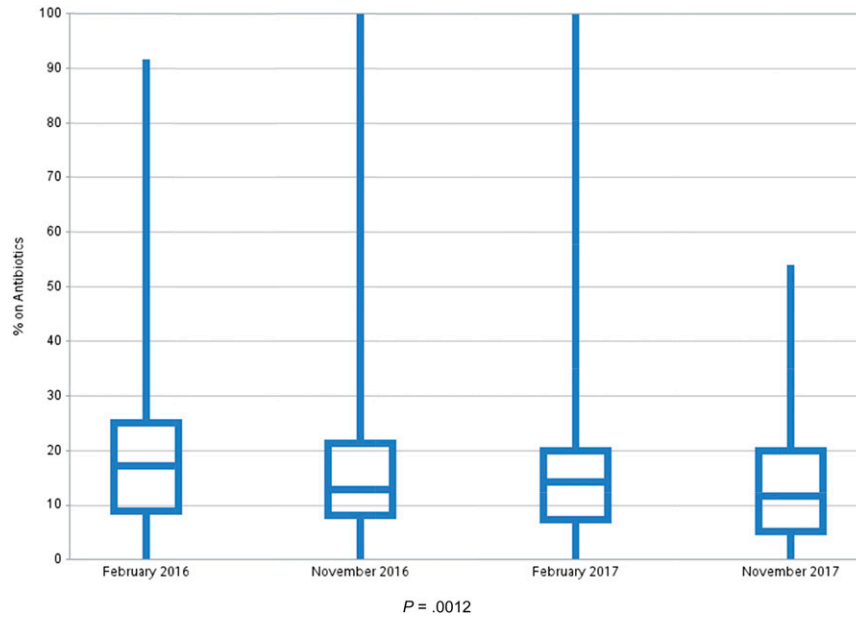


## Supplemental Information



### SUPPLEMENTAL FIGURE 2

NICU AURs ( $N = 85$ ). The box and whisker plot represents the median (solid line), IQR (box), and lowest to highest values for each of the 4 audits. This plot is limited to only the centers that participated in each of the 4 audits ( $N = 85$ ). The  $P$  value represents the Cochran-Armitage test for trend.

