

SHS + UHN

ASP

ANTIMICROBIAL
STEWARDSHIP
PROGRAM



Q2 REPORT

FISCAL YEAR 2017 | 2018



TABLE OF CONTENTS

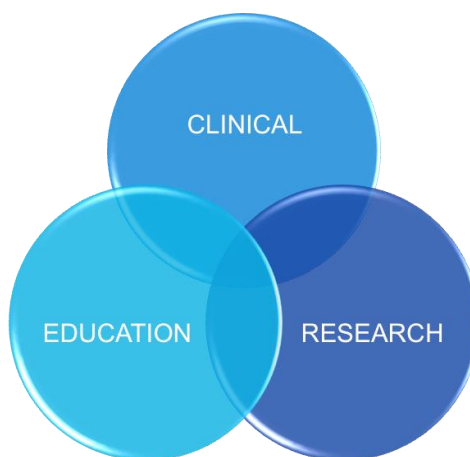
EXECUTIVE SUMMARY	4
FISCAL YEAR 17/18 Q2 RESULTS	9
CRITICAL CARE	9
MOUNT SINAI HOSPITAL: MEDICAL SURGICAL ICU	9
MOUNT SINAI HOSPITAL: NEONATAL ICU	15
TORONTO GENERAL HOSPITAL: CARDIOVASCULAR ICU	17
TORONTO GENERAL HOSPITAL: MEDICAL SURGICAL ICU	22
TORONTO WESTERN HOSPITAL: MEDICAL, SURGICAL, AND NEUROSURGICAL ICU	27
EMERGENCY DEPARTMENT	32
MOUNT SINAI HOSPITAL: EMERGENCY DEPARTMENT	32
GENERAL INTERNAL MEDICINE	34
MOUNT SINAI HOSPITAL: GENERAL INTERNAL MEDICINE	34
TORONTO GENERAL HOSPITAL: GENERAL INTERNAL MEDICINE	36
TORONTO WESTERN HOSPITAL: GENERAL INTERNAL MEDICINE	39
IMMUNOCOMPROMISED HOST	41
PRINCESS MARGARET CANCER CENTRE: LEUKEMIA SERVICE	41

PRINCESS MARGARET CANCER CENTRE: ALLOGENEIC BONE MARROW TRANSPLANT	45
TORONTO GENERAL HOSPITAL: MULTI-ORGAN TRANSPLANT PROGRAM (MOTP)	49
TORONTO REHABILITATION INSTITUTE	52
TORONTO REHABILITATION INSTITUTE: BICKLE	52
TORONTO REHABILITATION INSTITUTE: LYNDHURST	54
TORONTO REHABILITATION INSTITUTE: UNIVERSITY CENTRE	56
BRIDGEPOINT HEALTH	58
BRIDGEPOINT HEALTH: HOSPITAL-WIDE	58
BEST PRACTICE GUIDELINES AND ALGORITHMS	59
EDUCATION	60
MEMBERSHIPS	60
STRATEGIC PLANNING	61
APPENDIX 1: FY 17/18 Q2 TOP 5 ANTIMICROBIALS BY USAGE (DDDS PER 100 PATIENT DAYS) AND EXPENDITURES BY ICU SITE	62
APPENDIX 2: GENERAL INTERNAL MEDICINE FY 17/18 Q2 TOP 5 ANTIMICROBIALS BY USAGE (DDDS PER 100 PATIENT DAYS) AND EXPENDITURES	63

“Getting patients the right antibiotics, when they need them”

EXECUTIVE SUMMARY

The Sinai Health System-University Health Network Antimicrobial Stewardship Program (SHS-UHN ASP) was established in 2009. The SHS-UHN ASP uses a collaborative and evidence-based approach to improve the quality of antimicrobial use by getting patients the right antibiotics when they need them. The ASP follows data-driven quality improvement methodology to pursue the best possible clinical outcomes for its patients.



The SHS-UHN ASP blends research, education, and clinical care to take a leadership role in antimicrobial stewardship and improving the quality of health care.

ANTIMICROBIAL CONSUMPTION AND COSTS

The ASP works with clinical teams across both Sinai Health System (Bridgepoint Health and Mount Sinai Hospital (MSH)) and University Health Network (Princess Margaret Cancer Centre (PM), Toronto General Hospital (TGH), Toronto Rehabilitation Institute (TRI), and Toronto Western Hospital (TWH)).

Where possible, we show Defined Daily Doses (DDD) together with Days of Therapy (DOT). The metrics are extracted from the hospital pharmacy databases and the Provincial Critical Care Information System (CCIS). Although these two metrics are closely related, using lower or higher doses of antimicrobials will result in a corresponding change in DDD without any change in DOT (i.e. inpatients with renal dysfunction, extremes of body mass, or central nervous system infections.) Table 1 summarizes antimicrobial usage and cost in the various units and services at SHS and UHN.

We have seen a **significant increase in daptomycin use** (i.e. cost and consumption) at TGH-MSICU, TGH-GIM, TGH-MOTP, and PM Leukemia Service. This is related to a recognized increase in infections due to vancomycin-resistant enterococci (VRE) in these facilities/units.

Table 1: Summary of Antimicrobial Usage and Cost by Hospital/Unit

Hospital/Unit	Antimicrobial Usage	Antimicrobial Cost
Mount Sinai Hospital: Medical Surgical ICU	↑	↓
Mount Sinai Hospital: Neonatal ICU	↓	↓
Toronto General Hospital: Cardiovascular ICU	↓	↓
Toronto General Hospital: Medical Surgical ICU	↓	↑
Toronto Western Hospital: Medical Surgical Neurosurgical ICU	↑	↓
Mount Sinai Hospital: General Internal Medicine	↑	↑
Toronto General Hospital: General Internal Medicine	↑	↑
Toronto Western Hospital: General Internal Medicine	↑	↓
Princess Margaret Cancer Centre: Leukemia Service	↑	↑
Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant	↑	↑
Toronto General Hospital: Multi-Organ Transplant Program	↑	↑
Toronto Rehabilitation Institute: Bickle	↓	↓
Toronto Rehabilitation Institute: Lyndhurst	↓	↓
Toronto Rehabilitation Institute: University Centre	↑	↑



Decrease compared to previous YTD



Increase of < 10% compared to previous YTD



Increase of > 10% compared to previous YTD

FISCAL YEAR 17/18 Q2 HIGHLIGHTS

Research – Published In This Quarter

The following articles were published or accepted for publication in peer-reviewed medical journals:

- Sasson G, Bai AD, Showler A, Burry L, Steinberg M, Ricciuto DR, Fernandes T, Chiu A, Raybardhan S, Science M, Fernando E, Morris AM, Bell CM. Staphylococcus aureus bacteremia in immunosuppressed patients: a multicenter, retrospective cohort study. *Clin Microbiol Infect*. 2017 Jul;36(7): 1231-41.

