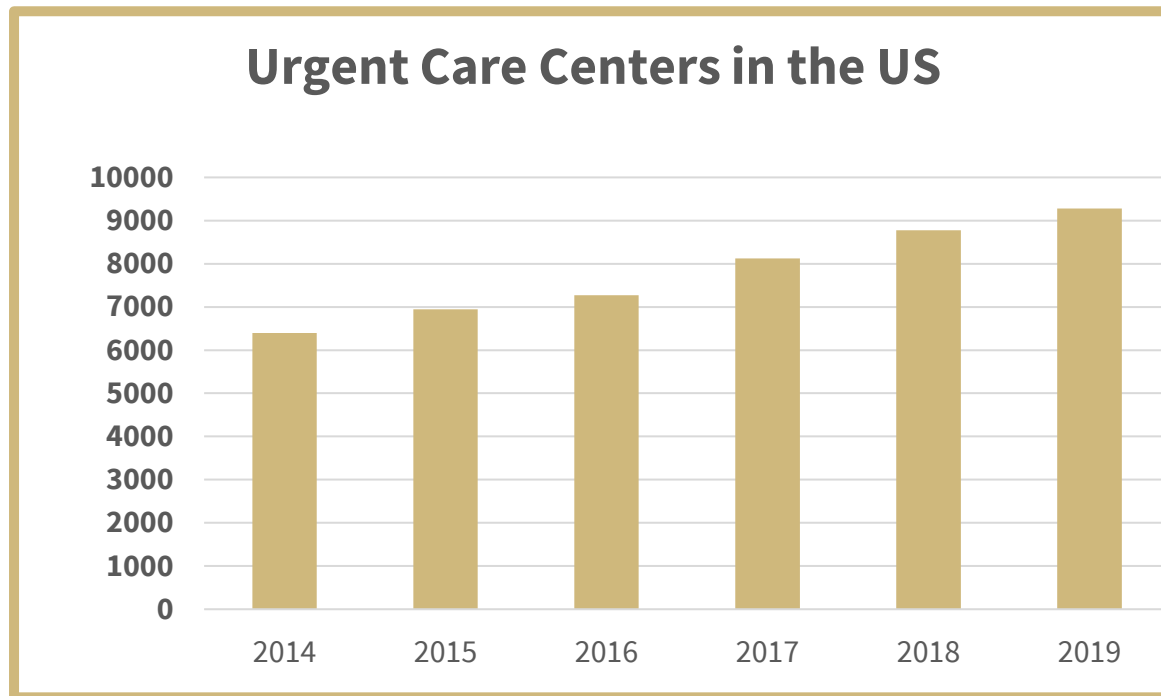
COVID

Operations / Research

- Clinical Trials
- VISION Network
- COVID Rounds
- Novel therapeutics
- Dissemination of best practices

Urgent Care Stewardship

Urgent Care is one of the fastest growing site of outpatient care delivery



Visits to UC settings are more likely to result in an inappropriate antibiotic prescription than any other outpatient setting

Stewardship strategies targeting UC are needed

*Currently, 11,150 Urgent Care Centers, 7% growth annually

Palms, et al. JAMA Intern Med. 2018 Sep 1; 178(9)

