# Database & Methods Cyberseminar Series

## Using CDW Microbiology and Pharmacy Data in Outcomes Research

**Charlesnika T. Evans, PhD, MPH**
Research Health Scientist
Center of Innovation for Complex Chronic Care (CINCCH)
Hines VA

**Makoto Jones, MD, MSCI**
Center of Innovation, Informatics, Decision Enhancement, and Surveillance (IDEAS)
Salt Lake City VA

VIReC
RESEARCHERS' GUIDE TO VA DATA

# Database & Methods Cyberseminar Series

- Informational seminars to help VA researchers access and use VA databases.
- Topics
- VA data sources & data access systems
- Application of VA data to research and quality improvement questions
- Limitations of secondary data use
- Resources to support VA data use

# FY '17 Database & Methods Schedule

First Monday of the month* | 1:00pm-2:00pm ET

| Date | Topic |
|---|---|
| 10/3/16 | Overview of VA Data & Research Uses |
| 11/7/2016 | Requesting Access to VA Data |
| 12/5/2016 | Healthcare Utilization with MedSAS & CDW |
| 1/9/2017 | VA Medicare Data (VA/CMS) |
| 2/6/2017 | Measuring & Assessing Utilization |
| 3/6/2017 | Mortality Ascertainment & Cause of Death |
| 4/3/2017 | Assessing Race & Ethnicity |
| 6/5/2017 | Pharmacy Data |
| 7/10/2017 | CAPRI/VistAWeb for EHR Access |
| 8/7/2017 | Comorbidity Measures Using VA and CMS Data |
| 8/21/2017 | Advanced Topics in Comorbidity Measures |
| 9/11/2017 | CDW microbiology, lab, & pharmacy domains |

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# Today's objectives

- To provide an overview of VA CDW Microbiology and Pharmacy domains
- To provide examples of how specific data elements can be used for research questions
- To describe limitations and strengths of these data

# Acknowledgments


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- VA HSRD CDA 10-030 funding for Makoto Jones
- VA HSR&D, RR&D Services
- VA QUERI CARRIAGE

# Agenda for Presentation

- Overview of Microbiology and Pharmacy domains
- Two examples
- Limitations and strengths
- Other Resources

# Poll #1: About you

- What is your role in VA research?
  - Research Investigator/PI
  - Data Manager/Analyst
  - Project Manager/Coordinator/Assistant
  - VA Program Office or Operations Staff
  - Other (please specify)

# Poll #2: Your experience with microbiology data

What is your experience with CDW Lab Microbiology data?

- Not worked with it at all
- I have worked with CDW Micro 1.0, but not the latest version (Micro 2.0)
- I have been working with CDW Micro 2.0 but I am a novice
- I am beyond a beginner in using CDW Micro 2.0 data

# What's new in Microbiology 2.0?

- Microbiology 1.0 was the first available national data set on select microbiology data (since Summer/Fall 2012)
  - Only included bacteriology
  - Only included organisms with antibiotic susceptibility test results
    - Difficult to determine negative cultures
- Microbiology 2.0 became available in 2015 and includes more microbiology test data:
  - Includes organisms without susceptibilities
  - Virology
  - Mycology
  - Parasitology
  - Does not include mycobacteriology organisms

# What does Lab Microbiology 2.0 include?

- Individual-level data from VistA microbiology package on the test and result
- Data from 10/1/1999 - present is available and updated regularly
- All microbiology data
  - Variables of interest include free-text fields (e.g. ‘Organism’ or ‘CollectionSample’)
  - Variable interpretation of data model by facility, resulting in differences in where microbiologic data are stored
  - Examples of tests that may be stored in different places (ie. PCR tests, antibody tests)
  - Examples of organisms that may be found elsewhere (ie. *Clostridium difficile*, methicillin-resistant *Staphylococcus aureus* (MRSA) identified by nasal swabs via PCR)

# Lab Microbiology 2.0 Sample Schema

DIM TABLES
*"Supporting" tables*

FACT TABLES
*"Parent" tables*

**Dim.Antibiotic**

| | |
|---|---|
| AntibioticSID (PK) | int |
| AntibioticIEN | varchar(50) |
| Sta3n | smallint |
| Antibiotic | varchar(50) |
| AntibioticAbbreviation | varchar(50) |
| … (more) … | |
| NationalVALabCodeSID (FK) | int |
| NationalVALabCode | varchar(100) |

FileManFileNumber: 62.06
FileManFileName: ANTIMICROBIAL SUSCEPT

**Dim.Organism**

| | |
|---|---|
| OrganismSID (PK) | int |
| OrganismIEN | varchar(50) |
| Sta3n | smallint |
| Organism | varchar(100) |
| OrganismCategory | varchar(50) |
| SNOMEDCode | varchar(50) |
| GramStain | varchar(50) |
| … (more) … | |

FileManFileNumber: 61.2
FileManFileName: ETIOLOGY FIELD

**Micro.Microbiology**

| | |
|---|---|
| MicrobiologySID (PK) | bigint ) |
| Sta3n | smallint |
| LongAccessionNumberUI | varchar(50) |
| MicrobiologyIEN | varchar(50) |
| … (more) … | |
| PatientSID (FK) | int |
| StaffSID | varchar(50) |
| SpecimenTakenDateTime | datetime2(0) |
| TopographySID (FK) | int |
| CollectionSampleSID (FK) | int |
| … (more) … | |

FileManFileNumber: 63.05
FileManFileName: MICROBIOLOGY

**Micro.AntibioticSensitivity**

| | |
|---|---|
| AntibioticSensitivitySID (PK) | bigint |
| MicrobiologySID (FK) | bigint |
| Sta3n | smallint |
| PatientSID (FK) | int |
| … (more) … | |
| OrderingInstitutionSID (FK) | int |
| CollectingInstitutionSID (FK) | int |
| SpecimenTakenDateTime | datetime2(0) |
| OrganismSID (FK) | int |
| OrganismQuantity | varchar(50) |
| AntibioticSID (FK) | int |
| AntibioticSensitivityValue | varchar(50) |
| AntibioticSensitivityInterpretation | varchar(50) |
| Suppression | varchar(50) |

FileManFileNumber: 63.3
FileManFileName: ORGANISM

**Micro.Virology**

| | |
|---|---|
| VirologySID (PK) | bigint |
| LabSubjectSID (FK) | int |
| MicrobiologySID (FK) | bigint |
| MicrobiologyIEN | varchar(50) |
| VirologyIEN | varchar(50) |
| Sta3n | smallint |
| PatientSID (FK) | int |
| … (more) … | |
| SpecimenTakenDateTime | datetime2(0) |
| IsolateID | varchar(50) |
| VirusOrganismSID (FK) | int |

FileManFileNumber: 63.43
FileManFileName: VIRUS

Dotted lines show linking

***There are several more fact tables, including Micro.Mycology, Micro.Parasitology, etc. All of these tables link to Micro.Microbiology using MicrobiologySID***

https://vaww.cdw.va.gov/metadata/Reports/ERDiagramsOfViews/Lab%20Microbiology_3342.jpg