- Bai AD, Steinberg M, Showler A, Burry L, Bhatia RS, Tomlinson GA, Bell CM, Morris AM. Diagnostic Accuracy of Transthoracic Echocardiography For Infective Endocarditis Findings Using Transesophageal Echocardiography as the Reference Standard: A Meta-Analysis. *J Am Soc Echocardiogr*. 2017 Jul;30(7): 639-46.e8.
- McIntyre M, Naik L, Bell CM, Morris AM. The development and assessment of a physician-specific antibiotic usage and spectrum feedback tool. *Open Forum Infect Dis*. Volume 4, Issue 3, 1 July 2017, ofx124, <https://doi.org/10.1093/ofid/ofx124>
- Jeffs L, Law M, Zahradnik M, Steinberg M, Maoine M, Jorgoni L, Bell CM, Morris AM, Jeffs L. Engaging Nurses in Optimizing Antimicrobial Use in ICUs: A Qualitative Study. *J Nurs Care Qual*. 2017 August 24. ePub ahead of print. doi: 10.1097/NCQ.0000000000000281
- Bai AD, Agarwal A, Steinberg M, Showler A, Burry L, Tomlinson GA, Bell CM, Morris AM. Clinical predictors and clinical prediction rules to estimate initial patient risk for infective endocarditis in *Staphylococcus aureus* bacteraemia: a systemic review and meta-analysis. *Clin Microbiol Infect*. 2017 Dec;23(12):900-906.
- Dresser L, Bell CM, Steinberg M, Ferguson ND, Lapinsky S, Lazar N, Murphy P, Singh JM, Morris AM. Use of a structured panel process to define antimicrobial prescribing appropriateness in Critical Care. *J Antimicrob Chemother*. doi:10.1093 /jac/dkx341
- So M, Husain S, Nakamachi Y, Costello J, Schuh AC, Steinberg M, Bell CM, Morris AM. Implementing antimicrobial stewardship-oriented guidelines using a change management approach: the example of febrile neutropenia. *Journal of Antimicrobial Stewardship* 2017;1(1):38-48

Best Practices

Several algorithms and best practice guidelines have been developed and implemented into practice across UHN and SHS. The algorithms and best practices can be found [here](#) on our ASP website.

Miranda So (ASP Pharmacist) and Dr. Shahid Husain (ASP Physician) have completed and implemented the “**Empiric Guidelines for Common Infections in Solid Organ Transplant Patients**”. The guidelines have undergone consultative reviews with stakeholders, content experts, and key opinion leaders. Guidelines are being introduced to staff and trainees in the **Multi-Organ Transplant Program** through a series of sessions with each of the transplant organ teams. Under the auspices of antimicrobial stewardship, the guidelines provide best practice recommendations to prescribers, pharmacists, and nurses on diagnostic workup, empiric therapy, and appropriate referral to specialist consultation, including Transplant Infectious Diseases.

An **ASP nurse-focused initiative** aimed at reducing overtreatment of **Asymptomatic Bacteriuria** is currently in progress. This intervention is led by our **ASP Nurse Leader, Linda Jorgoni**, and includes providing audit and feedback to selected units and educational sessions and urine culture surveys to assess nurse behaviour and sentiments towards urine cultures. We are currently in the data collection phase, and the results of this initiative will help to further inform us of the best strategies to support knowledge translation and reduce unnecessary urine C&S utilization and reduce asymptomatic bacteriuria and/or antibiotic usage.

Provincial, National, and International Role

On June 15, 2017, ASP team members Dr. Andrew Morris and Yoshiko Nakamachi were asked to appear as expert witnesses before the **House Standing Committee on Health (HESA)** in Ottawa. They were called upon to provide expert testimony on antimicrobial resistance during the 42nd Parliament, 1st session meeting. Dr. Morris spoke as Chair of the Antimicrobial Stewardship and Resistance Committee, **Association of Medical Microbiology and Infectious Disease Canada**. Ms. Nakamachi spoke on behalf of the **Canadian Nurses Association**. On **November 2, 2017**, **Dr. Morris** was requested to appear for a second time as an expert witness, this time speaking as an Infectious Diseases and ASP Physician expert representing SHS-UHN ASP.

In Q2, and following a visit from the **Ministry of Health and Long-Term Care (MOHLTC)**, the SHS-UHN ASP has partnered with the MOHLTC and has co-developed an Ontario Strategy for antimicrobial resistance (AMR). Specifically, the proposed strategy includes:

- Surveillance of antimicrobial use and feedback to users for peer comparison
 - Setting of standards for hospital-based reporting of usage and inclusion in HQO Quality-Improvement Plans
 - Having mandatory provincial point prevalence audits/surveys of antimicrobial use
- Setting standards for Antimicrobial Prescribing
- Moving to standardize and centralize antimicrobial purchasing province-wide
- Developing Human Resources in Antimicrobial Stewardship
- Developing and implementing a public awareness campaign regarding antimicrobial resistance and antimicrobial use

The SHS-UHN ASP continues to work closely with **HealthCareCAN**, the **National Collaborating Centre for Infectious Diseases (NCCID)**, and the **Public Health Agency of Canada (PHAC)** to inform our national health leaders on Antimicrobial Stewardship (AMS) and Antimicrobial Resistance (AMR). Members of our ASP team Dr. Morris and Ms. Nakamachi presented at the Canadian Public Health Association's annual conference on both AMS and AMR. In the months to come, and with the support of PHAC, BD, and Public Health Ontario, the SHS-UHN ASP will be implementing an antimicrobial survey tool across Canada. This tool, NAPS (National Antimicrobial Prescribing Survey), will collect information about antibiotic prescriptions, the related diagnoses, and the appropriateness of the prescription.



Aligned with the Federal Government's plan on addressing AMR, [Tackling Antimicrobial Resistance and Antimicrobial Use – A Pan Canadian Framework for Action](#), a Letter of Intent (LOI) has been submitted for an AMR NCE (Network of Centres of Excellence) competition. The proposed AMR NCE known as CANresist has brought together over 150 of Canada's best researchers in AMR and AMS. Should the LOI be shortlisted, the CANresist directorate of Drs. Andrew Morris (SHS-UHN ASP), David Patrick (BCCDC), and J. Scott Weese (University of Guelph), and Yoshiko Nakamachi (SHS-UHN ASP) will submit a full application for funding. The NCE competition shortlist is expected to be announced in February 2018.

The SHS-UHN ASP continues to be a leader in antimicrobial stewardship and is currently working with, and providing expert guidance to, over 30 hospitals as well as to **PSASS** (Pharmacy Students for Antimicrobial Stewardship Society), **DSASS** (Dental Students for Antimicrobial Stewardship Society), and **SASS** (Students for Antimicrobial Stewardship Society).



The Leslie Dan Faculty of Pharmacy at the University of Toronto continues to be the only Pharmacy School in Canada to offer an antimicrobial stewardship elective course, which is led by **Miranda So**, Assistant Professor (SHS-UHN ASP Pharmacist).