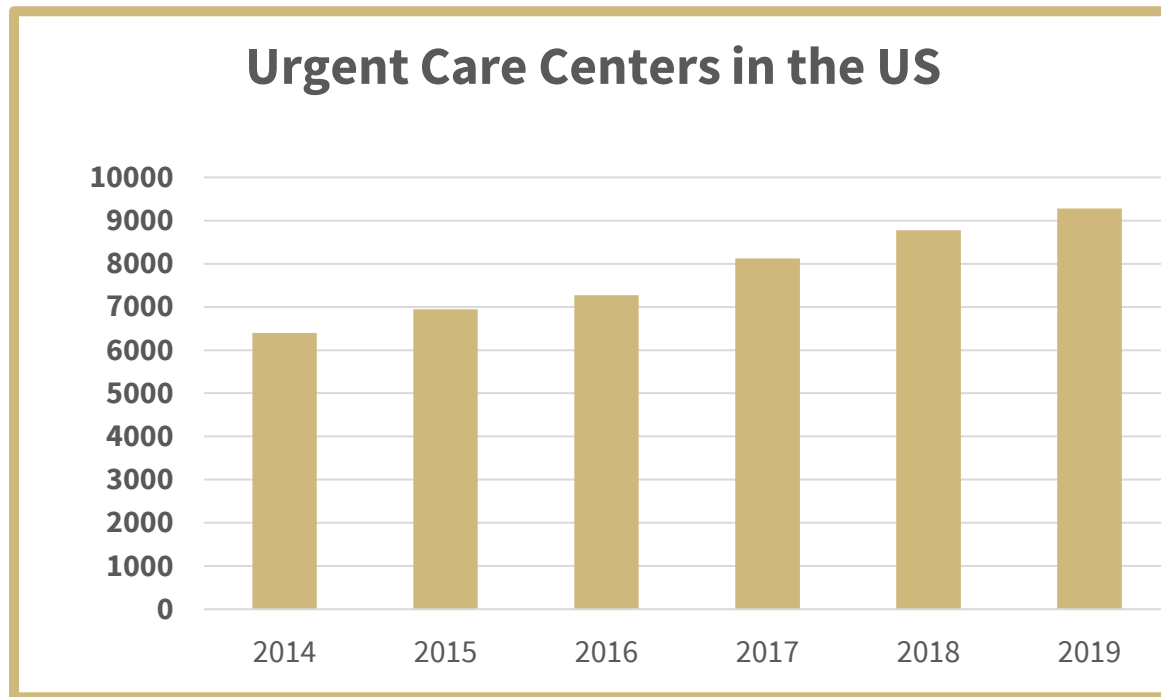


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Urgent Care Stewardship

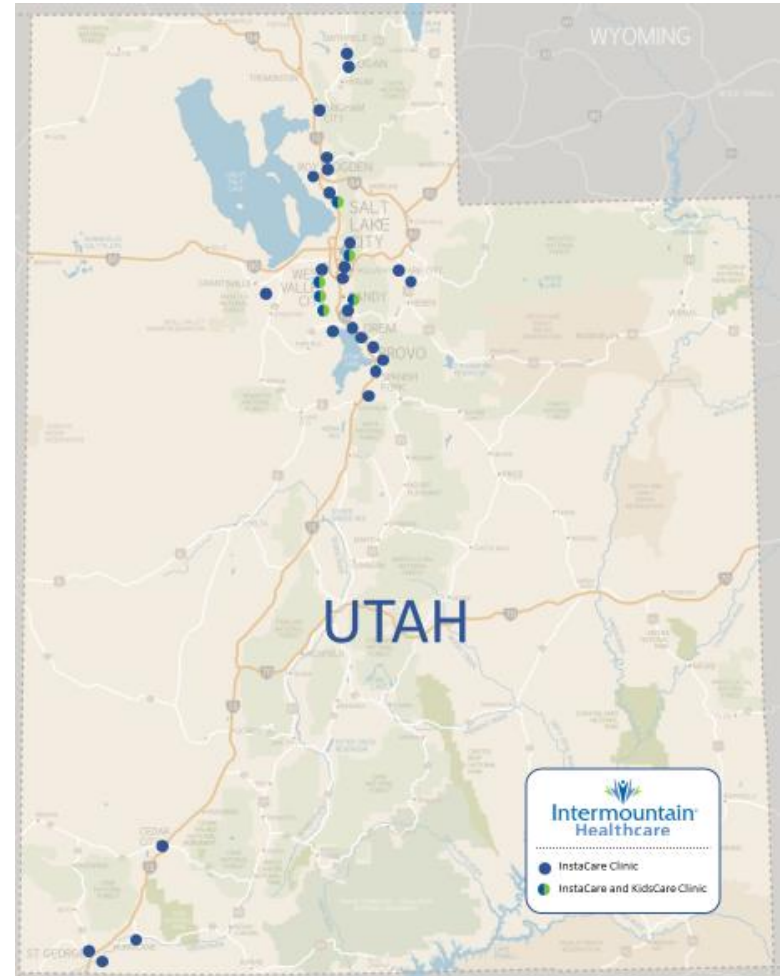
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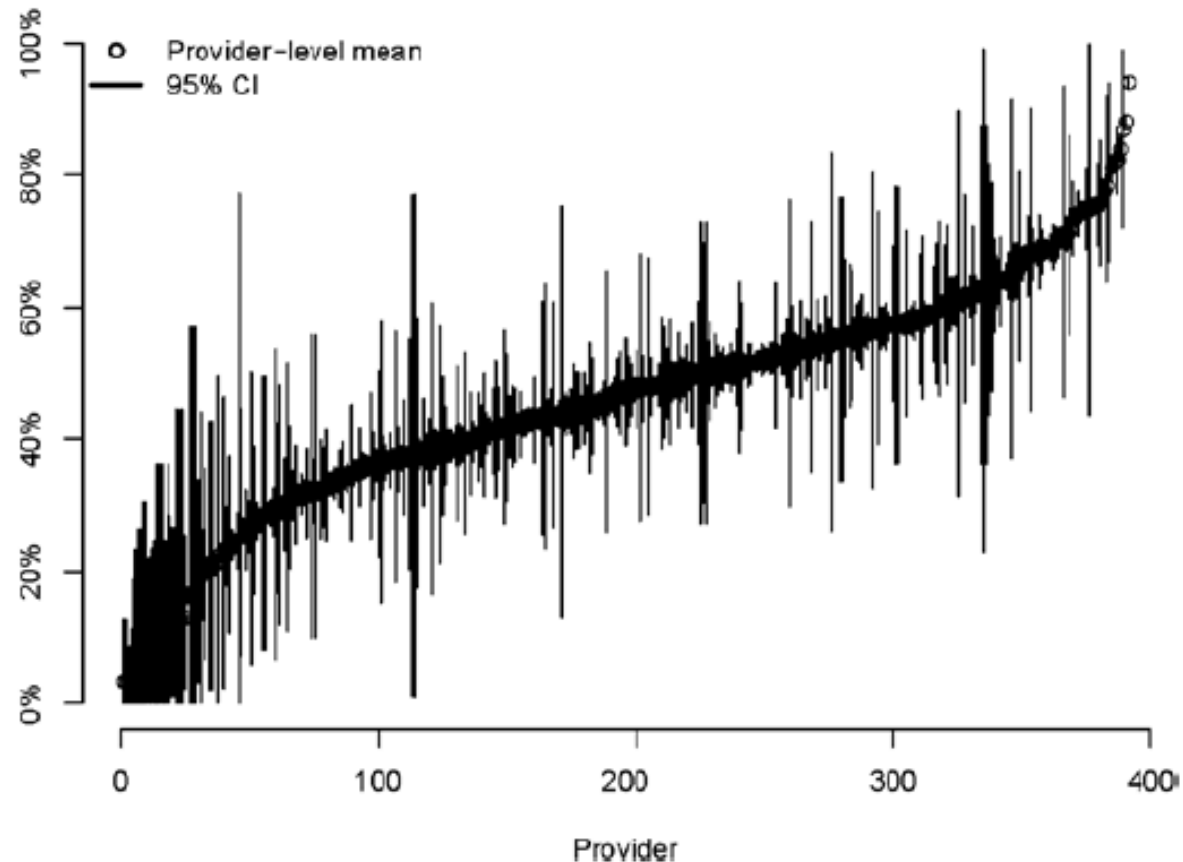
Intermountain Urgent Care Network

