

# MEDICAL INTELLIGENCE

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## PERSPECTIVE

Public health events that became national security crises:

- SARS
- H5N1 avian influenza
- MERS
- H1N1 influenza pandemic
- Ebola
- Zika
- Laboratory accidents
- Biological warfare and terrorism

# OPERATIONAL FORECASTING

## Detection

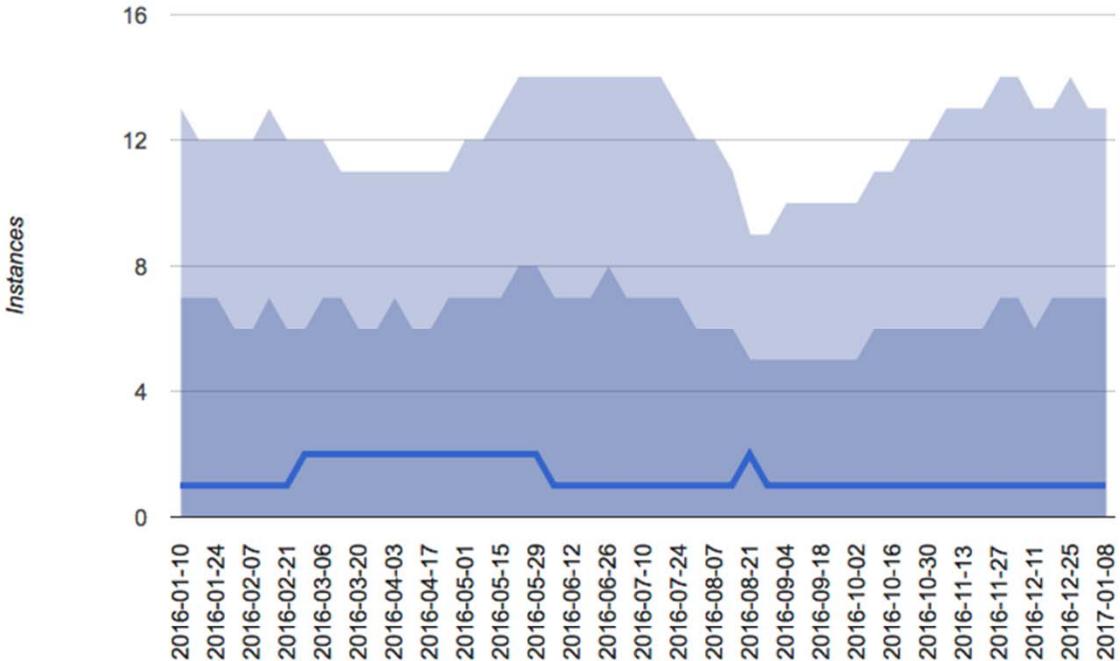
- Project Argus
- Veratect Corporation

## Forecasting

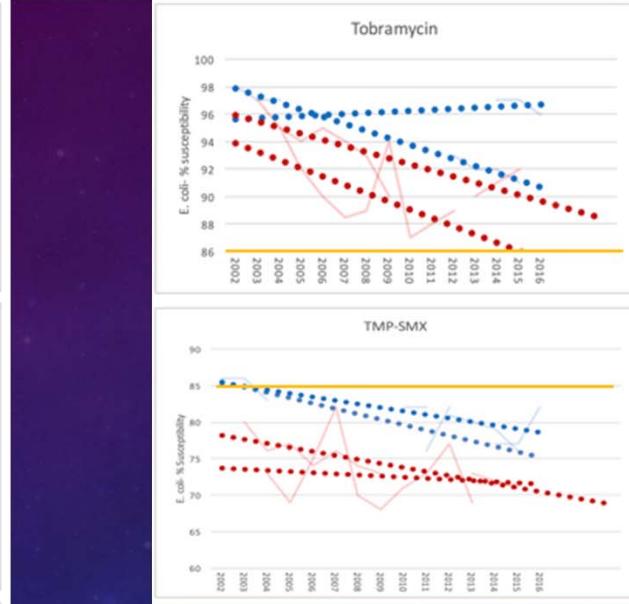
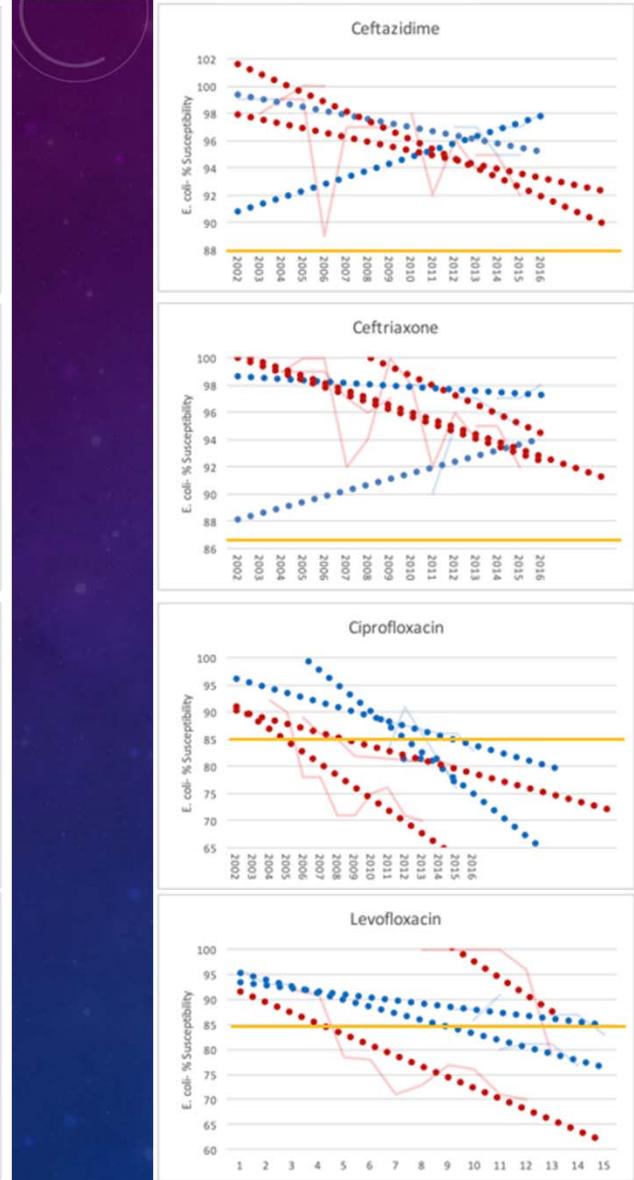
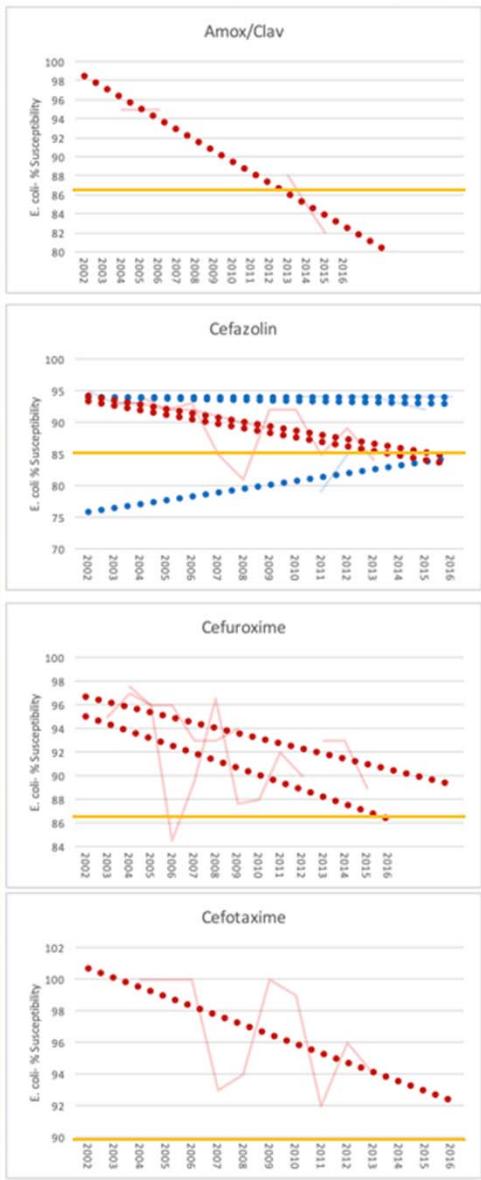
- Haiti Epidemic Advisory System
- Black Canyon Infectious Disease Forecast Station