FISCAL YEAR 17/18 Q2 RESULTS

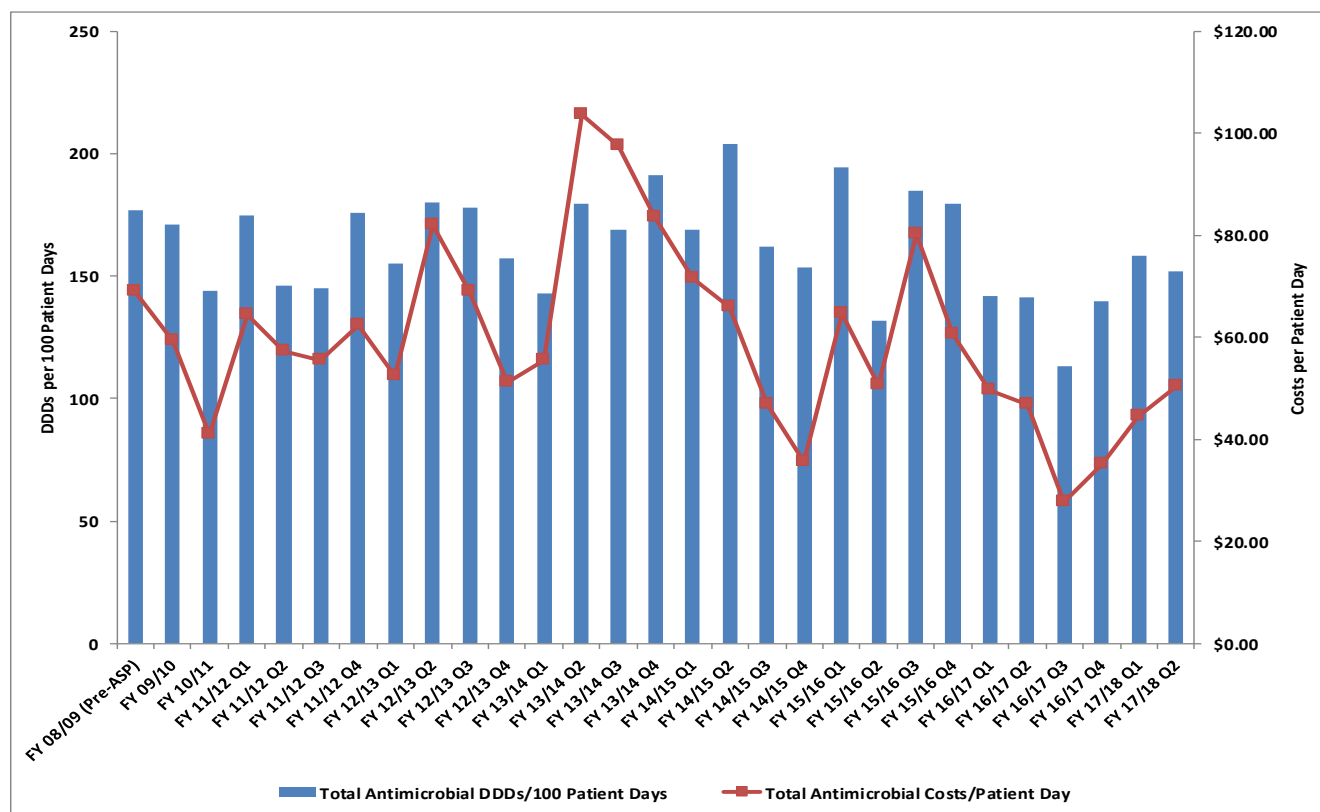
CRITICAL CARE

Mount Sinai Hospital: Medical Surgical ICU

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 9.3% compared to YTD last year.
- Antimicrobial costs per patient day decreased (↓) by 1.5% compared to YTD last year.
- Antibacterial costs per patient day increased (↑) by 34.5% compared to YTD last year.
- Antifungal costs per patient day decreased (↓) by 12.4% compared to YTD last year.
- NB: Patients transferred from Princess Margaret accounted for 10% of patient visits and 54% of the antimicrobial costs.

Mount Sinai Hospital: Medical Surgical ICU Antimicrobial Consumption and Costs Per Patient Day



To view **Appendix 1: FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 Patient Days) and Expenditures by ICU Site**, please click [here](#).

Mount Sinai Hospital: Medical Surgical ICU Antimicrobial Consumption as Defined Daily Dose versus Antimicrobial Consumption as Days of Therapy

- Antibacterial Days of Therapy (DOT) per 100 patient days decreased (↓) by 0.8% compared to YTD last year.
- Antifungal Days of Therapy (DOT) per 100 patient days increased (↑) by 2.3% compared to YTD last year.