- 39 urgent care clinics
- 90% of Utah residents live within 10 mins of an Urgent Care Clinic
- No formal antibiotic stewardship structure
- >50% of outpatient antibiotics in Intermountain Health originate in Urgent Care



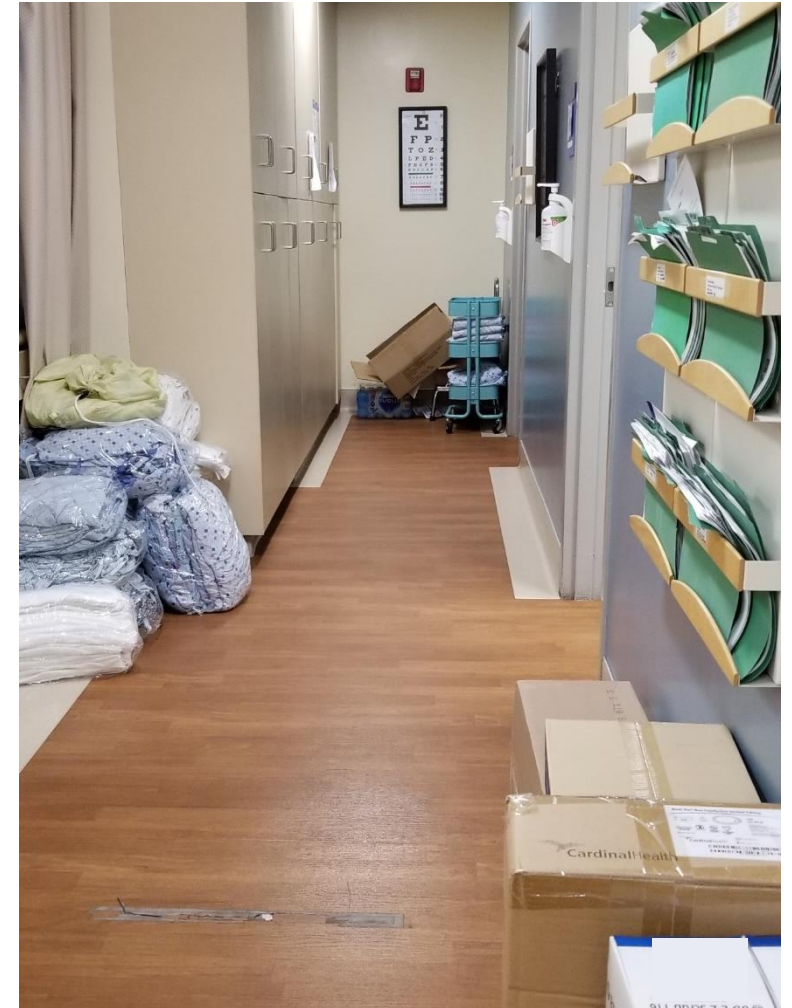
Is there a need?