# Forecast

C diff [Washoe County] -- Forecast



[Post to Public](#)

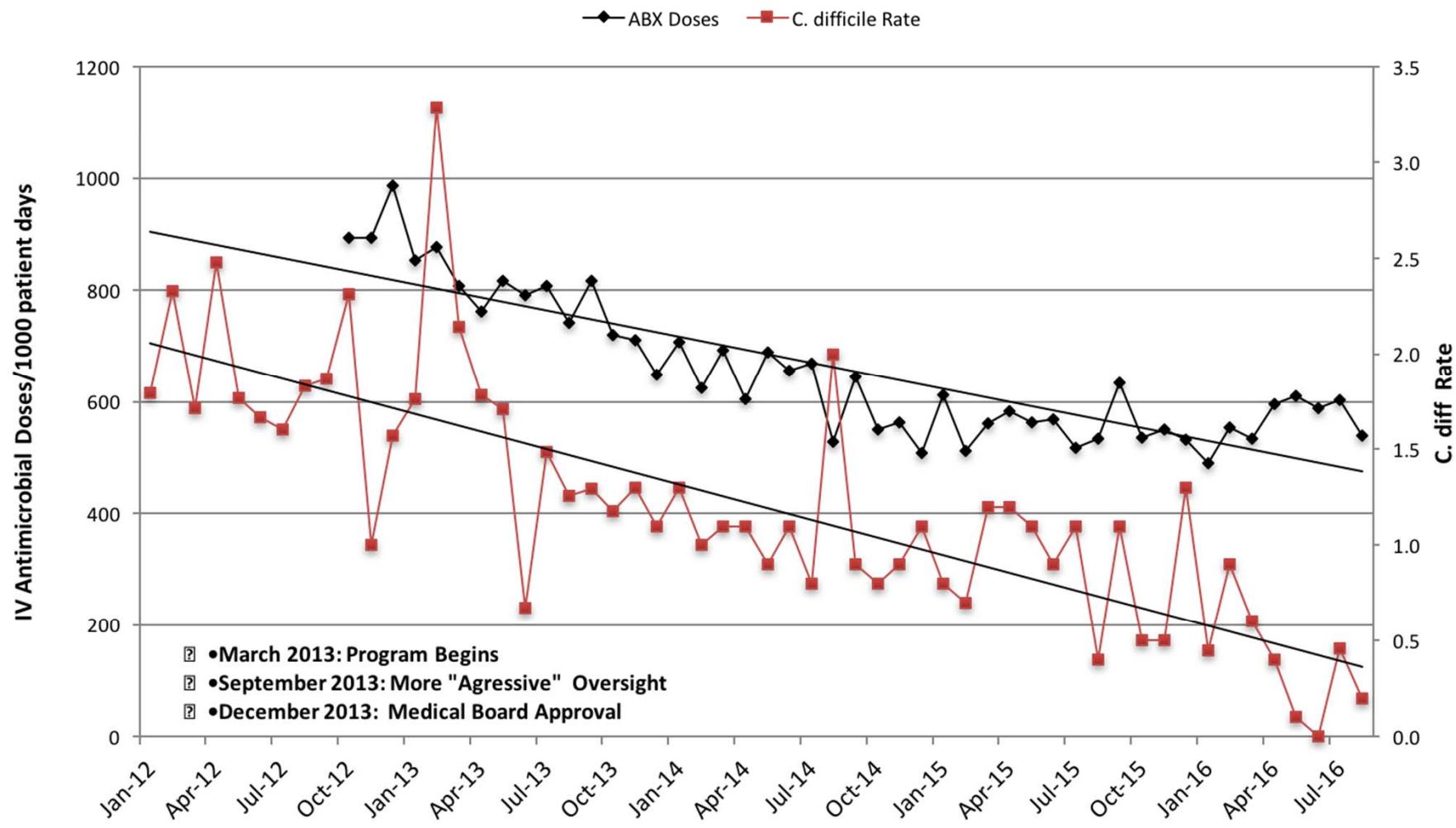


Location	Antibiotic	APC, Segment 1	P-Value	APC, Segment 2	P-Value
Rural Facility A	Amoxicillin	6.80	0.10		
Rural Facility A	Ampicillin	2.00	0.30		
Rural Facility A	Gentamicin	1.30	0.10		
Rural Facility A	Cefazolin	0.70	0.50		
Rural Facility A	Ceftriaxone	0.50	0.60		
<b>Rural Facility A</b>	<b>Imipenem</b>	<b>0.48</b>	<b>0.03</b>		
Rural Facility A	Amikacin	0.20	0.60		
Urban Facility C	Pip-Taz	0.10	0.70		
Rural Facility B	Amikacin	0.00	2E+30		
Rural Facility B	Ertapenem	0.00	2E+30		
Rural Facility B	Imipenem	0.00	0.80	0.00	0.80
Urban Facility B	Amikacin	0.00	0.80		
Urban Facility B	Ertapenem	0.00	1.00		
Urban Facility B	Imipenem	0.00	0.30		
Urban Facility B	Meropenem	0.00	2E+30		
Urban Facility C	Ertapenem	0.00	2E+30		
Urban Facility C	Meropenem	0.00	2E+30		
Rural Facility A	Pip-Taz	-0.20	0.50		
Urban Facility B	Pip-Taz	-0.20	0.20		
Urban Facility B	TMP-SMX	-0.20	0.80		
Urban Facility C	Imipenem	-0.20	0.60		
Rural Facility A	Cefepime	-0.30	0.30		
Rural Facility B	Cefazolin	-0.30	0.10		
Urban Facility B	Cefepime	-0.30	0.60		
Rural Facility B	Pip-Taz	-0.40	0.10		
Urban Facility C	Tetracycline	-0.40	0.10		
Urban Facility C	Ceftazidime	-0.49	0.21		
<b>Urban Facility C</b>	<b>Gentamicin</b>	<b>-0.56</b>	<b>0.0005</b>		
Urban Facility B	Cefotaxime	-0.60	0.10		
Urban Facility B	Ceftriaxone	-0.60	0.20		