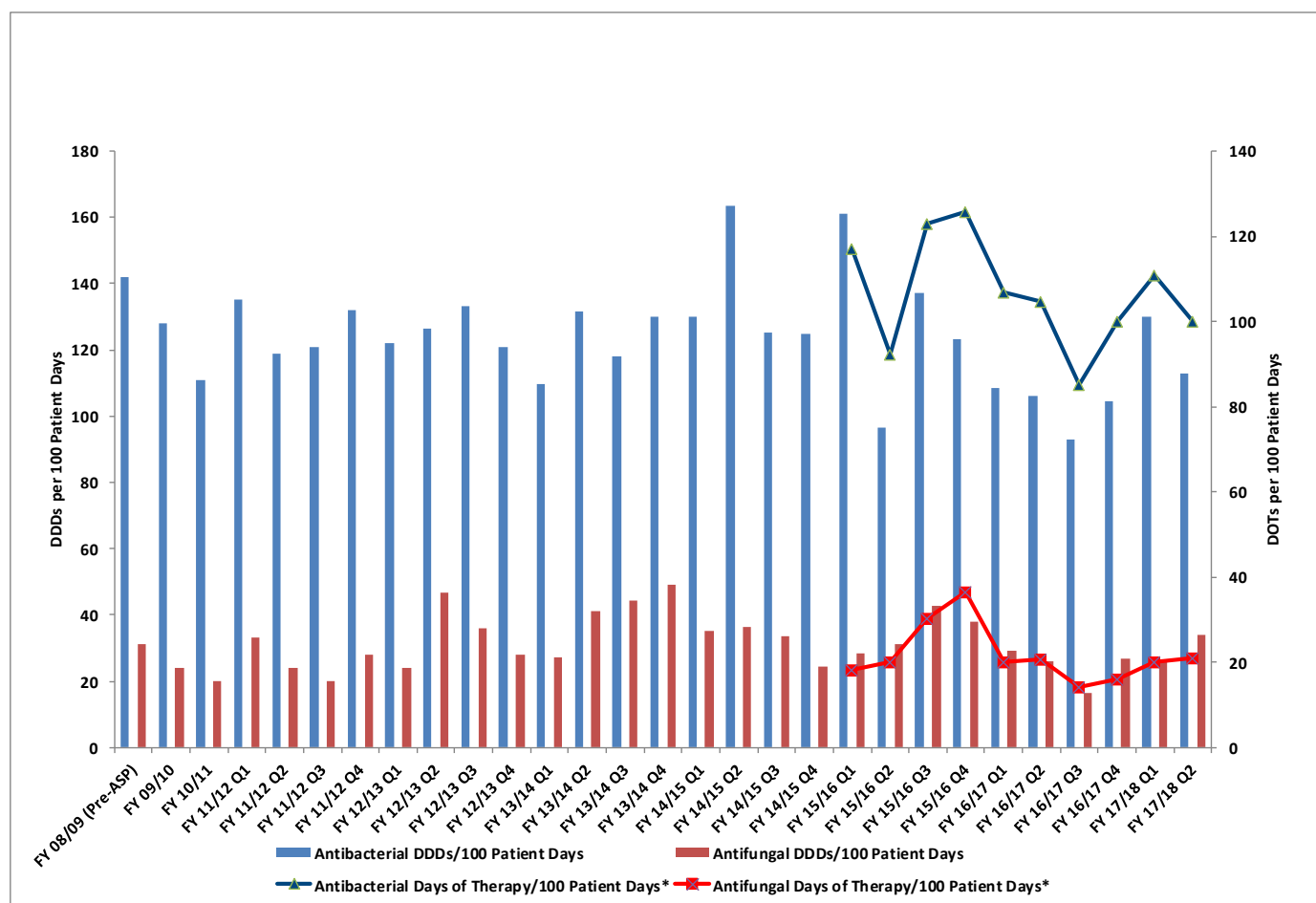


Table 2: Mount Sinai Hospital: Medical Surgical ICU

Indicators	FY 08/09 (Pre-ASP)	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
										Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs															
Total Antimicrobial DDDs/100 Patient Days	177	171	144	167	170	172	164	156	135	158	152			155	142
Systemic Antibacterial DDDs/100 Patient Days	142	128	111	128	127	123	136	116	103	130	113			121	107
Systemic Antifungal DDDs/100 Patient Days	31	24	20	33	35	41	25	32	25	26	34			30	28
Total Antimicrobial Costs	\$332,724	\$285,975	\$193,129	\$279,859	\$291,470	\$424,044	\$232,814	\$274,258	\$187,684	\$50,392	\$62,848			\$113,240	\$113,802
Total Antimicrobial Costs/Patient Day	\$69.01	\$59.23	\$40.95	\$59.22	\$62.37	\$85.36	\$62.54	\$61.45	\$39.96	\$44.44	\$50.36			\$47.54	\$48.26
Systemic Antibacterial Costs	\$174,339	\$142,134	\$95,773	\$125,339	\$134,811	\$108,886	\$92,928	\$68,246	\$57,257	\$20,134	\$20,075			\$40,209	\$29,596
Systemic Antibacterial Costs/Patient Day	\$36.16	\$29.44	\$20.31	\$26.94	\$28.85	\$21.92	\$20.71	\$15.29	\$12.19	\$17.75	\$16.09			\$16.88	\$12.55
Systemic Antifungal Costs	\$143,100	\$132,519	\$88,998	\$141,877	\$144,811	\$296,573	\$134,504	\$189,661	\$119,234	\$29,026	\$39,957			\$68,983	\$77,988
Systemic Antifungal Costs/Patient Day	\$29.68	\$27.45	\$18.87	\$30.50	\$30.99	\$59.70	\$40.53	\$42.50	\$25.39	\$25.60	\$32.02			\$28.96	\$33.07
Antibacterial Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	n/a	111	109	115	99	111	100			105	106
Antifungal Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	n/a	17	21	27	18	20	21			21	20
Patient Care Outcomes															
Hospital-Acquired C. difficile Cases (rate per 1,000 pt days)	NA	NA	NA	5 (1.07)	8 (1.71)	4 (0.91)	7 (1.59)	5 (1.12)	2 (0.43)	1 (0.88)	1 (0.8)			2 (0.84)	0 (0.00)
ICU Average Length of Stay (Days)	5.84	5.57	5.67	5.51	5.24	6.10	5.26	4.45	4.195	4.015	4.661			4.015	4.3
ICU Mortality Rate (as a %)	20.1	17.6	16.3	16.5	17.04	15.3	13.9	14.2	12.5	10.7	18.5			10.7	11.1
ICU Readmission Rate Within 48 Hrs (as a %)	3.2	2.9	2.7	2.7	1.86	3.2	2.6	2.1	2.5	4.3	3.2			4.3	1.6
ICU Ventilator Days	NA	3286	2934	2677	2749	3069	2597	2504	2231	702	880			702	1168
ICU Multiple Organ Dysfunction Score (MODS)	4.00	4.04	4.12	4.25	4.62	4.87	4.73	4.43	3.92	3.69	4.03			3.69	3.8

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs + systemic antivirals; non-systemic antimicrobials are excluded.
Data Sources: Antimicrobial DDD and Costs (PharmNet), C difficile (Infection Control Dashboards), Other ICU Patient Care Indicators (Critical Care Information System).

Historical antimicrobial usage and cost data updated due to the discovery that selected added drug dosages (Fluconazole 400mg/200ml bag, Pip-Tazo 13.5gm vial, Daptomycin 500mg vial) were not included in the report. Data have been revised to include Fluconazole starting August 2013, Pip-Tazo January 2015, and Daptomycin, November 2015.

There was a calculation error for the ICU Readmission Rate for FY 16/17 Q3. That figure has now been corrected.

Table 3: Mount Sinai Hospital: Medical Surgical ICU Total Antimicrobial Costs

MSH ICU Total Antimicrobial Costs (Antimicrobial Cost per Patient Day)													
	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Q1	FY 17/18 Q2	FY 17/18 Q3	FY 17/18 Q4	FY 17/18 YTD	Previous YTD
Non-PM Patients	\$78,737 (\$21.14)	\$87,931 (\$25.42)	\$109,283 (\$31.77)	\$150,870 (\$37.54)	\$135,395 (\$37.70)	\$71,509 (\$23.5)	\$59,167 (\$9.78)	\$18,333 (\$16.82)	\$33,942 (\$29.31)			\$18,333 (\$16.73)	\$17,979 (\$8.28)
PM Patients	\$114,392 (\$179.02)	\$191,928 (\$181.58)	\$182,188 (\$249.91)	\$273,174 (\$317.64)	\$97,419 (\$135.68)	\$202,749 (\$218.05)	\$755,530 (\$191.53)	\$32,058 (\$183.19)	\$28,906 (\$222.36)			\$32,058 (\$191.96)	\$41,928 (251.06)
Total	\$193,129 (\$44.26)	\$279,859 (\$61.97)	\$291,470 (\$69.91)	\$424,044 (\$87.40)	\$232,814 (\$52.46)	\$274,258 (\$67.17)	\$1,222,586 (27.93)	\$50,392 (\$39.84)	\$62,848 (\$48.80)			\$50,392 (\$39.90)	\$59,907 (25.62)

Note: 15/16 is open year data; totals and cost per day may change based on coding changes. Antimicrobial costs from PharmNet; ICU visits and patient days from CIHI DAD Database.