Respiratory Antibiotic Prescribing Rates



“Look and See” Phase

Clinic Flow Mapping Professional Conversations Strategies



Field Interviews – 13 Clinicians, 14 Staff, 20 Patients

Knowledge, Attitudes, & Behaviors

No expectation of an RX;
highly valued receiving
education about symptom
management

Aware of guidelines;
patient context
affects adherence

No data linking
adverse events to
inappropriate
prescribing, poor
metrics

Not enough time and
patients do not
understand

Patients all
demand/want
antibiotics

Clinicians
incentivized to
prescribe an
antibiotic



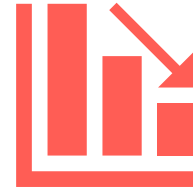
5 Categories for Stewardship Interventions



Education:
Clinicians and
Patients



Electronic
Health Record
Tools



Provider
Benchmarking
Dashboard



Media



Organizational
Alignment

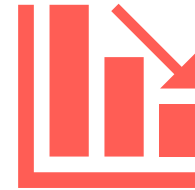
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Organizational
Alignment



- Clinical guidelines: sinusitis, otitis media, pharyngitis
- Monthly talks by ID experts
- Patient education / symptomatic therapies

DIAGNOSIS AND MANAGEMENT OF Streptococcal Pharyngitis
2019 Update

Why Focus on STREPTOCOCCAL PHARYNGITIS?

- Antibiotic prescribing for acute pharyngitis has dropped, but further declines in antibiotic use are needed. Approximately 17% of children presenting to medical visits with sore throats in group A streptococcal positive, but antibiotic use will be reduced about 50% of the time based on 2013 national data. For adults, approximately 10% use group A streptococcal positive, and 70% of those still get a throat infection or penicillin or amoxicillin.
- Necessary antibiotic prescribing is costly and dangerous. From 1997 to 2010, the frequency of antibiotic use in primary care visits with sore throats rose about 300% in the United States. Antibiotics can also be expensive for patients and can have negative side effects. Between 10% and 20% of patients on antibiotics develop diarrhea, and 1 in 1,000 will see an emergency department for antibiotic-associated diarrhea.

KEY POINTS

- Accurate diagnosis and appropriate treatment can prevent serious complications. When using a penicillin, amoxicillin, or penicillin V, ensure the patient has no penicillin allergy and that the antibiotic is taken as directed. Penicillin also does not suppress viral and respiratory bacterial responses and signs in the patient.
- Differentiating between a patient with an acute strep infection and a patient who is a strep carrier with an acute viral pharyngitis is challenging. Treat patients for acute strep infection unless there are only minimal signs of infection of antibiotic. Approximately 10% of streptococcal throat infections may be strep carriers, and a throat culture during a cold flare may yield positive results, but not require antibiotic treatment. Prescribing upon antibiotic will not help these patients and can contribute to antibiotic resistance.
- For adult patients, routine overnight cultures after a negative rapid strep test are unnecessary to avoid unnecessary antibiotic use, as the acute diagnosis from a rapid strep test is highly sensitive and specific. In the absence of clinical signs of infection, also consider strep culture if the patient has a recent history of strep infection, close contact with someone with strep infection, family members with strep, etc.