# Micro.Microbiology

- Contains data on all the specimens collected that are located in the Microbiology subsection of VistA
  - Previously, only bacteriology, but now includes virology, parasitology, etc.
- Specimen date and time information (e.g. collected, received, reported), accession, station
- Patient and staff unique identifiers (e.g. ‘PatientSID’)
- Additional variables include foreign keys (FK) that link to associated microbiology tables or dim tables
- ‘MicrobiologySID’ is the primary key (PK)
  - A unique count of this ID gives you the number of microbiology cultures for the time frame and cohort

# Dimension Tables

- There are many dimension or dim tables linked to Lab Microbiology
  - **Antibiotic, Organism, Topography, CollectionSample**, etc.
- Can be viewed without a cohort, because they do not contain any sensitive information (e.g. ‘PatientSID’)
  - Can be viewed in VINCI in the folder named CDWWork
- Schema for dimension tables is Dim, e.g. Dim.Organism

# Examples of data use

- Surveillance of select bacterial infections/colonization or drug resistance
  - Suda et al. Bacterial susceptibility patterns in patients with spinal cord injury and disorder (SCI/D): An opportunity for customized stewardship tools. *Spinal Cord*, 2016;54:1001-1009
  - Fitzpatrick M et al. Changes in bacterial epidemiology and antibiotic resistance among Veterans with spinal cord injury/disorder over the past 9 years. *J Spinal Cord Med*, 2017;15:1-9
- Risk factors, processes of care, treatment, and outcomes for select bacterial infections/colonization or drug resistance
  - Goto et al. Association of evidence-based care processes with mortality in *Staphylococcus aureus* Bacteremia at Veterans Health Administration Hospitals, 2003-2014. *JAMA Internal Med*, 2017, doi:10.1001/jamainternmed.2017.3958
  - Nelson et al. Attributable mortality of healthcare-associated infections due to multidrug-resistant gram-negative bacteria and methicillin-resistant *Staphylococcus aureus. Infection Control Hosp Epi,* 2017;38:848-856

# Poll #3: Your pharmacy data experience

- What is your experience with CDW Pharmacy Domains data?
  - Not worked with it at all
  - I have worked with CDW pharmacy domains but I am a novice
  - I am beyond a beginner in using CDW pharmacy domains

# Pharmacy domains

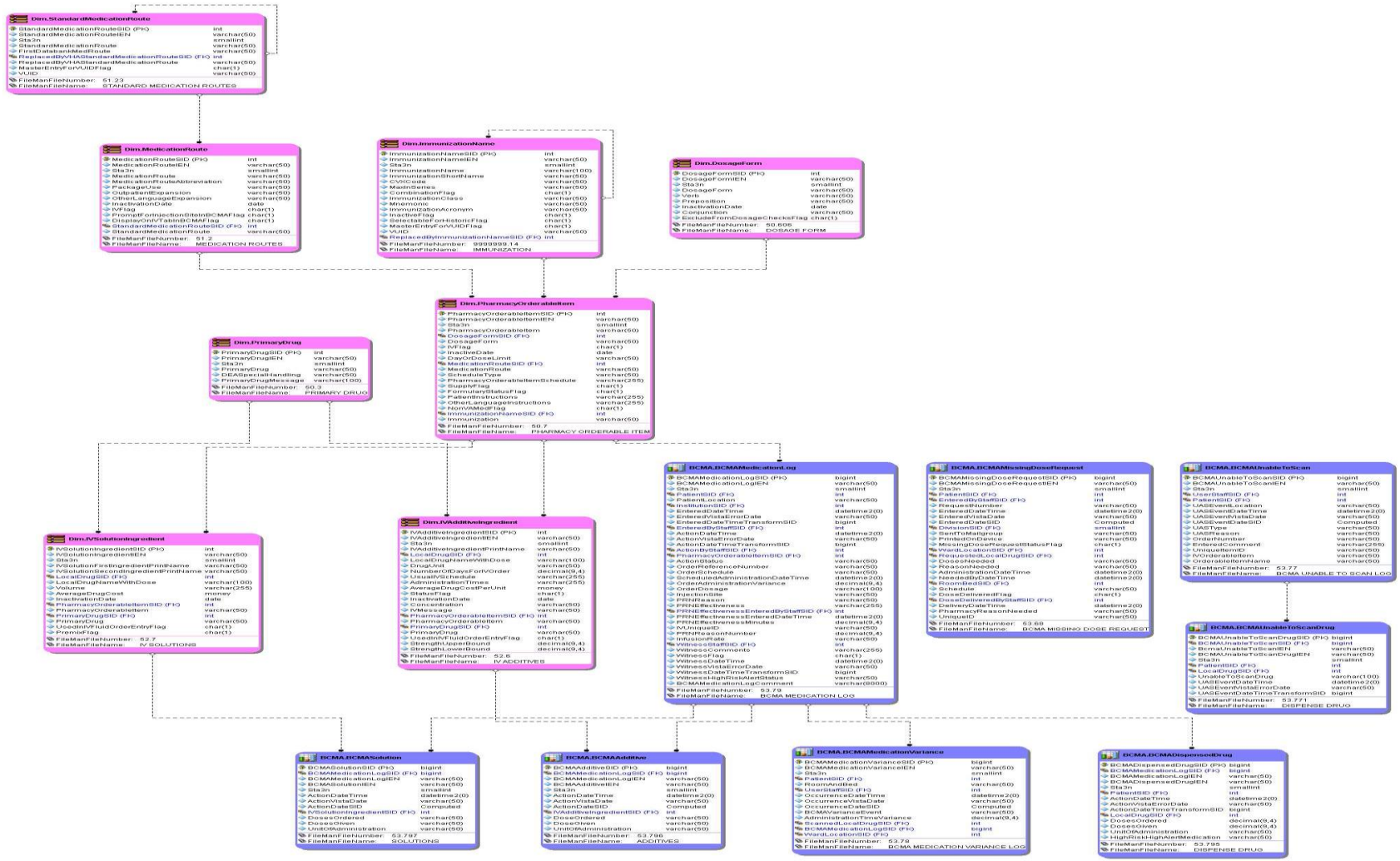
- Production – Updated Nightly
  - Pharmacy Bar Code Medication Management (BCMA) – inpatient
  - Pharmacy Outpatient
  - Pharmacy Patient
  - Purchase Care (formerly fee)

# Pharmacy domains

- Raw – Updated every 3 months
  - RxUD (Unit Dose)
  - Intravenous Meds (IV)
  - May help with medications that you might anticipate would be in BCMA but are actually not

# Example of a Pharmacy Domain

## Pharmacy Bar Code Medication Management (BCMA) Schema



https://vaww.cdw.va.gov/metadata/Reports/ERDiagramsOfViews/Pharmacy%20BCMA_4352.jpg

# Example Variables of Interest

- LocalDrugSID
- DrugNameWithDose
- DaysSupply
- DoseOrdered (dosage amount, ie. 250)
- Unit (ie. mg)

# Agenda for Presentation

- Overview of Microbiology and Pharmacy domains
- Two examples
- Limitations and strengths
- Other Resources