**Mount Sinai Hospital: Medical Surgical ICU
Proportional Antimicrobial Costs for PM and Non-PM Patients**
(with costs/patient day indicated)

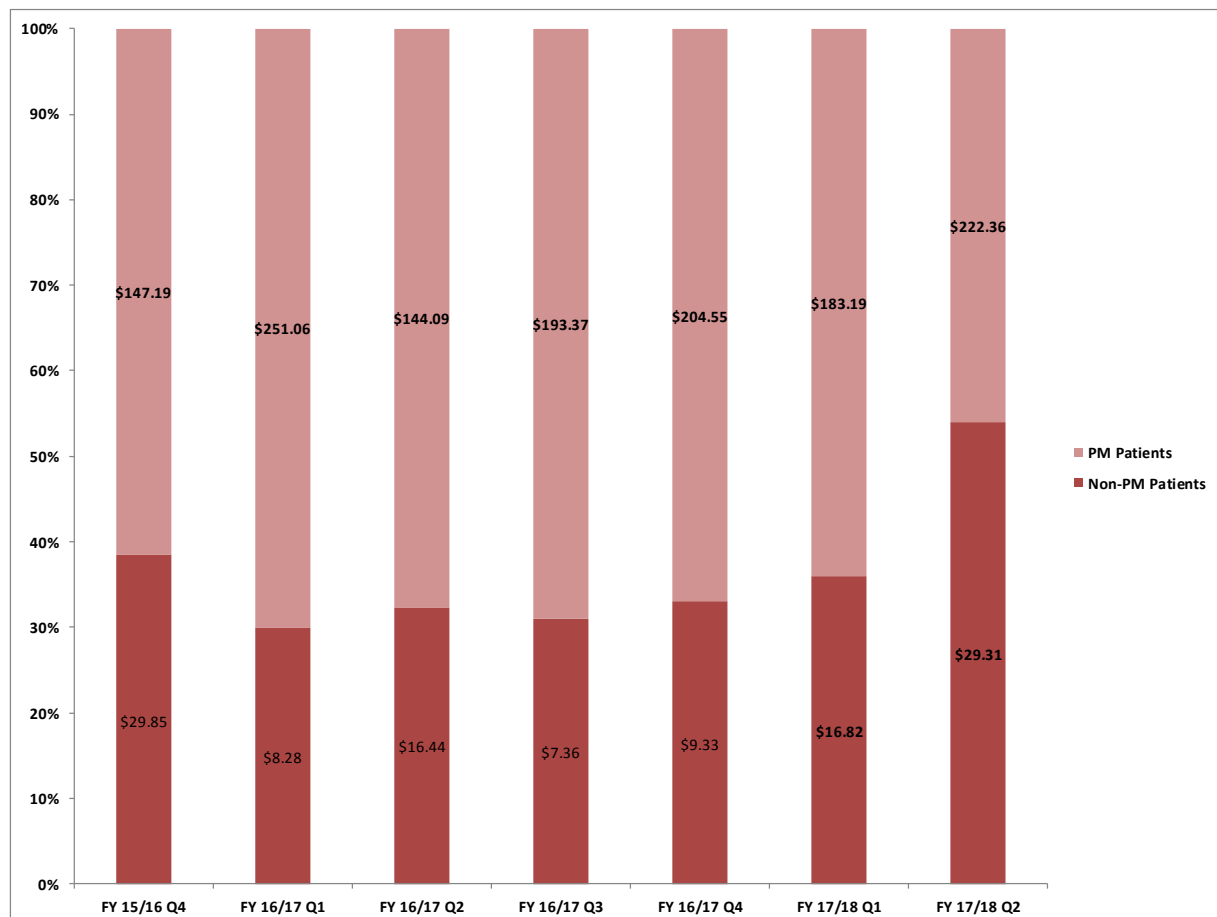
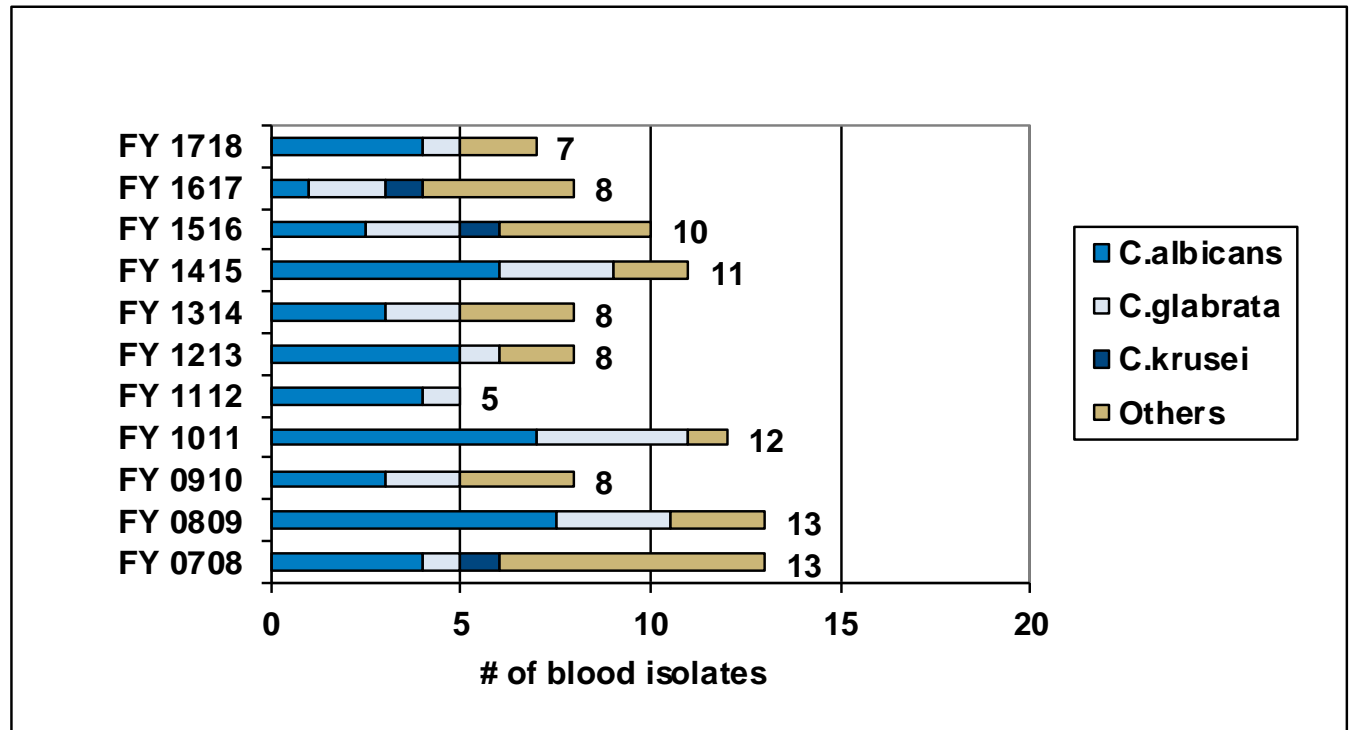