**SUPPLEMENTAL TABLE 4** Participating Centers in the Choosing Antibiotics Wisely iNICQ

Center Name	City	State or Territory
Advocate Children's Hospital (Park Ridge)	Park Ridge	Illinois
Advocate Children's Hospital (Oak Lawn)	Oak Lawn	Illinois
Akron Children's Hospital	Akron	Ohio
Akron Children's NICU at St. Elizabeth Boardman Hospital	Boardman	Ohio
Alta Bates Summit Medical Center	Berkeley	California
Altru Health System	Grand Forks	North Dakota
Ann & Robert H. Lurie Children's Hospital	Chicago	Illinois
Anne Arundel Medical Center	Annapolis	Maryland
Ascension SE Wisconsin Hospital (St. Joseph Campus)	Milwaukee	Wisconsin
Atlanticare Regional Medical Center (NICU)	Pomona	New Jersey
Aultman Hospital	Canton	Ohio
Aurora Baycare Medical Center	Green Bay	Wisconsin
Aurora Sinai Medical Center	Milwaukee	Wisconsin
Banner University Medical Center (Tucson)	Tucson	Arizona
Baptist Children's Hospital	Miami	Florida
Baptist Memorial Hospital for Women	Memphis	Tennessee
Barbara Bush Children's Hospital at Maine Medical	Portland	Maine
Baystate Medical Center	Springfield	Massachusetts
Beaumont Hospital, Dearborn	Dearborn	Michigan
Berkeley Medical Center	Martinsburg	West Virginia
Bon Secours St. Mary's Hospital	Richmond	Virginia
CHOP Newborn Care at Chester County Hospital	West Chester	Pennsylvania
CJW Medical Center (Chippenham Campus)	Richmond	Virginia
Cabell Huntington Hospital, Inc	Huntington	West Virginia
California Hospital Medical Center (Los Angeles)	Los Angeles	California
Carle Foundation Hospital	Urbana	Illinois
Carolinas Medical Center	Charlotte	North Carolina
Centra Health, Virginia Baptist Hospital	Lynchburg	Virginia
Charleston Area Medical Center	Charleston	West Virginia
Children's Hospital of Richmond at VCU	Richmond	Virginia
Children's Hospital Colorado at Memorial Hospital	Colorado Springs	Colorado
Children's Hospital at Bronson	Kalamazoo	Michigan
Children's Hospital at Erlanger	Chattanooga	Tennessee
Children's Hospital at Providence, Alaska, The	Anchorage	Alaska
Children's Hospital at TriStar Centennial, The	Nashville	Tennessee
Children's Hospital of Greenville	Greenville	South Carolina
Children's Hospital of San Antonio	San Antonio	Texas
Christiana Care Health Services	Newark	Delaware
Cohen Children's Medical Center of New York	New Hyde Park	New York
Crozer Chester Medical Center	Upland	Pennsylvania
Dayton Children's Hospital	Dayton	Ohio
DeVos Children's, Spectrum Health	Grand Rapids	Michigan
Dell Children's Medical Center of Central Texas	Austin	Texas
Doylestown Hospital	Doylestown	Pennsylvania
Duke University	Durham	North Carolina
Eastern Maine Medical Center	Bangor	Maine
Edward Hospital and Health Services	Naperville	Illinois
Einstein Medical Center Montgomery	East Norriton	Pennsylvania
Einstein Medical Center Philadelphia	Philadelphia	Pennsylvania
El Paso Children's Hospital	El Paso	Texas
Emory University Hospital, Midtown	Atlanta	Georgia
Floyd Medical Center	Rome	Georgia
Forsyth Memorial Hospital	Winston-Salem	North Carolina
Geisinger Medical Center	Danville	Pennsylvania
Golisano Children's Hospital at Strong	Rochester	New York
Good Samaritan Hospital, San Jose	San Jose	California
Good Samaritan Medical Center	Lafayette	Colorado
Grand View Hospital	Sellersville	Pennsylvania
Greater Baltimore Medical Center	Baltimore	Maryland
Gundersen Lutheran Medical Center	La Crosse	Wisconsin

SUPPLEMENTAL TABLE 4 Continued

Center Name	City	State or Territory
Hennepin County Medical Center	Minneapolis	Minnesota
Henry Ford Hospital	Detroit	Michigan
Henry Zarrow NICU	Tulsa	Oklahoma
Holston Valley Hospital and Medical Center	Kingsport	Tennessee
Holy Redeemer Hospital and Medical Center	Meadowbrook	Pennsylvania
Hospital of the University of Pennsylvania	Philadelphia	Pennsylvania
Hurley Medical Center	Flint	Michigan
Inova Children's Hospital	Falls Church	Virginia
Inova Fair Oaks Hospital	Fairfax	Virginia
Inova Loudoun Hospital	Leesburg	Virginia
Jackson Madison County General Hospital	Jackson	Tennessee
Jeff Gordon Children's Hospital at CMC	Concord	North Carolina
Johns Hopkins Hospital	Baltimore	Maryland
Johnston-Willis Hospital	Richmond	Virginia
KF - San Diego	San Diego	California
Kadlec Regional Medical Center	Richland	Washington
Kaiser Sunnyside Medical Center	Clackamas	Oregon
Kapi'olani Medical Center for Women & Children	Honolulu	Hawaii
Lancaster General Health, Women & Babies Hospital	Lancaster	Pennsylvania
Legacy Salmon Creek Hospital	Vancouver	Washington
Maury Regional Medical Center	Columbia	Tennessee
McKay Dee Hospital Center	Ogden	Utah
McLane Children's Hospital	Temple	Texas
Medical Center at Columbus Regional, The	Columbus	Georgia
Memorial Health Savannah	Savannah	Georgia
Memorial Hermann Memorial City Medical Center	Houston	Texas
Mercy Children's Hospital	Toledo	Ohio
Mercy Hospital and Medical Center	Chicago	Illinois
Meriter Hospital	Madison	Wisconsin
Methodist Children's Hospital	San Antonio	Texas
Methodist Women's Hospital	Omaha	Nebraska
Monroe Carell Jr. Children's Hospital at Vanderbilt	Nashville	Tennessee
Munson Medical Center	Traverse City	Michigan
Betty H. Cameron Women's & Children's Hospital, New Hanover Regional Medical Center	Wilmington	North Carolina
Nebraska Medical Center	Omaha	Nebraska
Nemours Children's Hospital	Orlando	Florida
Nicklaus Children's Hospital	Miami	Florida
Niswonger Children's Hospital	Johnson City	Tennessee
North Central Baptist Hospital	San Antonio	Texas
Northeast Georgia Medical Center	Gainesville	Georgia
Northside Hospital	Atlanta	Georgia
Northside Hospital Forsyth	Cumming	Georgia
OU Health Sciences Center	Oklahoma City	Oklahoma
Oregon Health and Science University	Portland	Oregon
Overland Park Regional Medical Center	Overland Park	Kansas
Palmetto Health Richland	Columbia	South Carolina
Parkview Medical Center	Pueblo	Colorado
PeaceHealth Southwest Medical Center	Vancouver	Washington
Penn Medicine Princeton Medical Center	Plainsboro	New Jersey
Pennsylvania Hospital	Philadelphia	Pennsylvania
Phoebe Putney Memorial Hospital	Albany	Georgia
Phoenix Children's Hospital	Phoenix	Arizona
Piedmont Athens Regional	Athens	Georgia
Poudre Valley Hospital	Fort Collins	Colorado
Providence Hospital and Medical Center	Southfield	Michigan
Providence Portland Medical Center	Portland	Oregon
Providence Sacred Heart Medical Center and Children's Hospital	Spokane	Washington
Providence St. Vincent Medical Center	Portland	Oregon
Providence Tarzana Medical Center	Tarzana	California
Rainbow Babies and Children's Hospital, University Hospitals	Cleveland	Ohio

