



# **TeleMedicine Based Anti-Microbial Stewardship**

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## TeleHealth and TeleMedicine

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**TeleMedicine:** Providing direct patient care over a distance using real time audio/video technologies.

**TeleHealth:** is the delivery of health-related services and information via telecommunications technologies.

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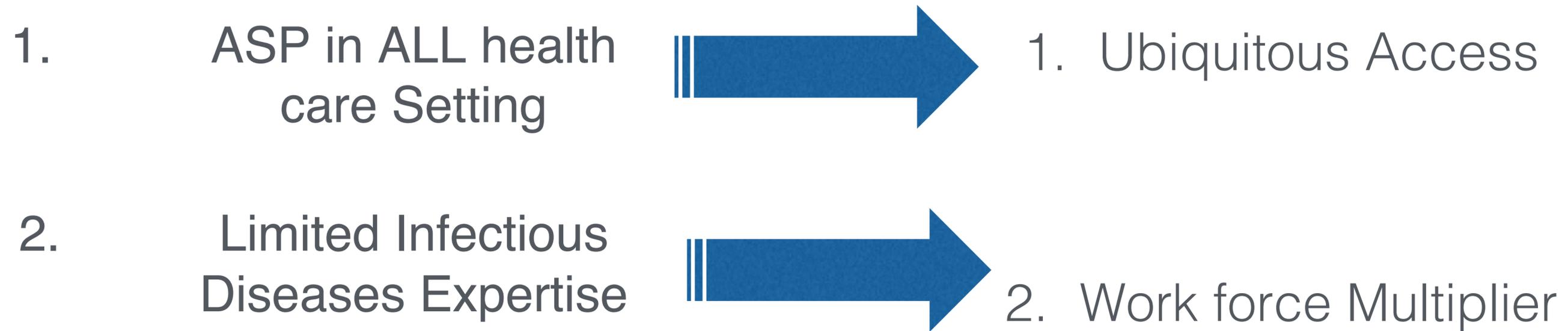
## THE Problem

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1. We need to increase the application of Anti-microbial Stewardship in ALL health care settings
    - A. Hospitals
    - B. Skilled Nursing Care facilities
    - C. Long Term Care facilities
    - D. Out patient clinics
  
  2. Limited Infectious Diseases Physician Expertise
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# The Transformative Power Of Technology

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## **THE hospitals**

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Hospital 1 is an 83-bed acute care hospital

Hospital 2 is a 78- bed acute care hospital

Hospital # 1 has not had an Infectious Diseases physician on staff since 2000

Hospital 2 has never had an Infectious Diseases physician on staff

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# Program Development

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A Telemedicine based Anti-microbial stewardship program [ASP]

1. Established an ASP committee
  2. Reviewed current hospital wide prescribing data
  3. Reviewed the Anti-biogram
  4. Identified problems
  5. Developed and implemented interventions
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## TeleMedicine Based ASP

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- Anti-infective formulary development
  - Targeted oversight of antimicrobial usage
  - An IV to PO conversion program
  - Extensive provider based education programs
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## TeleMedicine Based ASP

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The Operational Aspects of the Telemedicine ASP:

1. Pharmacist reviews all anti-microbial orders daily with focus on antimicrobials selected for review by the ASP committee
  2. A daily telemedicine conference between the pharmacist and the infectious diseases physician occurs to review the cases
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## TeleMedicine Based ASP

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The Operational Aspects of the Telemedicine ASP:

3. Cases that require review are identified
  4. The infectious diseases physician will contact the prescribing physician to discuss the case
  5. If requested by the prescribing physician or if there is a difference in opinion, an infectious diseases consultation is conducted via telemedicine.
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## TeleMedicine Based ASP

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- In addition, a scheduled multi-disciplinary rounds via telemedicine occur daily or bi-weekly to discuss all ASP issues
  - The director of pharmacy, the antimicrobial pharmacist, the microbiologist, the infection control practitioner and multiple physicians attend rounds
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## TeleMedicine Based ASP

