

DUKE ANTIMICROBIAL STEWARDSHIP OUTREACH NETWORK (DASON)

Antimicrobial Stewardship News

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Keeping track of antimicrobial usage: The Antibiotic Stewardship Assessment Portal

The main goal of Antimicrobial Stewardship (AS) and DASON's founding principle is to help member hospitals improve quality of care and patient safety through appropriate antimicrobial use. DASON remains committed to providing data-driven feedback to member hospitals so that stewardship teams can better identify target areas of need. DASON and partner, One Cow Standing, have created the DASON Antimicrobial Stewardship Assessment Portal (ASAP) application that delivers both local and comparative data to member hospitals. DASON personnel are very excited to debut this application. In fact, several DASON hospitals now have the ASAP available for daily use. A brief overview of the DASON ASAP is the topic of this month's newsletter.

Purpose of ASAP:

The DASON ASAP serves three main functions: 1) enables each member hospital to access its own data for review, 2) enables each hospital to compare usage to DASON benchmarks, and 3) provides a way to track the impact of antimicrobial stewardship initiatives. The ASAP gives member hospitals an essential tool to develop a data driven approach to antimicrobial stewardship program design and development. Furthermore, DASON personnel use the ASAP to assist in review of aggregate network data. These reviews help us identify areas of improvement in the network as a whole, which then helps us create useful antibiotic stewardship implementation tools for member hospitals.

Using the ASAP application:

An online ASAP User's Guide with both written and video portions is currently under development. Detailed tip sheets are available and can be found on the DASON website (<https://dason.medicine.duke.edu/dason-asap>). We anticipate that user's will find the **chart** function to be the most valuable tool, so the remainder of the newsletter outlines specific descriptions of the chart functionality.

Logging In:

Because the local DASON database is hosted on member hospitals' networks, the login process will be determined by your home institution. Instructions on where and how to log in will be specific to your hospital, but most users will log in with their username and password for their hospital network.

Charting functions: Plot

ASAP makes 3 different types of plots: 1) year over year, 2) time series, and 3) drill down. **Time series** graphs are used to trend antimicrobial use over time. For example, you may choose this graph if you wanted to see if fluoroquinolone use was increasing or decreasing over a certain time period. **Year over**

year plots put two-time series graphs on the same horizontal time axis. This makes it easy to compare the time trends from one year to the next. This is especially useful because we know that antibiotic use is seasonal (i.e. in general antibiotic use goes up during cold and flu season). For example, you can analyze fluoroquinolone use in 2014 compared to 2015. **Drill down** is used to delve deeper into specific parameters of interest such as specific agents, agent groups, unit types, route, or prescriber. For example, you can look at fluoroquinolone use by unit type or by provider to understand which practice settings most frequently use fluoroquinolones.

Charting functions: Segment by

Segment by options define what goes along the horizontal axis of the plot. Segment by choices are units of time for both years over years and time series plots (e.g. month or quarter). The drill down plot segment by options includes more parameters, such as “agent”, “prescriber”, and “route”.

Charting function: Stratification

Stratification will further divide your vertical axis variable into groups. For example, to evaluate individual fluoroquinolones, simply choose “specific agent” under stratification on a graph of the fluoroquinolone agent group. This will break up each charted bar into stacked bars indicating each agent (or lines if you choose to use a line graph under “options”).

Charting function: Benchmark

You should use the benchmarking function if you are interested in comparing antimicrobial use in your hospital to use in other DASON hospitals. The benchmarking function will not work for certain graphs: year over year plots, or graphs with prescriber or hospital units as the “segment by” metric. The hospital-specific benchmark calculates the DASON network mean with your hospital’s data excluded. The hospital-specific benchmark is most useful because it allows for comparison to a network benchmark that is not influenced by data or skew from your specific hospital. You can click the benchmark line on or off on the graph at the bottom, as well as the 95% prediction interval.

Charting function: Execute

Execute is the function that creates your graph. It requires you to choose the following: plot, segment by, metric, and date range. All other choices, such as stratify, benchmark, and selection of specific units, are optional and do not need to be filled out for the Execute function to run. If you want to change a parameter, you will need to hit Execute again to run your change. If you receive an error message, try adjusting the plot options. If this doesn’t work, refer to our troubleshooting document available on the DASON website or ask your DASON liaison for help.

Future directions of ASAP application

As you can see, the DASON ASAP is a powerful tool for each DASON hospital to analyze antimicrobial use data. These data can then inform decisions on design, implementation, and optimization of antimicrobial stewardship initiatives. As with anything new, we expect there to be some technical glitches. We want you to inform us if you are running into problems because we want to help resolve them. Please contact your DASON liaison directly with questions or concerns about the application. Furthermore, we have lots of future plans for improving the data that goes into and comes out of the ASAP. For example, we hope to further develop the ASAP to include microbiologic outcomes, provide unit-type specific benchmarks, and develop the query tool as an easy medication use evaluation builder. We believe that every stewardship program should have a robust data resource to make informed decisions and demonstrate their successes. The DASON ASAP provides a user friendly means to do just that.