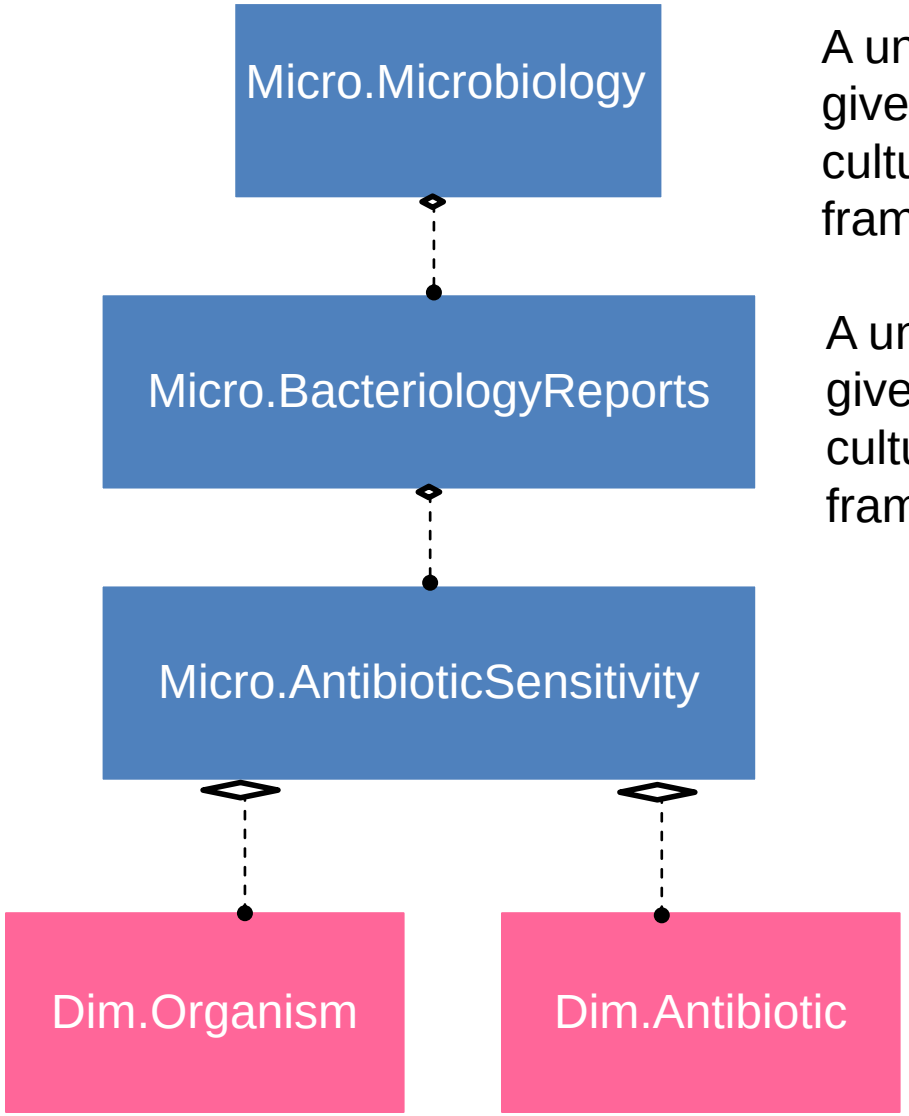
# Examples for data use

- **Example 1:** Assessing antibiotic resistance in microorganisms

- **Example 2 :** Antibiotic treatment/exposure

# Example 1: Assessing antibiotic resistance in microorganisms

# Overview of Microbiology hierarchy



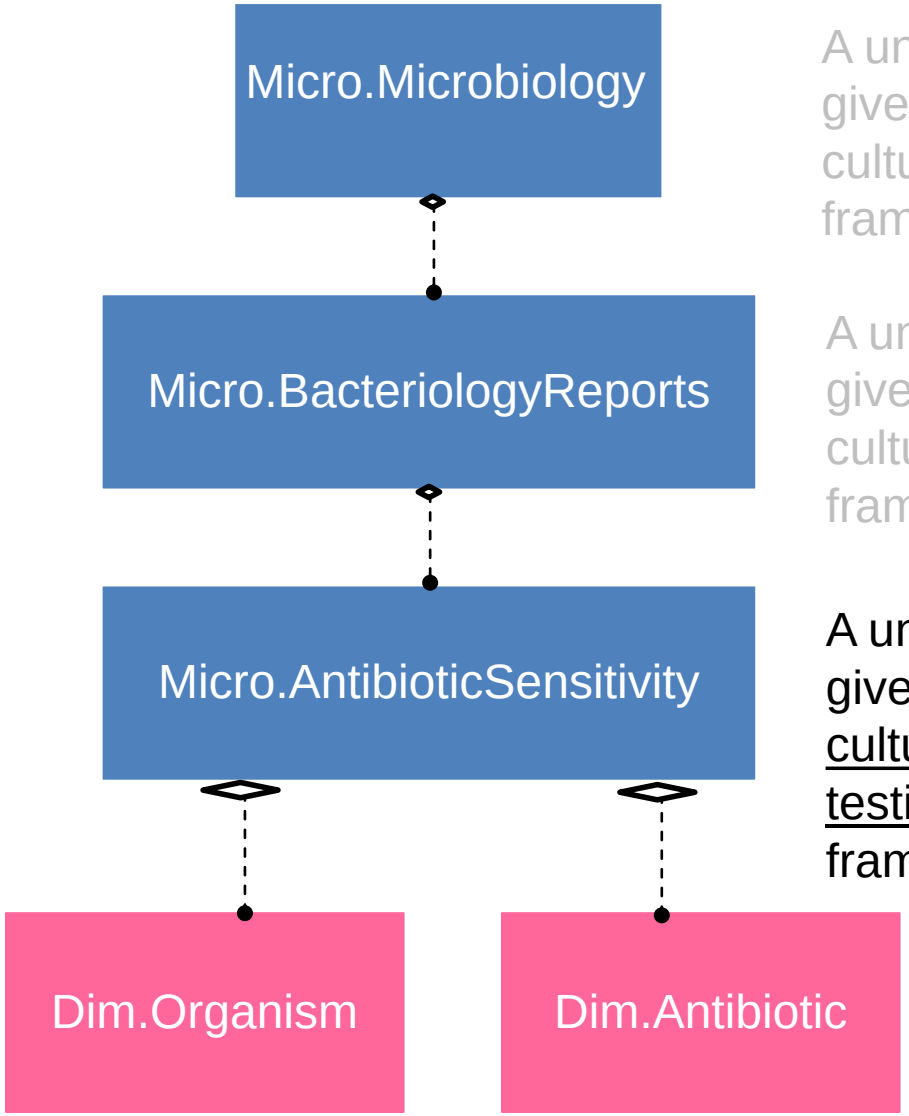

A unique count of **MicrobiologySID** gives you the number of all microbiology cultures for the study cohort and time frame

A unique count of **MicrobiologySID** gives you the number of bacteriology cultures for the study cohort and time frame

# Micro.AntibioticSensitivity

- Includes a subset of specimens from Micro.Bacteriologyreports
  - Only positive cultures that had antibiotic susceptibility testing performed
  - Includes variables that identify the antibiotic tested against and the antibiotic sensitivity results and interpretation
    - Examples: S-susceptible, I-Intermediate, R-Resistant

# Overview of Microbiology hierarchy




A unique count of **MicrobiologySID** gives you the number of all microbiology cultures for the study cohort and time frame