Urban Facility B	Cefuroxime	-0.60	0.30		
Urban Facility B	Gentamicin	-0.60	0.40		
<b>Urban Facility C</b>	<b>Cefuroxime</b>	<b>-0.67</b>	<b>0.0032</b>		
Rural Facility B	Ceftriaxone	-0.70	0.10		
Urban Facility B	Tobramycin	-0.70	0.10		
Urban Facility C	Tobramycin	-0.70	0.0016		
<b>Urban Facility C</b>	<b>Cefazolin</b>	<b>-0.74</b>	<b>0.0003</b>		
Urban Facility B	Cefazolin	-0.80	0.20		
Rural Facility B	Ceftazidime	-0.81	0.0014		
<b>Urban Facility C</b>	<b>Ceftriaxone</b>	<b>-0.82</b>	<b>0.0003</b>		
Rural Facility A	TMP-SMX	-0.90	0.50		
Rural Facility B	Cefepime	-0.92	0.07		
<b>Urban Facility C</b>	<b>TMP-SMX</b>	<b>-1.08</b>	<b>0.0001</b>		
Urban Facility C	Aztreonam	-1.10	0.30		
Rural Facility B	Gentamicin	-1.14	0.05		
Urban Facility B	Ceftazidime	-1.19	0.04		
Urban Facility B	Aztreonam	-1.20	0.10		
Rural Facility B	Tobramycin	-1.35	0.0011		
Rural Facility B	Ciprofloxacin	-1.51	0.23		
Urban Facility C	Cefepime	-1.60	0.30		
Urban Facility C	Ampicillin	-1.99	<0.001		
Rural Facility B	TMP-SMX	-2.04	0.0001		
Urban Facility C	Ciprofloxacin	-2.60	0.04		
Rural Facility B	Levafloxacin	-2.61	0.0033		
Rural Facility B	Amox-Clav	-2.61	0.0022*		
Rural Facility A	Ciprofloxacin	-2.80	0.20		
Rural Facility B	Ampicillin	-2.80	0.10		
Rural Facility A	Levafloxacin	-3.30	0.10		
Urban Facility B	Ampicillin	-3.30	0.10		
Rural Facility B	Levafloxacin	-3.77	0.0033		
Rural Facility B	Amox-Clav	-5.20	0.03	0.70	0.62
Urban Facility B	Ciprofloxacin	-5.93	0.02	-0.09	0.95