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- The ASP committee identified Fluoroquinolone and Piperacillin/tazobactam were overused in the hospital
  - Fluoroquinolones were overused for cystitis and community acquired pneumonia
  - Piperacillin/tazobactam was being overused in a variety of patients
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## TeleMedicine Based ASP

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- An educational campaign was initiated to educate the Medical staff physician on appropriate use of anti-bacterials.
    - Educational programs conducted:
      - Noon Conferences
      - Staff meetings Emergency Department, Medicine and Surgery
      - Case Review Conference
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## TeleMedicine Based ASP

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Mantra –

Change MUST come through Education NOT simply through restrictions

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## TeleMedicine Based ASP

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### Hospital # 1

| Medication              | 2008     | 2011     | % Change |
|-------------------------|----------|----------|----------|
| Flouoroquinolones       | \$10,169 | \$ 2,359 | - 77%    |
|                         |          |          |          |
| Piperacillin/Tazobactam | \$51,363 | \$14,624 | - 72%    |
|                         |          |          |          |

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# TeleMedicine Based ASP

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## Hospital # 2

86% REDUCTION in the use of Flouoroquinolones and  
Piperacillin/Tazobactam  
2013 to 2014

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## TeleMedicine Based ASP

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1. Effectively develop, implement and grow an ASP via TeleMedicine
  2. Quantifiable and sustainable change in prescribing habits
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# Telemedicine-Based Antimicrobial Stewardship Program Improves Prescribing, Reduces Bacterial Resistance to Antibiotics at Rural Hospital

**Summary** - Sonoma Valley Hospital (an 83-bed rural hospital) operates a telemedicine-based antimicrobial stewardship program designed to improve prescribing of—and reduce bacterial resistance to—antibiotics, as required by California law. Key elements include ongoing monitoring of prescribing habits combined with various educational initiatives, including daily reviews of orders for certain classes of drugs, weekly infectious disease rounds, and periodic presentations and discussion at department meetings. All program elements are delivered via telemedicine by an offsite infectious disease specialist in collaboration with a hospital-based team of physicians, pharmacists, and other staff. The program has increased physician requests to have cultures analyzed and reduced their use of targeted classes of antibiotics, leading to less bacterial resistance to these drugs.

**Evidence Rating** Moderate: The evidence consists of pre- and post-implementation comparisons of the number of cultures sent for identification of the underlying organism, annual hospital expenditures on two classes of antibiotics (with accompanying estimates of changes in use based on these data), and susceptibility of bacteria to the targeted drugs.

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# TeleHealth and Anti-Microbial Stewardship

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## TeleHealth and TeleMedicine