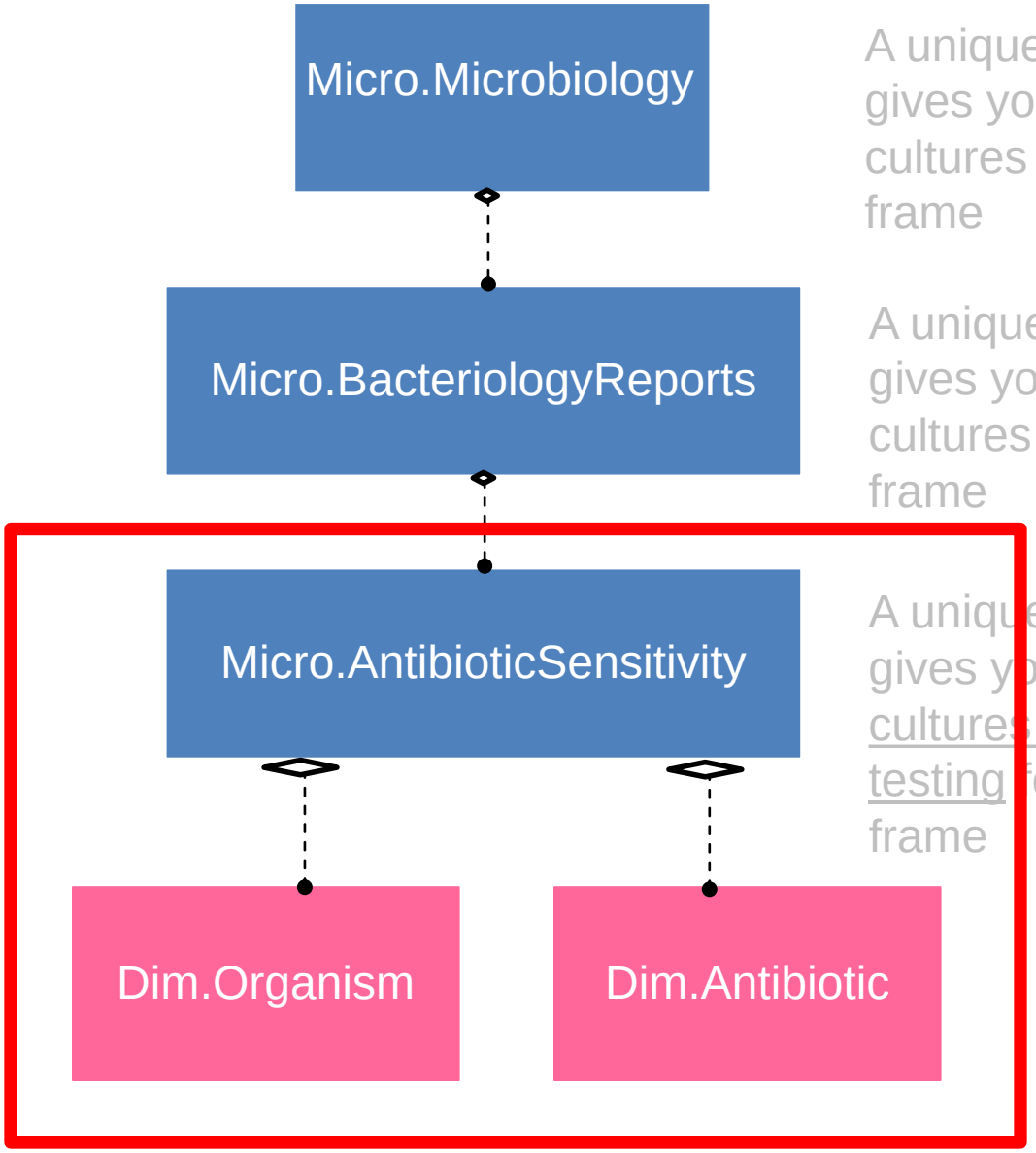
A unique count of **MicrobiologySID** gives you the number of bacteriology cultures for the study cohort and time frame

A unique count of **MicrobiologySID** gives you the number of bacteriology cultures with antibiotic susceptibility testing for the study cohort and time frame

# Dim.Organism and Dim.Antibiotic

- Dim.Organism  - Table name
  - Organism – Name of variable in Dim.Organism table
  - Includes the actual names of the organisms which grew in culture
- Dim.Antibiotic – Table name
  - Antibiotic – Name of variable in Dim.Antibiotic table
  - Includes the actual names of the antibiotics tested against the organisms which grew in culture
- Use OrganismSID and AntibioticSID from these dimension tables to link to Micro.Antibioticsensitivity

# Overview of Microbiology hierarchy




A unique count of **MicrobiologySID** gives you the number of all microbiology cultures for the study cohort and time frame

A unique count of **MicrobiologySID** gives you the number of bacteriology cultures for the study cohort and time frame

A unique count of **MicrobiologySID** gives you the number of bacteriology cultures with antibiotic susceptibility testing for the study cohort and time frame

# Overview of Process for Identifying an Antibiotic Resistant Organism

- Identify the organism, e.g. *Klebsiella*
- Identify the antibiotic(s) of interest, e.g. ertapenem, imipenem
- Merge with Micro.AntibioticSensitivity fact table to obtain cohort and specimen specific information and the variable field ‘AntibioticSensitivityInterpretation’
- Standardize the antibiotic sensitivity results in ‘AntibioticSensitivityInterpretation’ as S=Susceptible, I=Intermediate Susceptibility or R=Resistant
- Describe your organisms by percentage resistant

*Disclaimer: This is one of several approaches.

# Step 1: Identify a full list of the 'Organism' variable

Screen shot of the results of a query from Dim.Organism by the 'Organism' variable

SQLQuery1.sql

```
/****** Look only at unique or distinct Organism Entries ******/
SELECT DISTINCT([Organism])
  FROM [CDWWork].[Dim].[Organism]
  ORDER BY [Organism]
```

100 %

Results | Messages

| | Organism |
|---|---|
| 1 | NULL |
| 2 | |
| 3 | SP. |
| 4 | "Missing" |
| 5 | "Unknown at this time" |
| 6 | 0004 ETIOLOGIC AGENT NOT IDENTIFIED |
| 7 | 0157 E.COLI 0157 (CRITICAL RESULT) |
| 8 | 1(1-NAPHTHYL)-2-THIOUREA |
| 9 | 1+ RBC |
| 10 | 1+ WBC |
| 11 | 1, 1, 1, -TRICHLORO-2, 2-BIS (P-CHLOROPHENYL) ETHANE |
| 12 | 1, 1, 1-TRICHLOROETHANE |
| 13 | 1, 1-DICHLORO-2-(O-CHLOROPHENYL-2-(P-CHLOROPHENY... |
| 14 | 1, 1-DICHLOROETHYLENE |
| 15 | 1, 3-DICHLORO-2-PROPANOL |
| 16 | 1,000 CFU/ML |
| 17 | 1-(1-(2-THIENYL) CYCLOHEXYL) PIPERIDINE |
| 18 | 1-1-BIS-(P-CHLOROPHENYL)-2-NITROBUTANE |
| 19 | 1-1-BIS-(P-CHLOROPHENYL)-2-NITROPROPANE |
| 20 | 1-1-DICHLORO-1-NITROETHANE |

# Step 2: Review and categorize organisms

- Review of the 'Organism' list to categorize into the causative organism of interest
  - ie. *Klebsiella oxytoca*, *Acinetobacter baumanii*
- Recent review of Dim.Organism found 259 unique versions of *Klebsiella*