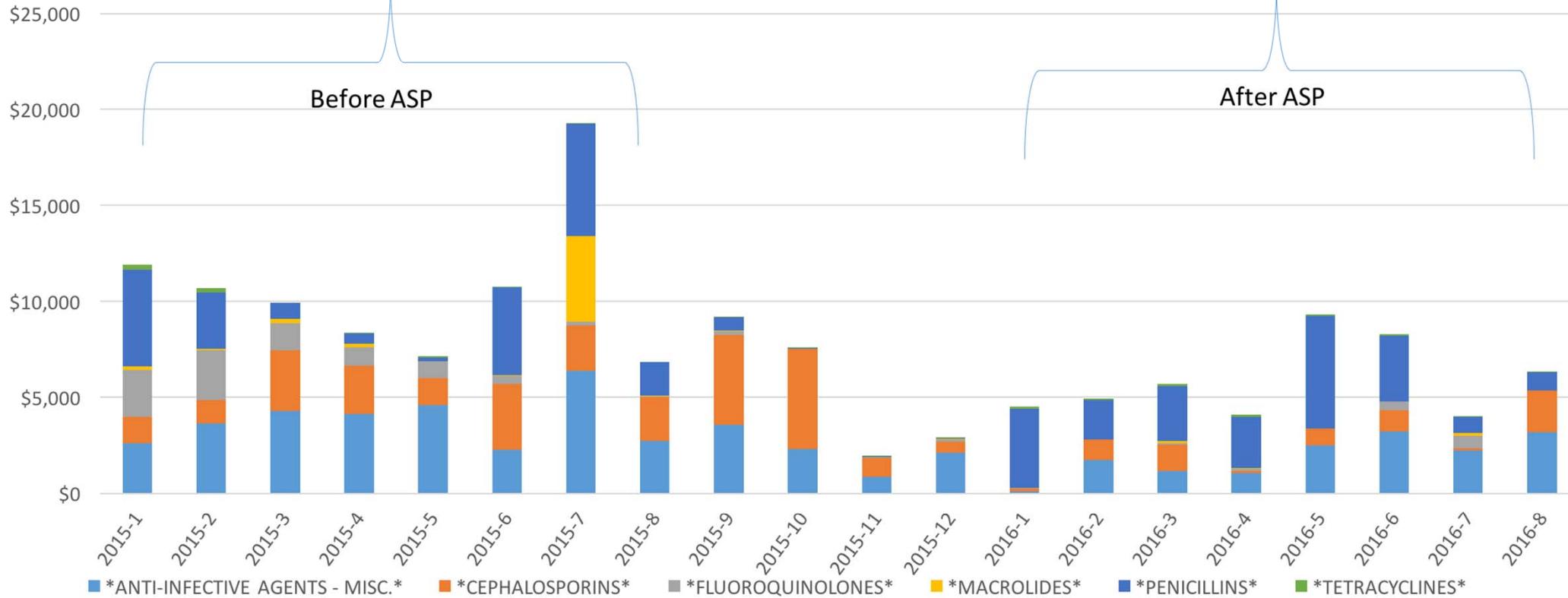


<b>Urban Facility B</b>	<b>Cefazolin</b>	<b>-0.80</b>	<b>0.20</b>		
<b>Rural Facility B</b>	<b>Ceftazidime</b>	<b>-0.81</b>	<b>0.0014</b>		
<b>Urban Facility C</b>	<b>Ceftriaxone</b>	<b>-0.82</b>	<b>0.0003</b>		
<b>Rural Facility A</b>	<b>TMP-SMX</b>	<b>-0.90</b>	<b>0.50</b>		
<b>Rural Facility B</b>	<b>Cefepime</b>	<b>-0.92</b>	<b>0.07</b>		
<b>Urban Facility C</b>	<b>TMP-SMX</b>	<b>-1.08</b>	<b>0.0001</b>		
<b>Urban Facility C</b>	<b>Aztreonam</b>	<b>-1.10</b>	<b>0.30</b>		
<b>Rural Facility B</b>	<b>Gentamicin</b>	<b>-1.14</b>	<b>0.03</b>		
<b>Urban Facility B</b>	<b>Ceftazidime</b>	<b>-1.19</b>	<b>0.04</b>		
<b>Urban Facility B</b>	<b>Aztreonam</b>	<b>-1.20</b>	<b>0.10</b>		
<b>Rural Facility B</b>	<b>Tobramycin</b>	<b>-1.35</b>	<b>0.0011</b>		
<b>Rural Facility B</b>	<b>Ciprofloxacin</b>	<b>-1.51</b>	<b>0.23</b>		
<b>Urban Facility C</b>	<b>Cefepime</b>	<b>-1.60</b>	<b>0.30</b>		
<b>Urban Facility C</b>	<b>Ampicillin</b>	<b>-1.99</b>	<b>&lt;0.001</b>		