**SUPPLEMENTAL TABLE 4** Continued

Center Name	City	State or Territory
Randall Children's Hospital at Legacy Emanuel	Portland	Oregon
Regional One Health	Memphis	Tennessee
Rex Hospital	Raleigh	North Carolina
Rockford Memorial Hospital	Rockford	Illinois
Rocky Mountain Hospital for Children at P/SL	Denver	Colorado
Rogue Regional Medical Center	Medford	Oregon
SSM Health Cardinal Glennon Children's Hospital	Saint Louis	Missouri
SSM Health St. Mary's Hospital Medical Center	Madison	Wisconsin
Sacred Heart Medical Center	Springfield	Oregon
Saint Joseph Hospital	Denver	Colorado
Salem Hospital	Salem	Oregon
San Joaquin General Hospital	French Camp	California
Sisters of Charity Hospital	Buffalo	New York
St. Mary-Corwin Medical Center	Pueblo	Colorado
St. Alexius Medical Center	Hoffman Estates	Illinois
St. Charles Health Care	Bend	Oregon
St. Francis Hospital	Hartford	Connecticut
St. Francis Medical Center	Cape Girardeau	Missouri
St. John Medical Center	Tulsa	Oklahoma
St. Joseph Medical Center	Tacoma	Washington
St. Joseph Mercy Oakland	Pontiac	Michigan
St. Joseph's Children's Hospital	Tampa	Florida
St. Joseph's Hospital and Medical Center	Phoenix	Arizona
St. Louis Children's Hospital	Saint Louis	Missouri
St. Luke's Baptist Hospital	San Antonio	Texas
St. Luke's Hospital	Cedar Rapids	Iowa
St. Mary Medical Center	Long Beach	California
St. Mary Medical Center	Langhorne	Pennsylvania
St. Mary's Hospital and Medical Center	Grand Junction	Colorado
St. Peter's Medical Center	New Brunswick	New Jersey
St. Vincent Hospital	Green Bay	Wisconsin
St. Vincent Hospital and Health Center	Billings	Montana
St. Vincent Women's Hospital	Indianapolis	Indiana
Stony Brook University Medical Center	Stony Brook	New York
Sunnybrook Health Sciences Centre	Toronto	Ontario
Tampa General Hospital	Tampa	Florida
Temple University Hospital	Philadelphia	Pennsylvania
Texas Tech University Health Science Center	Amarillo	Texas
Thomas Jefferson University Hospital	Philadelphia	Pennsylvania
Trinity Hospital	Minot	North Dakota
Tulane Lakeside Hospital for Women and Children	Metairie	Louisiana
UF Health Jacksonville	Jacksonville	Florida
University of Michigan, C.S. Mott Children's Hospital, Brandon NICU	Ann Arbor	Michigan
UPHS (Marquette)	Marquette	Michigan
USA Children's and Women's Hospital	Mobile	Alabama
UW Medicine Valley Medical Center	Renton	Washington
University Pediatric Hospital	San Juan	Puerto Rico
University of Arkansas for Medical Sciences	Little Rock	Arkansas
University of Tennessee Medical Center	Knoxville	Tennessee
University of Vermont Children's Hospital	Burlington	Vermont
Virtua Hospital Systems	Voorhees	New Jersey
Wake Medical Center	Raleigh	North Carolina
Washington Hospital Center	Washington	District of Columbia
Washington Regional Medical Center	Fayetteville	Arkansas
West Virginia University School of Medicine	Morgantown	West Virginia
Western Pennsylvania Hospital	Pittsburgh	Pennsylvania
William Beaumont Hospital	Royal Oak	Michigan
Williamson Medical Center	Franklin	Tennessee
Wolfson Children's Hospital	Jacksonville	Florida