**From Dim.Organism** | **Study categorization**

| Organism | Organism_category |
|---|---|
| ESBL K. OXYTOCA | KLEBSIELLA_OXYTOCA |
| KLEB OXYTOCA STR 1 | KLEBSIELLA_OXYTOCA |
| KLEB OXYTOCA str 1 | KLEBSIELLA_OXYTOCA |
| KLEB OXYTOCA STR 2 | KLEBSIELLA_OXYTOCA |
| KLEBSIELLA OXYTOCA (ESBL POSITIVE) | KLEBSIELLA_OXYTOCA |
| KLEBSIELLA OXYTOCA (ESBL) | KLEBSIELLA_OXYTOCA |
| KLEBSIELLA OXYTOCA *CRE* | KLEBSIELLA_OXYTOCA |
| KLEBSIELLA OXYTOCA *ESBL* | KLEBSIELLA_OXYTOCA |
| KLEBSIELLA OXYTOCA *ESBL/CRE* | KLEBSIELLA_OXYTOCA |
| KLEBSIELLA PNEUMONIA - CRE | KLEBSIELLA_PNEUMONIAE |
| KLEBSIELLA PNEUMONIA (ESBL) | KLEBSIELLA_PNEUMONIAE |
| KLEBSIELLA PNEUMONIA (KPC) | KLEBSIELLA_PNEUMONIAE |
| KLEBSIELLA PNEUMONIA *ESBL* | KLEBSIELLA_PNEUMONIAE |
| KLEBSIELLA PNEUMONIA ESBL POS | KLEBSIELLA_PNEUMONIAE |

# Step 3: Identifying a full list of antibiotics tested against organisms

Screen shot of results for Dim.Antibiotic, where the field of interest is ‘Antibiotic’

SQLQuery1.sql

```
/****** Look only at unique or distinct Antibiotic Entries ******/
SELECT DISTINCT([Antibiotic])
  FROM [CDWWork].[Dim].[Antibiotic]
  ORDER BY [Antibiotic]
```

100 %

Results | Messages

| | Antibiotic |
|---|---|
| 1 | *Missing* |
| 2 | *Unknown at this time* |
| 3 | 0NAFCILLIN |
| 4 | 1... |
| 5 | 124 |
| 6 | 5-FLOUROCYTOSINE |
| 7 | 5-FLUCYTOSINE |
| 8 | 5-FLUOROCYSTOSINE |
| 9 | 5-FLUOROCYTOSINE |
| 10 | A/S |
| 11 | ABACAVIR (DC'D) |
| 12 | ADEFOVIR |
| 13 | AM/CL-AUG |
| 14 | AMC |
| 15 | AMDINOCILLIN |
| 16 | AMIKAC 4.0 MCG/ML: |
| 17 | AMIKAC 6.0 |
| 18 | AMIKACIN |
| 19 | AMIKACIN (AFB) |
| 20 | AMIKACIN 6.0 |

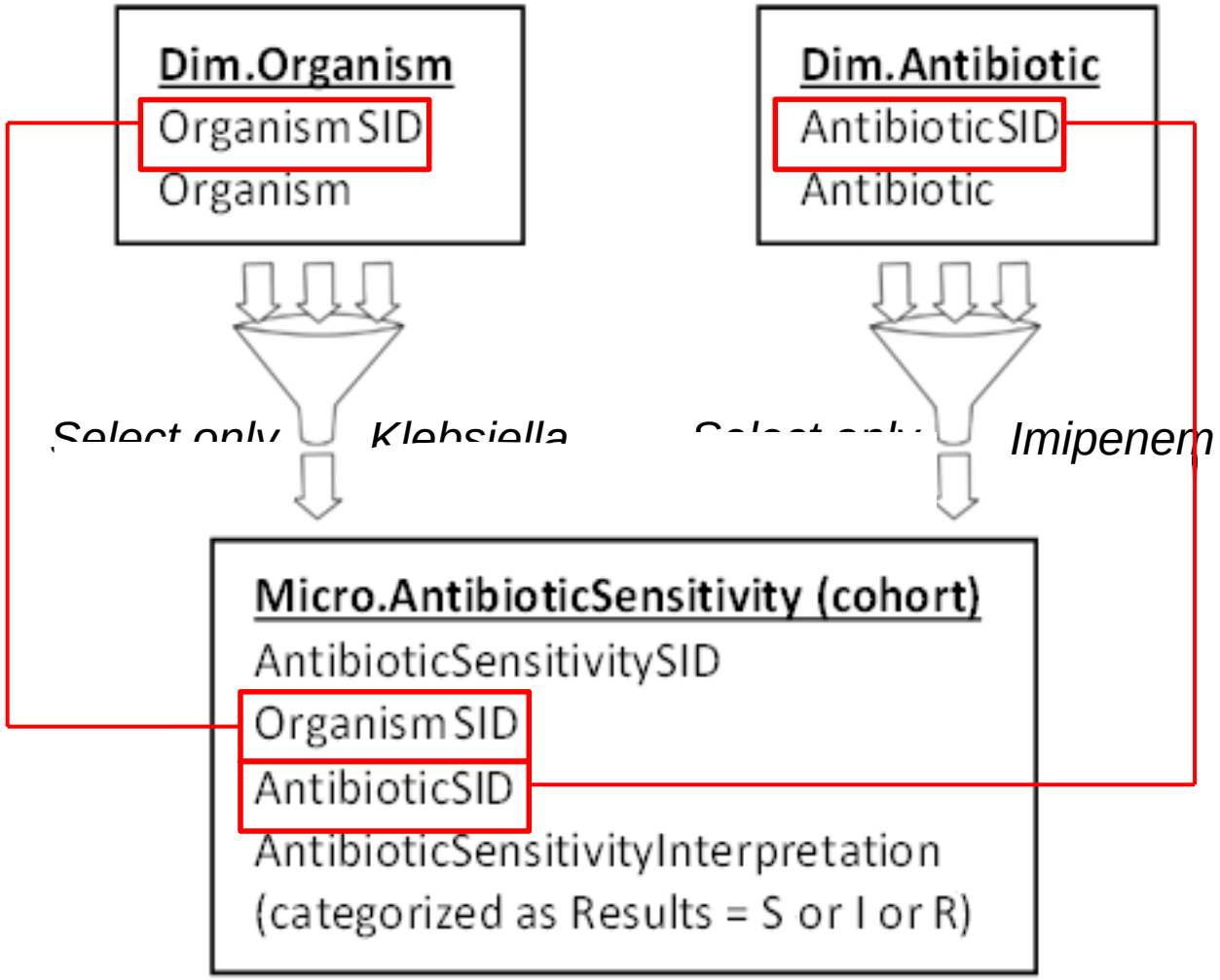
# Step 4: Review and categorize antibiotics tested

- Review of the 'Antibiotic' list to categorize into antibiotics of interest
  - ie. Identify all carbapenems
- Variability by site, year, misspellings, etc.

| From Dim.Antibiotic | Study categorization |
|---|---|
| Antibiotic | Abx |
| ERTAPENEM | ERTA |
| ERTAPENEM ET | ERTA |
| ERTAPENEM KB | ERTA |
| ERTAPENEM MIC | ERTA |
| ERTAPENEM. | ERTA |
| IMIPENEM | IMIP |
| IMIPENEM 4.0 | IMIP |
| IMIPENEM AFB | IMIP |
| IMIPENEM KB | IMIP |
| IMIPENEM MIC | IMIP |
| IMIPENEM. | IMIP |
| IMIPENEM/CILASTATIN | IMIP |
| IMIPENUM | IMIP |
| IMP | IMIP |
| MERO | MERO |
| MEROP | MERO |
| MEROPENEM | MERO |
| DORIPENEM | DORI |
| DORIPENEM ET | DORI |
| DORIPENEM KB | DORI |