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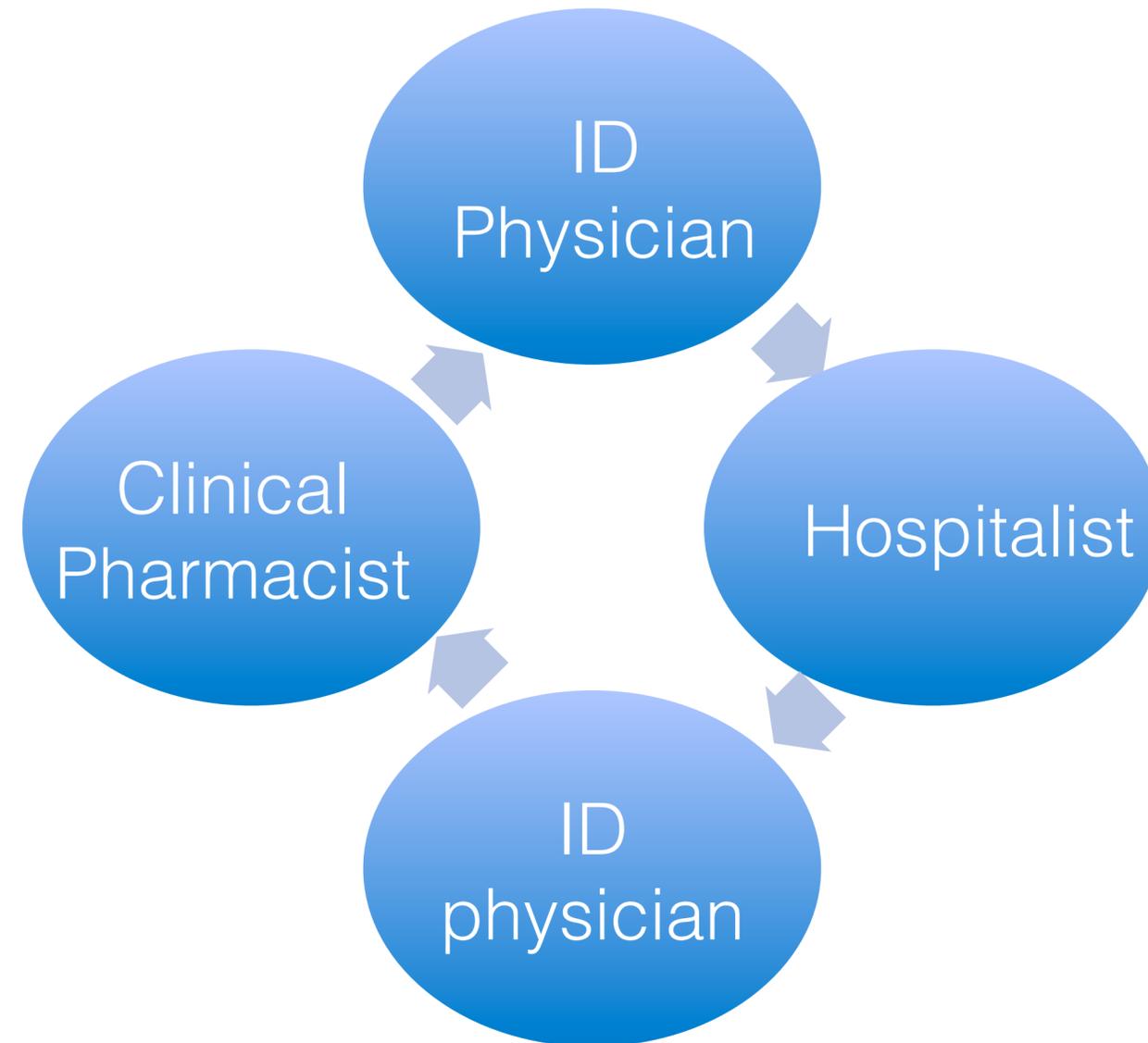
## TeleHealth and ASP

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- Communication tools
  - Direct messaging
  - Collecting and Reviewing data
  - Monitoring an intervention or identifying an issue
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## TeleHealth and ASP

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## TeleHealth and ASP

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Practice SafeText

# TeleHealth and ASP



## TeleHealth and ASP

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- Connected communications
  - Integrated Program
  - Infectious Diseases presence
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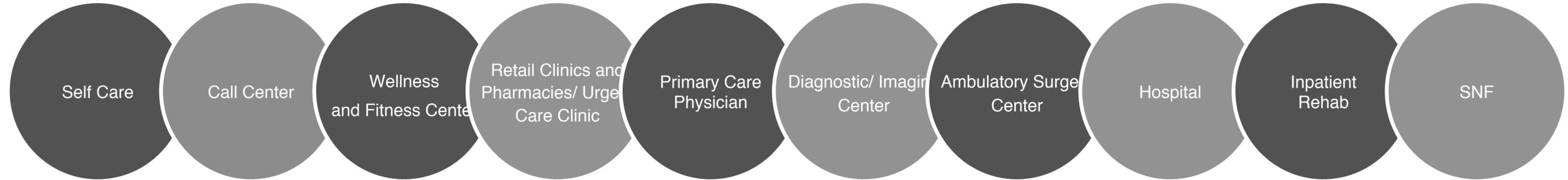
# TeleMedicine Based Anti-Microbial Stewardship

ID Physician Directed • Work force Multiplier • Key Differentiator

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## Establishing Infectious Diseases Physicians Throughout the Care Continuum

### Care Continuum



**Cost Of Care**

**Ease of Access**

**Infectious Diseases “Brand” Distribution Platform**

# Thank You



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