FACT SHEET FOR PATIENTS AND FAMILIES
Intermountain
HealthCare

Treating Your Cold, Flu, and Other Symptoms
(for those 12 years of age and older)

Here are some over-the-counter medicines and other steps to treat your symptoms. Have your medical provider or pharmacist check the boxes for treatment that will work best for you. Do not use if the box is not checked.

If you have...	Use (active ingredients)	Search (brand)	Comments
Adults, girls, boys	Acetaminophen Ibuprofen	Tylenol Advil, Motrin	
Sore throat	Throat lozenges Throat spray	Almay Cepacol Throat Lozenges Chloraseptic Spray	
Cough	Guafenesin Dextromethorphan Vagotone Humectant	Mucinex Robitussin, Delsym Vicks Vapozer	Helps thin mucus Cough suppressant Clears other each use
Stuffy nose	Phenylephrine or Pseudoephedrine Oxymetazoline nasal spray	Advil, Zicam Neo-Synephrine	Do not use for more than 3 days Do not use for more than 3 days
Stuffy nose with sneezing, itchy eyes, post-nasal drip	Nasal Steroid Irrigation Fluticasone, triamcinolone, or corticosteroid Ephedrine, pseudoephedrine, or decongestant Fluticasone, triamcinolone, or corticosteroid Asthma inhalers, Guafenesin, and Phenylephrine Guafenesin, Pseudoephedrine, and Dextromethorphan Asthma inhalers Asthma inhalers and Phenylephrine	Neti Pot Zyrtec, Allegra, Claritin, Allegra Chlorflex, Clear Breaths, Benadryl Flonase, Nasacort, Rinocort Multiple products available, check active ingredients	Non-steroid antihistamines Antihistamines that can cause drowsiness Steroid nasal spray
Other	Aspirin Ibuprofen Phenylephrine	Dyren-10	

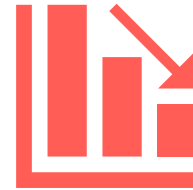
5 Categories for Stewardship Interventions



Education:
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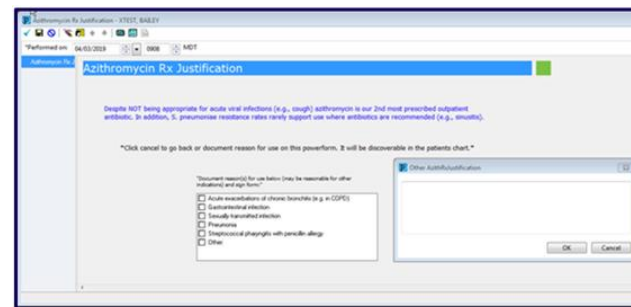
Media



Organizational
Alignment



- Templated notes
- Azithromycin alert
- Delayed prescriptions



5 Categories for Stewardship Interventions



Education:
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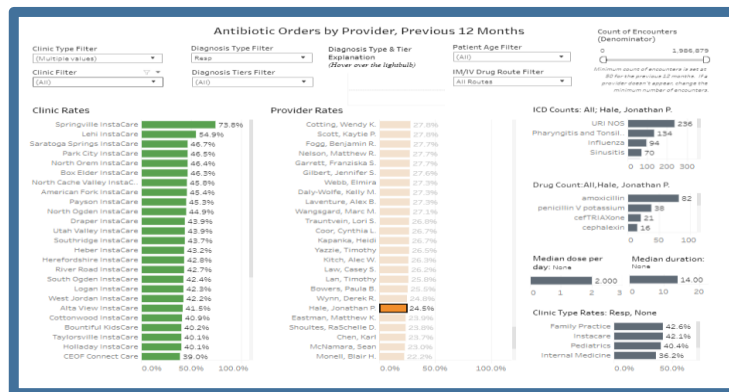
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Media



Organizational
Alignment



- Transparent, real-time prescribing data
- Clinician, clinic, system level data
- Focused on respiratory prescribing