## Step 5: Linking of 3 tables

- Dim.Organism (limited to ORGANISMS OF INTEREST)
- Dim.Antibiotic (limited to ANTIBIOTICS OF INTEREST )
- Micro.AntibioticSensitivity (categorized as S, I, or R)



# Step 6: Identify antibiotic susceptibilities and categorize

- 'AntibioticSensitivityInterpretation' is also a text-based field, so look at the full listing in order to categorize results that are
  - S=Susceptible
  - I=Intermediate Susceptibility
  - R=Resistant

SQLQuery1.sql

```
/****** Look only at unique or distinct Antibiotic Sensitivity Entries
SELECT DISTINCT([AntibioticSensitivityInterpretation])
  FROM [ORD_ProjectFolder].[Src].[Micro_AntibioticSensitivity]
  ORDER BY [AntibioticSensitivityInterpretation]
```

100 %

Results | Messages

| | AntibioticSensitivityInterpretation |
|---|---|
| 1 | NULL |
| 2 | |
| 3 | R |
| 4 | S |
| 5 | - |
| 6 | I |
| 7 | R |
| 8 | S |
| 9 | & |
| 10 | &CLIND |
| 11 | &VANCO |
| 12 | ' |
| 13 | '' |
| 14 | * |
| 15 | ** |
| 16 | + |
| 17 | .=1 |
| 18 | - |
| 19 | . |
| 20 | .. |
| 21 | .032 |
| 22 | .047 |
| 23 | .06 S |
| 24 | .094 |
| 25 | .12 |
| 26 | .125 |

*Additional results*

| | |
|---|---|
| 365 | See Above |
| 366 | SEN |
| 367 | SEN-SYNRGY |
| 368 | SENS |
| 369 | SENSITIVE |
| 370 | SS |
| 371 | SSUPPRESSED RESULTS |
| 372 | STAPH |
| 373 | SUN-S |
| 374 | SUPPRESSED RESULTS |
| 375 | SUSCEP |
| 376 | SW |
| 377 | SYHN-S |
| 378 | SYM-R |
| 379 | SYM-S |
| 380 | Syn |
| 381 | SYN- |

# Review of Process for Identifying an Antibiotic Resistant Organism

- Identify the organism and standardize, e.g. *Klebsiella*
- Identify the antibiotic(s) of interest and standardize, e.g. ertapenem, imipenem
- Merge with Micro.AntibioticSensitivity fact table to obtain cohort and specimen specific information and the variable field ‘AntibioticSensitivityInterpretation’
- Standardize the antibiotic sensitivity results in ‘AntibioticSensitivityInterpretation’ as S=Susceptible, I=Intermediate Susceptibility or R=Resistant
- Describe your organisms by percentage resistant

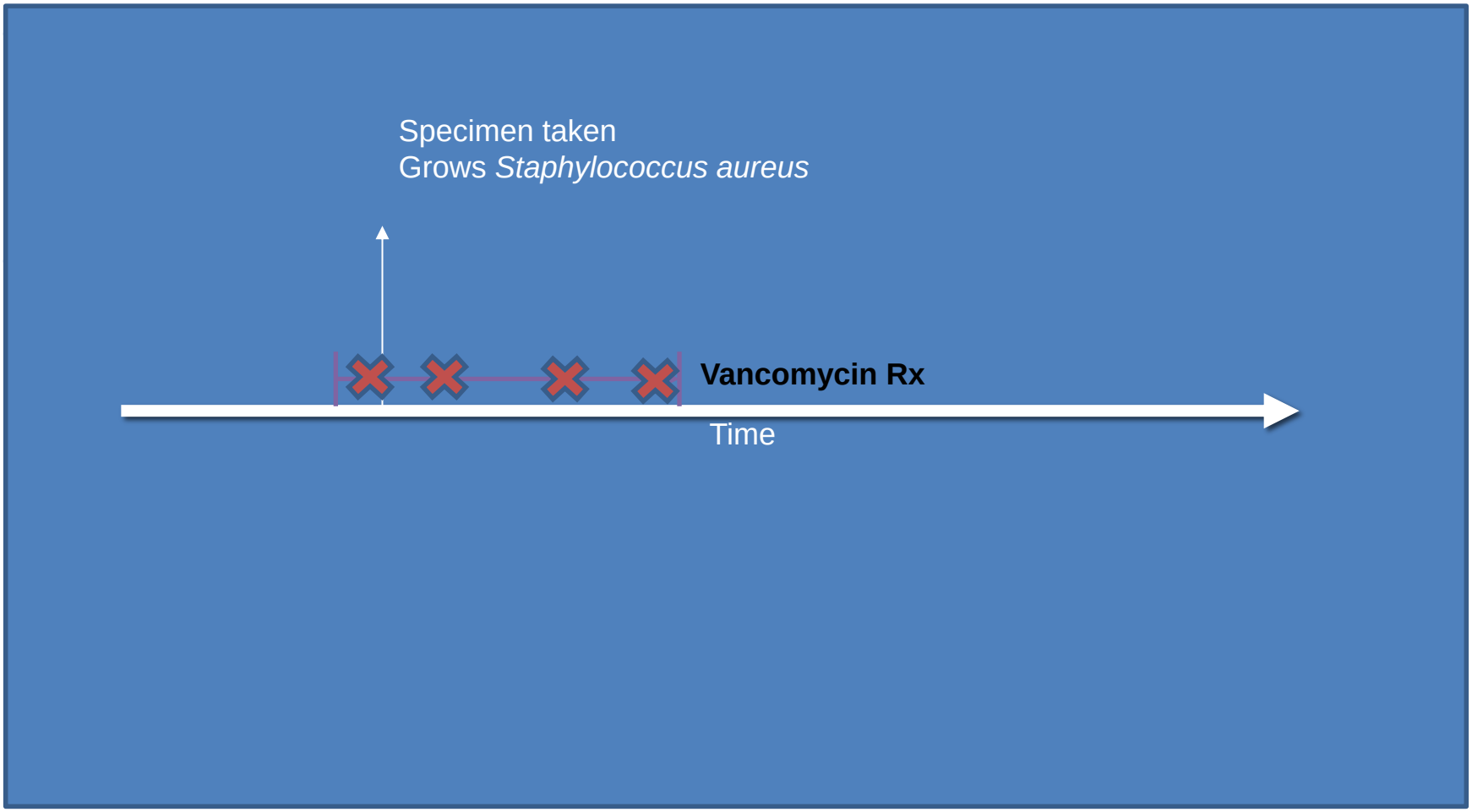
*Disclaimer: This is one of several approaches.