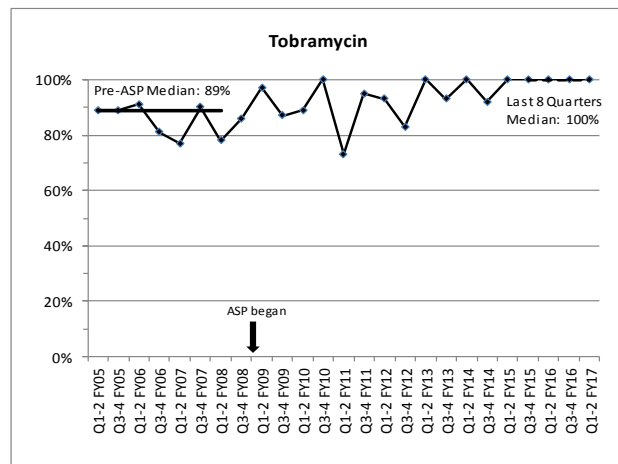
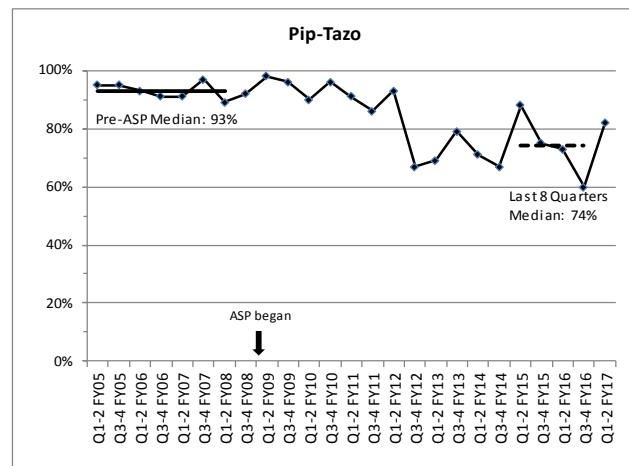
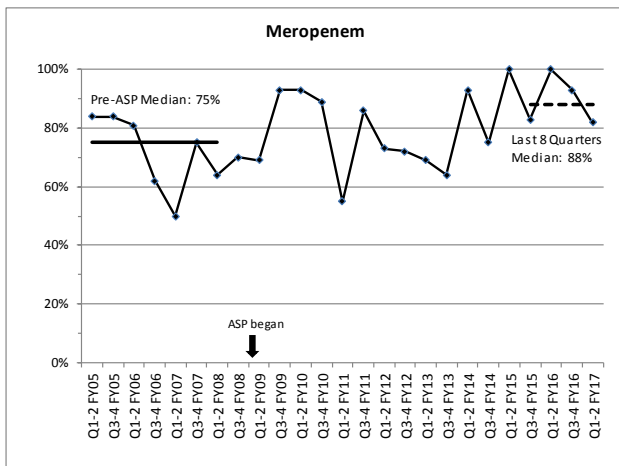
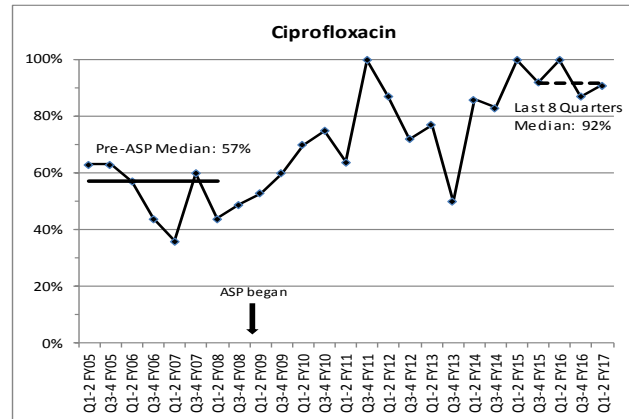
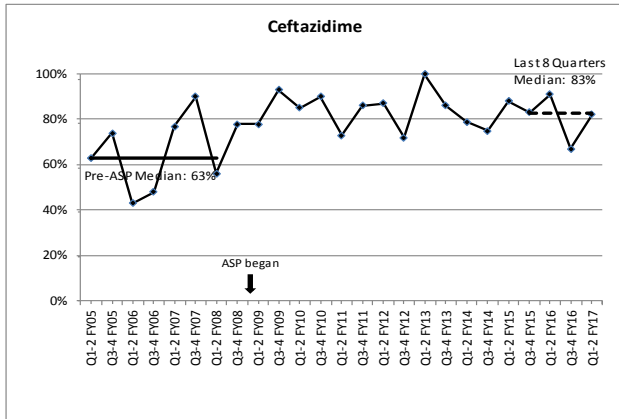