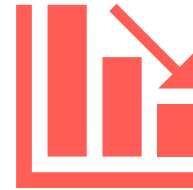
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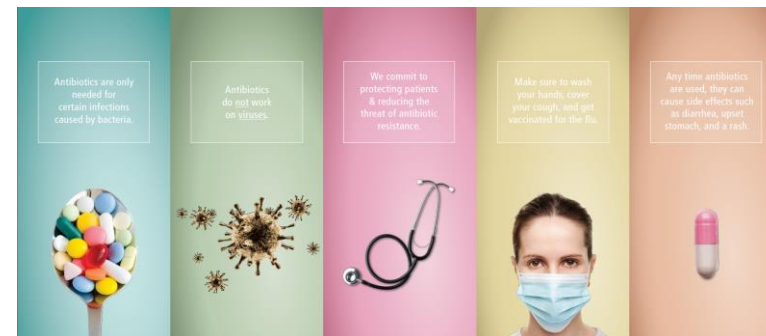
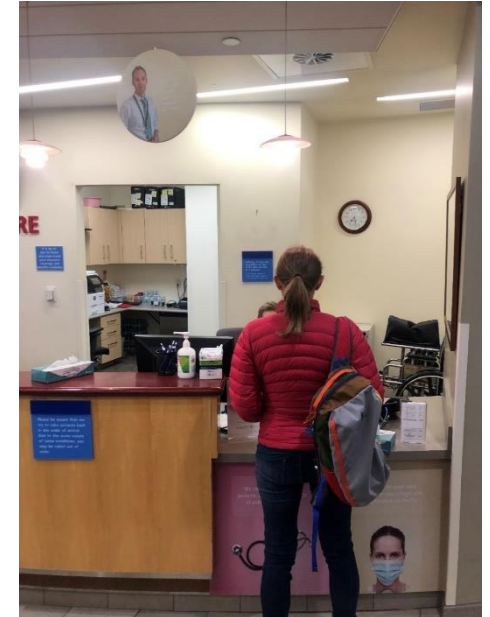
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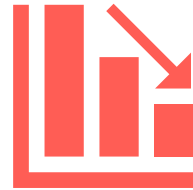
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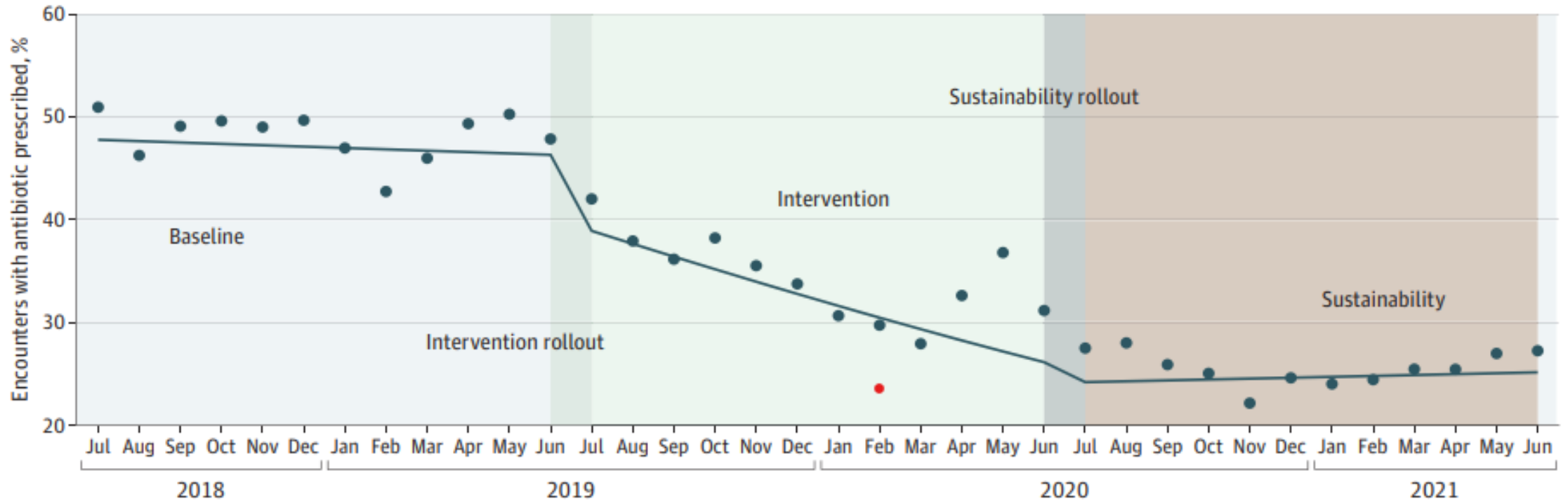
- Aligning incentives
- Quality measures
- Comp reform