# Considerations for Example 1

- These fields are not standardized, so requires data cleaning to ensure accurate identification
- Look at a ***full listing*** of the ‘Organism’, ‘Antibiotic’, ‘AntibioticSensitivityInterpretation’ and ‘AntibioticSensitivityValue’ fields
- Consider all possible variations including alternate spellings, misspellings, phrasing, and abbreviations
- Quantitative information like MICs may be in the interpretation field and may need further categorization
- Use of the ‘AntibioticSensitivityValue’ field with the ‘AntibioticSensitivityInterpretation’ field in combination may be warranted

# Example 2: Antibiotic treatment/exposure

# Example 2: Joining Organisms and Treatment



- Live demonstration

# Agenda for Presentation

- Overview of Microbiology and Pharmacy domains
- Two examples
- Limitations and strengths
- Other Resources

# Limitations to Microbiology and Pharmacy Data Use

- Remember that workup and data entry may not be systematic
- Be aware of selective reporting
- Text-based fields: Not standardized
- If interested in negative cultures, must make assumptions that any specimen NOT in all other fact tables but they have Micro.Microbiology.
  - Be aware of organisms or resistance stored in other places (ie. Lab Chem)
  - Use all the fact tables to find organisms because

    eg. Yeast won't just be in mycology.

# Limitations to Microbiology and Pharmacy Data Use

- Outside the VA prescriptions and microbiology can't be captured
- Pharmacy data: BCMA does not include outpatient, ER, or hemodialysis, surgery/OR
  - Can look at orders or IV to see if they got it; but it's a search
- ER has stock of antibiotics that may not be logged, except in notes: natural language processing needed

# Limitations to Microbiology and Pharmacy Data Use

- Dose: not standardized. Difficult to use.
- BCMA limited – route of administration can be different then what is in the patient record from pharmacy
- Prolonged administration or extended infusions can be documented at start or finish.
- Data quality has not been assessed for most

# Microbiology and Pharmacy Domain Strengths

- Includes culture data on bacteria, viruses, fungi, parasites
- Millions of Microbiology and Pharmacy records from an integrated healthcare system
- Ability to link with other CDW data sources (ie. encounters)
- Opportunity to answer SOME clinical, epidemiologic, and health services and outcomes research questions on infectious disease that otherwise would not be possible with one or two sites
- Pharmacy: outpatient and inpatient BCMA is good
  - Since ~2005; quality of BCMA implementation has been monitored and is high.

# Sample of currently VA funded studies using these data

- CARRIAGE QUERI (Rubin/Evans/Perencevich)
  - CRE (C. Evans)
  - SSTOP (M. Rubin/M. Goetz)
- Actionable Knowledge to Guide Antimicrobial Stewardship (M. Jones)
- Understanding and Improving Decision-making in Pneumonia with Informatics (B. Jones)
- Comparative Effectiveness of Strategies to Control S. Aureus Infections (M. Schweizer)
- PSCI on Measurement to Advance Patient Safety (Rosen, Gupta, et al)

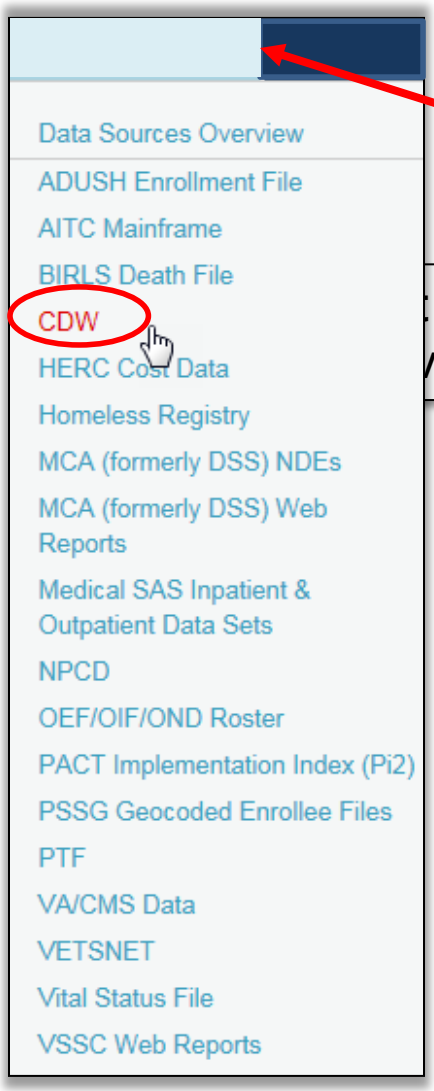
# Poll #4: Your plans

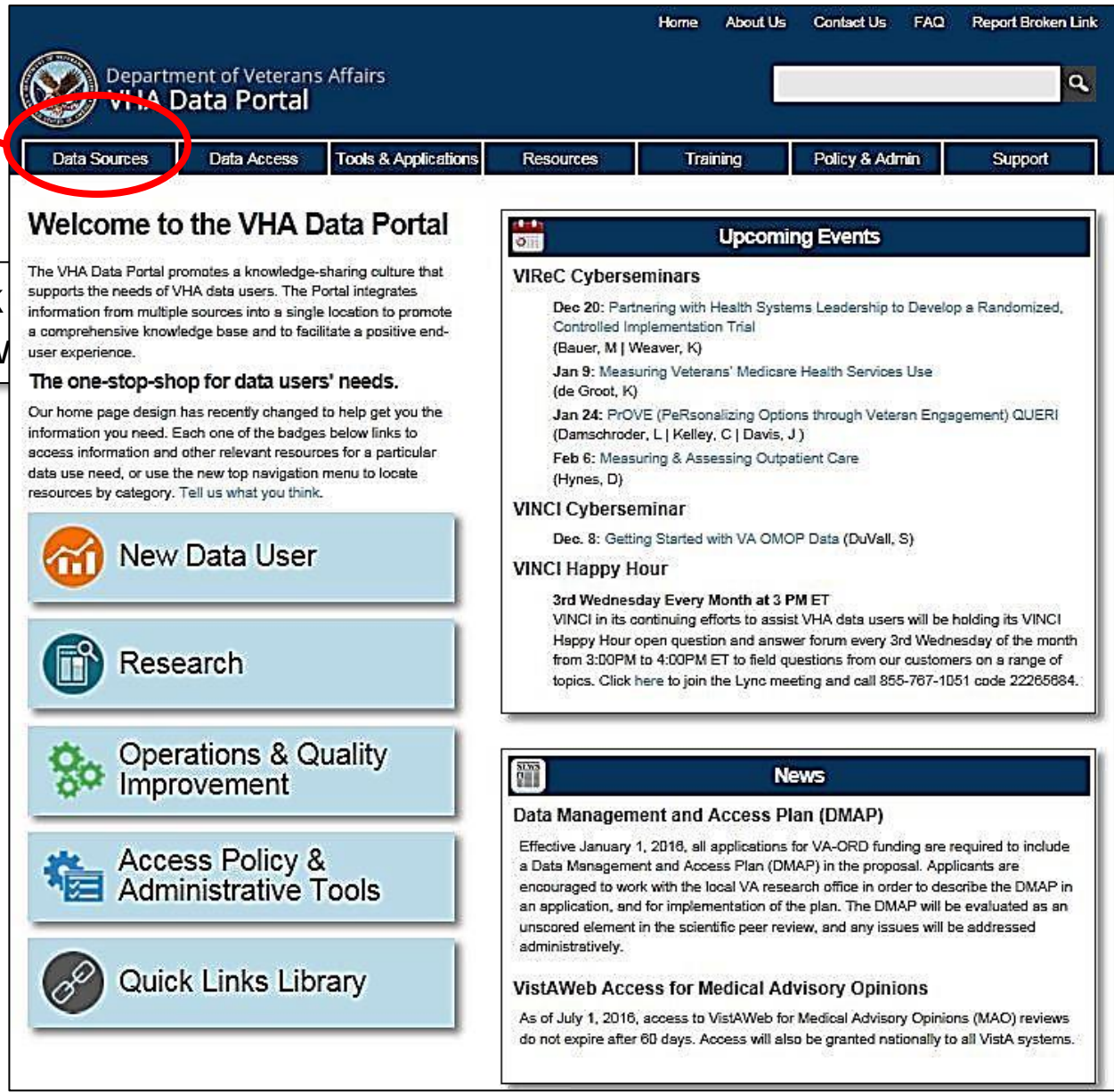
- What are your future plans for using CDW microbiology and pharmacy data? (Select all that apply)
  - I do not plan to use these data in the future
  - Assess risk factors for infection or antibiotic resistance/treatment
  - Evaluate outcomes (morbidity, mortality, or costs) for infection
  - Conduct surveillance, infection control, or antimicrobial stewardship activities
  - Evaluate impact of national initiatives on infections, antibiotic resistance, or stewardship
  - Other (please specify)