Table 4: Yeast Species Isolated in Blood – Mount Sinai Hospital: Medical Surgical ICU



If a patient has more than one organism per culture, it is represented as 0.5.

MSH ICU Pseudomonas Susceptibility



Mount Sinai Hospital: Neonatal ICU

Currently there are no active ASP rounds in the NICU, however, we have continued to collect days of therapy (DOT), which is considered to be the standard metric for antimicrobial consumption for neonates. The FY 17/18 Q2 summary includes:

- Antimicrobial days of therapy (DOT) per 100 patient days decreased (↓) by 4.4% compared to YTD last year.
- Antimicrobial costs per patient day decreased (↓) by 8.5% compared to YTD last year.

Mount Sinai Hospital: Neonatal ICU Antimicrobial Consumption and Costs Per Patient Day

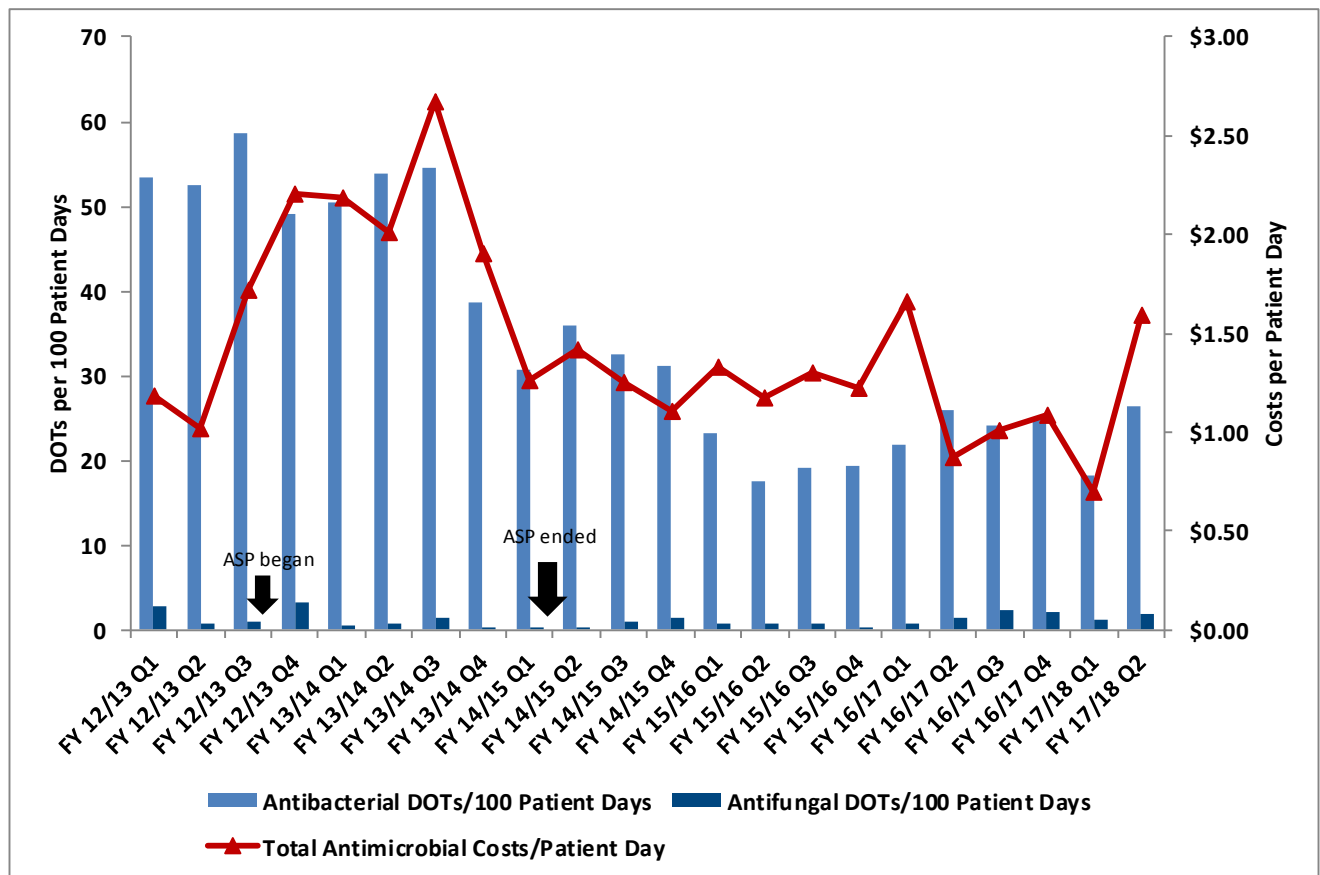


Table 5: Mount Sinai Hospital: Neonatal ICU

Indicators	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY17/18 Performance					YTD of Previous Year
							Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs												
Total Antimicrobial DOTs/100 Patient Days	67.3	55.4	49.4	33.5	20.6	25.8	19.5	28.1			23.9	25.0
Systemic Antibacterial DOTs/100 Patient Days	65.1	53.5	48.7	32.7	19.9	24.2	18.3	26.4			22.4	24.0
Systemic Antifungal DOTs/100 Patient Days	2.2	1.8	0.7	0.8	0.7	1.6	1.2	1.8			1.5	1.0
Total Antimicrobial Costs	\$16,415	\$17,682	\$26,162	\$21,371	\$21,232	\$19,618	\$2,988	\$6,952			\$9,940	\$10,892
Total Antimicrobial Costs/Patient Day	\$1.31	\$1.51	\$2.17	\$1.26	\$1.26	\$1.15	\$0.70	\$1.59			\$1.15	\$1.26
Systemic Antibacterial Costs	\$14,783	\$16,505	\$25,290	\$20,516	\$20,804	\$18,247	\$2,965	\$6,346			\$9,312	\$10,529
Systemic Antibacterial Costs/Patient Day	\$1.18	\$1.41	\$2.10	\$1.21	\$1.23	\$1.07	\$0.70	\$1.45			\$1.08	\$1.22
Systemic Antifungal Costs	\$1,632	\$1,177	\$872	\$855	\$428	\$1,372	\$22	\$606			\$628	\$363
Systemic Antifungal Costs/Patient Day	\$0.13	\$0.10	\$0.07	\$0.05	\$0.03	\$0.08	\$0.005	\$0.14			\$0.07	\$0.04

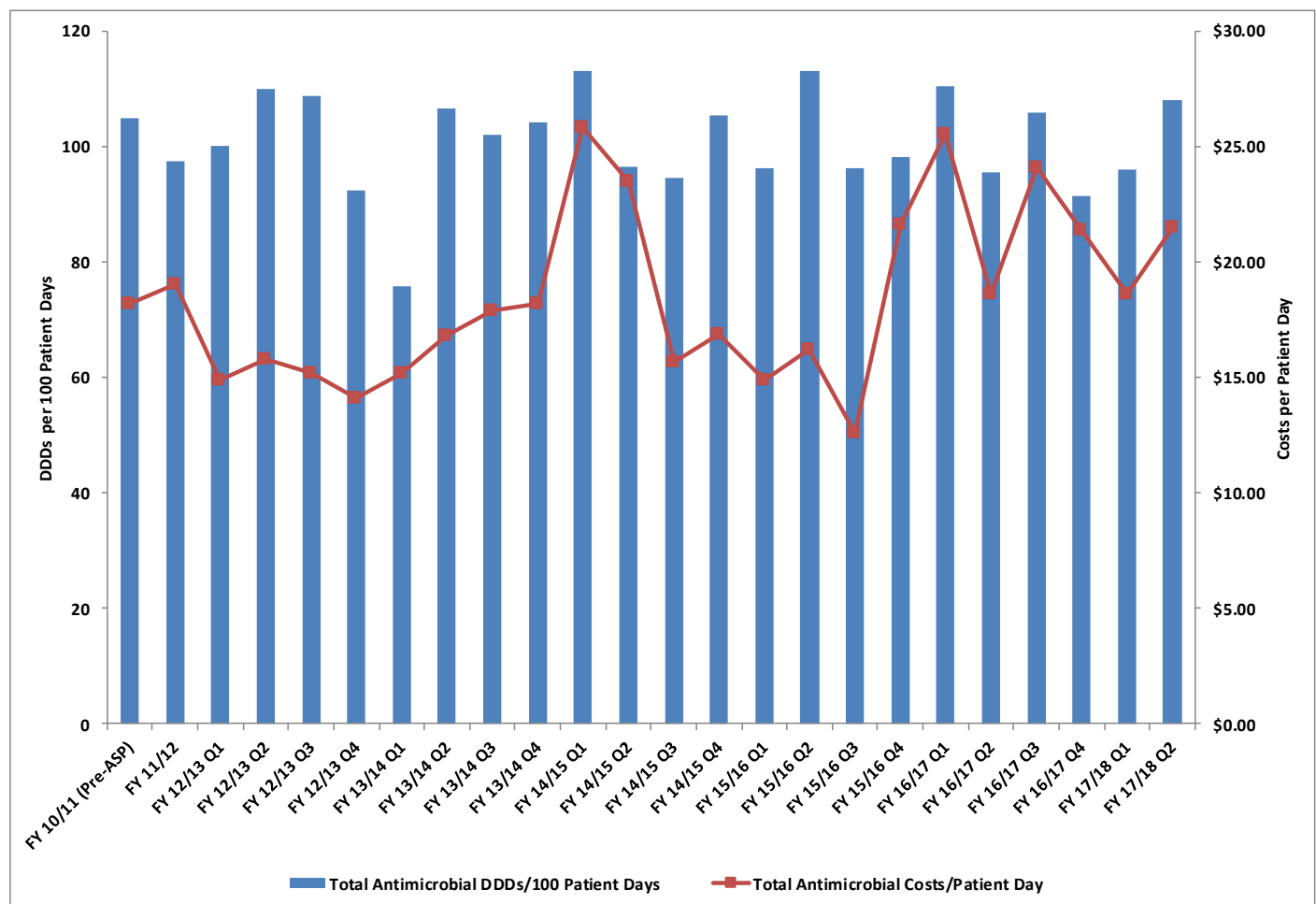
Notes: Effective January 15, 2014, the NICU changed to a mixed-acuity model of care. Prior to this, ASP reported level 3 pharmacy data only. As of January 15, pharmacy data includes both level 2 and level 3 usage and cost. Patient days include both level 2 and 3 days; January level 2 days were determined by dividing the total days for the month by 2, since the change occurred midway through the month. Days of Therapy (DOT) was used as the metric for antimicrobial consumption, which is considered to be the standard for neonates.