<b>Rural Facility B</b>	<b>TMP-SMX</b>	<b>-2.04</b>	<b>0.0001</b>		
<b>Urban Facility C</b>	<b>Ciprofloxacin</b>	<b>-2.60</b>	<b>0.04</b>	<b>-0.84</b>	<b>0.25</b>
<b>Urban Facility B</b>	<b>Levafloxacin</b>	<b>-2.61</b>	<b>0.0033</b>		
<b>Rural Facility B</b>	<b>Amox-Clav</b>	<b>-2.61</b>	<b>0.0022*</b>		
<b>Rural Facility A</b>	<b>Ciprofloxacin</b>	<b>-2.80</b>	<b>0.20</b>		
<b>Rural Facility B</b>	<b>Ampicillin</b>	<b>-2.80</b>	<b>0.10</b>		
<b>Rural Facility A</b>	<b>Levafloxacin</b>	<b>-3.30</b>	<b>0.10</b>		
<b>Urban Facility B</b>	<b>Ampicillin</b>	<b>-3.30</b>	<b>0.10</b>		
<b>Rural Facility B</b>	<b>Levafloxacin</b>	<b>-3.77</b>	<b>0.0033</b>		
<b>Rural Facility B</b>	<b>Amox-Clav</b>	<b>-5.20</b>	<b>0.03</b>	<b>0.70</b>	<b>0.62</b>
<b>Urban Facility B</b>	<b>Ciprofloxacin</b>	<b>-5.93</b>	<b>0.02</b>	<b>-0.09</b>	<b>0.95</b>

## The Valley Hospital Antimicrobial Stewardship Program



## Financial Impact of Antibiotic Stewardship Nursing Home



## Impact of Antibiotic Stewardship on CDI at Nursing Home