# Agenda for Presentation

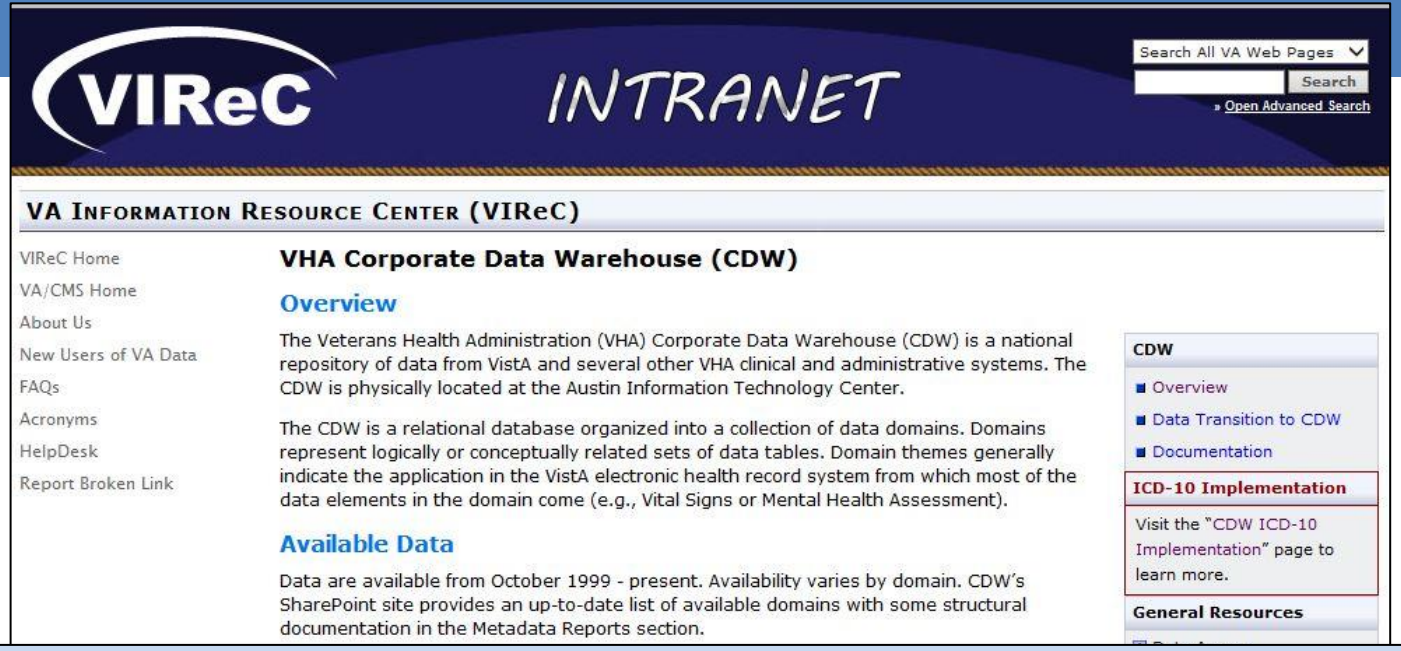
- Overview of Microbiology and Pharmacy domains
- Two examples
- Limitations and strengths
- Other Resources

# VHA Data Portal



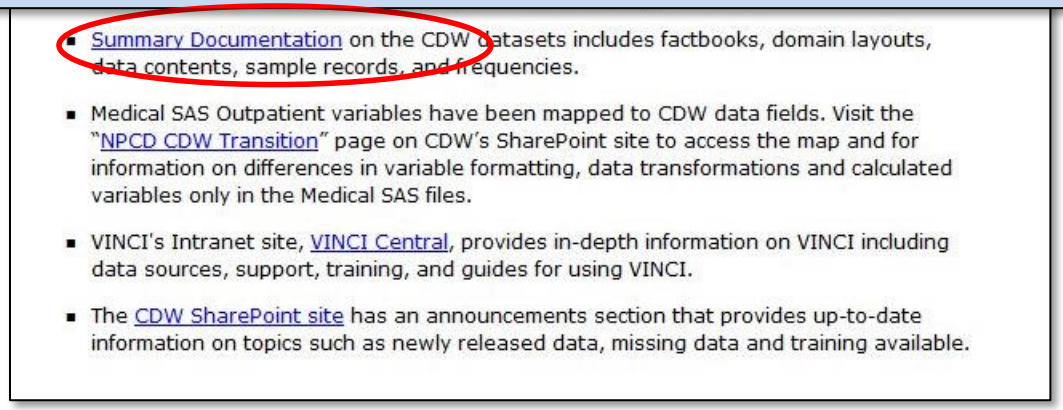
# VIReC Resources for CDW




**http://vaww.virec.research.va.gov/CDW/Overview.htm**

**Basic information and resources for researchers interested in CDW data, including:**

**CDW Summary Documentation**
**http://vaww.virec.research.va.gov/CDW/ Documentation.htm**



# VIReC Options for Specific Questions

## HSRData Listserv

- Community knowledge sharing
- ~1,200 VA data users
- Researchers, operations, data stewards, managers
- Subscribe by visiting http://vaww.virec.research.va.gov/Support/HSRData-L.htm (VA Intranet)

## HelpDesk

- Individualized support

virec@va.gov

(708) 202-2413

# Contact information


Charlesnika.Evans@va.gov
**Charlesnika T. Evans, PhD, MPH**
Research Health Scientist
Center of Innovation for Complex Chronic Care (CINCCH)
Hines VA

Makoto.Jones@va.gov
**Makoto Jones, MD, MSCI**
Center of Innovation, Informatics, Decision Enhancement, and Surveillance (IDEAS)
Salt Lake City VA

# Database & Methods Cyberseminar Series

## Next sessions

| Date | Topic |
|---|---|
| 10/2/17 | **Overview of VA Data & Research Uses**<br><br>Maria Souden, MSI, PhD<br>Associate Director<br>VA Information Resource Center |
| 11/6/2017 | **Requesting Access to VA Data**<br><br>Linda Kok, MA<br>Technical & Privacy Liaison<br>VA Information Resource Center |

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RESEARCHERS' GUIDE TO VA DATA