Monthly Percentage of Respiratory Visits with an Antibiotic Prescribed

ALL clinics improved
95% of clinicians improved

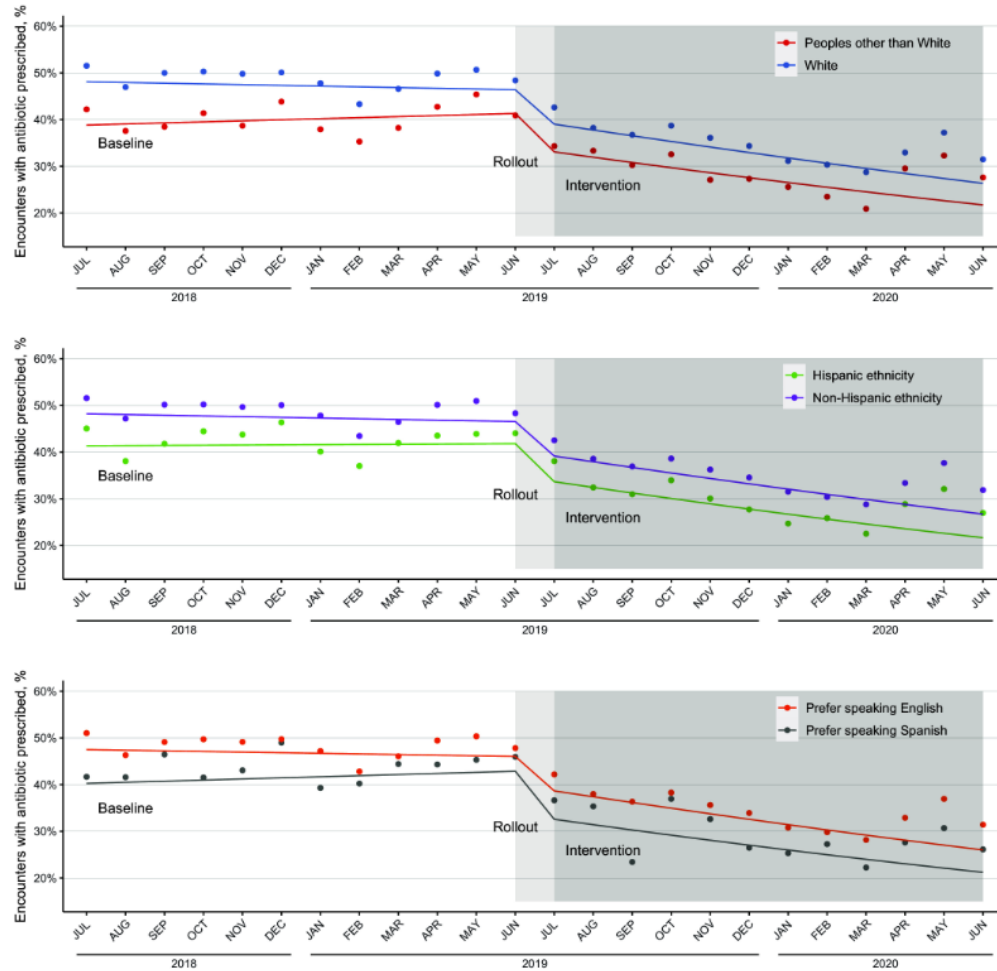
Figure. Fitted Interrupted Time Series Models for Baseline, Intervention, and Sustainability Periods

A All respiratory encounters



Antibiotic Prescribing by Race, Ethnicity and Language

Figure 1.



Platform to study and improve care

Ambulatory Antibiotic Stewardship Platform

Urgent Care Respiratory Prescribing
Re-SCORE

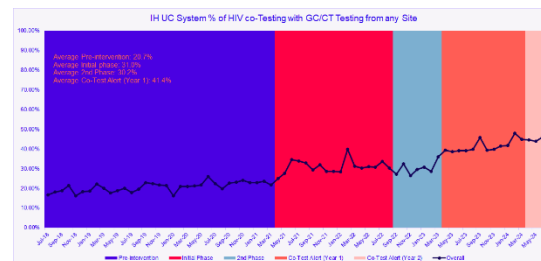
Urgent Care HIV Testing
SIDM

Primary Care Duration of Therapy
QI - LHS

Pediatric Respiratory Stewardship
PICORI/HSII

Ear Infection Treatment
PICORI

ePNA in Urgent Care
NIH



Antibiotic Stewardship Timeline

2012

Story telling / growth:

Pharmacy support
MD support
Analytic support
Across the state

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23 Hosp covered
Tele program
National leader
System based
Continuum

OBSTACLES

2012
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Lots of potential
"Committee"

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Successful Securing
Operational Funds:

Tele ID and ASP



Todd Vento, MD
Medical Director



John Veillette, PharmD
Lead pharmacy role

Successful Securing
Operational Funds:

System ASP Leadership



Eddie Stenehjem, MD
Medical Director



Whitney Buckel, PharmD
Pharmacy Manager

CDC Contract / Grant
for Urgent Care:

SCORE - UC



Eddie Stenehjem, MD
Principle Investigator



Adam Hersh, MD PhD
Principle Investigator



Anthony Wallin, MD
Co – Investigator - UC

COVID

Operations / Research

Clinical Trials
VISION Network
COVID Rounds
Novel therapeutics
Dissemination of best practices

Lastly, COVID Work

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Effectiveness of Covid-19 Vaccines in Ambulatory and Inpatient Care Settings

M.G. Thompson, E. Stenehjem, S. Grannis, S.W. Ball, A.L. Naleway, T.C. Ong, M.B. DeSilva, K. Natarajan, C.H. Bozio, N. Lewis, K. Dascomb, B.E. Dixon, R.J. Birch, S.A. Irving, S. Rao, E. Kharbanda, J. Han, S. Reynolds, K. Goddard, N. Grisel, W.F. Fadel, M.E. Levy, J. Ferdinands, B. Fireman, J. Arndorfer, N.R. Valvi, E.A. Rowley, P. Patel, O. Zerbo, E.P. Griggs, R.M. Porter, M. Demarco, L. Blanton, A. Steffens, Y. Zhuang, N. Olson, M. Barron, P. Shifflett, S.J. Schrag, J.R. Verani, A. Fry, M. Gaglani, E. Azziz-Baumgartner, and N.P. Klein

Journal of
Hospital Medicine  Society of Hospital Medicine

Effect of tele-COVID rounds and a tele-stewardship intervention on antibiotic use in COVID-19 patients admitted to 17 small community hospitals

Stephanie Shealy PharmD, BCIDP^{1,2}   | John J. Veillette PharmD, BCIDP^{1,2} |
Brandon J. Webb MD¹  | Edward A. Stenehjem MD, MsC³ |
Steven K. Throneberry MD^{1,3} | Stephanie Gelman MD^{1,3} | Michael Pirozzi MD⁴ |
Valoree Stanfield MS⁵ | C. Dustin Waters PharmD, BCIDP⁶ | Nancy A. Grisel MPA⁵ |
Todd J. Vento MD, MPH^{1,3}

RESEARCH ARTICLE

Simple scoring tool to estimate risk of hospitalization and mortality in ambulatory and emergency department patients with COVID-19

Brandon J. Webb^{1,2*}, Nicholas M. Levin³, Nancy Grisel⁴, Samuel M. Brown⁵, Ithan D. Peltan⁵, Emily S. Spivak⁶, Mark Shah⁷, Eddie Stenehjem^{1,2,8}, Joseph Bledsoe^{7,9}

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Open Forum Infectious Diseases

MAJOR ARTICLE



Real-world Effectiveness and Tolerability of Monoclonal Antibody Therapy for Ambulatory Patients With Early COVID-19

Brandon J. Webb,^{1,2,*} Whitney Buckel,³ Todd Vento,¹ Allison M. Butler,⁴ Nancy Grisel,⁴ Samuel M. Brown,⁵ Ithan D. Peltan,⁵ Emily S. Spivak,⁶ Mark Shah,⁷ Theadora Sakata,⁸ Anthony Wallin,⁸ Eddie Stenehjem,^{1,2,9} Greg Poulsen,¹⁰ and Joseph Bledsoe^{7,11}

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To be clear....I don't consider myself:

- Health Services Researcher
- Healthcare Delivery System Researcher
- Care Delivery Science Researcher
- Implementation Science Researcher
- Dissemination Science Researcher
- Quality Improvement



My approach to research in a LHS

1. Identify an area that needs evaluation / exploration / intervention that is within scope of your leadership role, **and you are uniquely poised to address**
2. Obtain external funding for the work (resources, prioritization, data)
3. Implement the program and study the impact
4. When grant runs out, convince leadership to operationalize and sustain the program (have this conversation early and often)
5. Use the research to develop a framework/infrastructure for continued work
6. Repeat



Concluding thoughts

1. Integrating research into clinical operations and a health system can be very impactful
2. Develop a niche – forge your own path
3. Skills you will need:
 - » Leadership skills are required
 - » A background in implementation science and statistics is helpful
 - » Clinical expertise
 - » A willingness to show up and get your hands dirty
 - » Develop a team! You'll need help

Thank you!

Eddie Stenehjem, MD MSc

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School of Medicine

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