**SUPPLEMENTAL TABLE 4** Continued

Center Name	City	State or Territory
Woman's Hospital of Texas, The	Houston	Texas
Women's and Children's Hospital	Lafayette	Louisiana
Yakima Valley Memorial Hospital	Yakima	Washington

CHOP, Children's Hospital of Philadelphia; CJW, Chippenham and Johnston-Willis; CMC, Carolinas Medical Center; KF, Kaiser Foundation; OU, University of Oklahoma; P/SL, Presbyterian/St. Luke's Medical Center; SSM, health system; UF, University of Florida; UPHS, Upper Peninsula Health System; UW, University of Washington; VCU, Virginia Commonwealth University.

**SUPPLEMENTAL TABLE 5** CDC Core Elements of ASPs Among Participating NICUs in All 4 Audits (*N* = 85)

	February 2016, %	November 2016, %	February 2017, %	November 2017, %	<i>P</i>
Leadership commitment	11.8	56.5	67.1	68.2	<.0001
Accountability	56.5	92.9	91.8	96.5	<.0001
Drug expertise	65.9	85.9	85.9	88.2	.0004
Time out	23.5	57.6	65.9	78.8	<.0001
Tracking	10.6	72.9	77.6	82.4	<.0001
NHSN reporting	7.1	9.4	15.3	14.1	.0800
Ongoing education	31.8	72.9	80.0	85.9	<.0001
All of the above	0	4.7	5.9	10.6	.0024

The table shows the percent of NICUs that participated in all 4 (*N* = 85) of the VON Day Audits that met each of the core CDC elements of antibiotic stewardship.

**SUPPLEMENTAL TABLE 6** Percent of NICUs With Policies, Protocols, or Guidelines to Standardize the Diagnosis and Antibiotic Treatment of Common Neonatal Conditions (*N* = 85)

	February 2016, %	November 2017, %
Maternal risk factors	44.7	75.3
Suspected or proven		
Early-onset sepsis or meningitis	37.6	74.1
Late-onset sepsis or meningitis	29.4	49.4
Ventilator-associated pneumonia	10.6	27.1
Central venous line infection	22.4	49.4
Urinary tract infection	10.6	36.5
Necrotizing enterocolitis	28.2	44.7
Surgical site infection	10.6	17.6
Prophylaxis for urinary tract infection	21.2	29.4
Prophylaxis for surgery	25.9	29.4
Prophylaxis for fungal sepsis	32.9	40.0
MRSA colonization	41.2	48.2

The table shows the percent of NICUs that participated in all 4 (*N* = 85) of the VON Day Audits that had a policy, protocol, and/or guideline for 1 of the listed common neonatal conditions.