Toronto General Hospital: Cardiovascular ICU

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) decreased (↓) by 0.9% compared to YTD last year.
 - Antimicrobial costs per patient day decreased (↓) by 9.3% compared to YTD last year.
 - Antibacterial costs per patient day decreased (↓) by 1.5% compared to YTD last year.
 - Antifungal costs per patient day decreased (↓) by 24.8% compared to YTD last year.
- NB: micafungin prophylaxis in heart transplant patients had stopped in October 2015 and was then reinstated in March of 2016.

Toronto General Hospital: Cardiovascular ICU Antimicrobial Consumption and Costs Per Patient Day



Toronto General Hospital: Cardiovascular ICU Antimicrobial Consumption as Defined Daily Dose Versus Antimicrobial Consumption as Days of Therapy

- Antibacterial Days of Therapy (DOT) per 100 patient days increased (↑) by 1.7% compared to YTD last year.
- Antifungal Days of Therapy (DOT) per 100 patient days decreased (↓) by 8.9% compared to YTD last year.

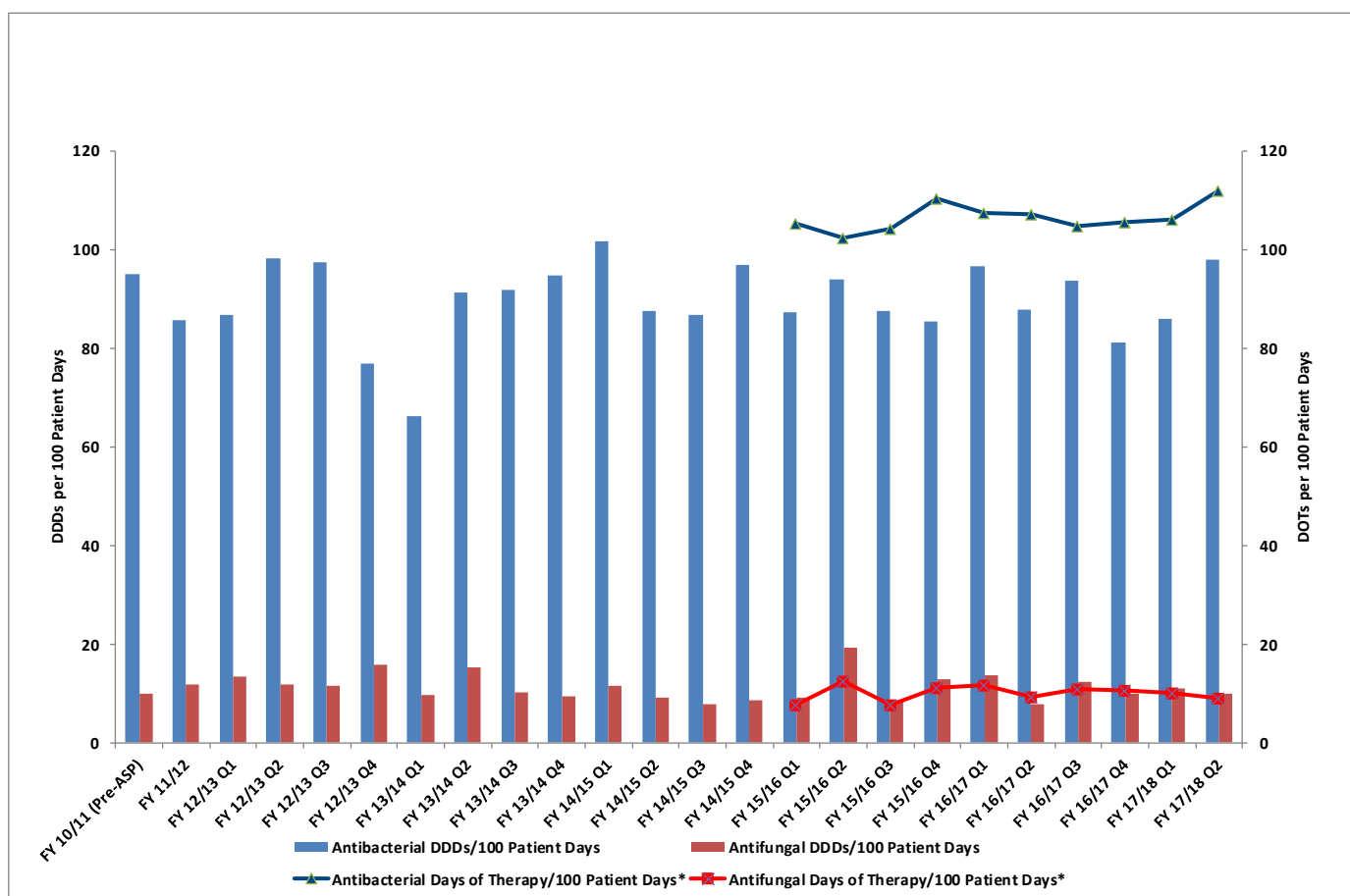


Table 6: Toronto General Hospital: Cardiovascular ICU

Indicators	FY 10/11 (Pre-ASP)	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
								Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs													
Total Antimicrobial DDDs/100 Patient Days	105	98	102	97	102	101	101	96	108			102	103
Systemic Antibacterial DDDs/100 Patient Days	95	86	89	86	93	89	90	86	98			92	92
Systemic Antifungal DDDs/100 Patient Days	10	12	13	11	9	13	11	11	10			10	11
Total Antimicrobial Costs	\$108,172	\$108,464	\$85,916	\$100,736	\$129,314	\$110,716	\$153,093	\$31,705	\$38,565			\$70,270	\$75,300
Total Antimicrobial Costs/Patient Day	\$18.20	\$19.06	\$14.99	\$17.00	\$20.46	\$16.34	\$22.44	\$18.60	\$21.50			\$20.08	\$22.15
Systemic Antibacterial Costs	\$100,375	\$99,261	\$74,232	\$80,204	\$91,366	\$85,343	\$96,782	\$22,253	\$28,401			\$50,654	\$49,968
Systemic Antibacterial Costs/Patient Day	\$16.89	\$17.44	\$12.95	\$13.54	\$14.45	\$12.60	\$14.19	\$13.05	\$15.83			\$14.48	\$14.70
Systemic Antifungal Costs	\$7,797	\$9,204	\$11,684	\$20,532	\$37,948	\$25,373	\$56,311	\$9,452	\$10,164			\$19,616	\$25,332
Systemic Antifungal Costs/Patient Day	\$1.31	\$1.62	\$2.04	\$3.47	\$6.00	\$3.75	\$8.26	\$5.54	\$5.67			\$5.61	\$7.45
Antibacterial Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	129	105	106	106	112			109	107
Antifungal Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	28	10	11	10	9			10	10
Patient Care Outcomes													
Hospital-Acquired C. difficile Cases (rate per 1,000 pt days)	2 (0.34)	5 (0.88)	6 (1.05)	7 (1.18)	7 (1.11)	7 (1.03)	6 (0.88)	2 (1.17)	6 (3.34)			8 (2.29)	3 (0.88)
ICU Average Length of Stay (days)	3.12	2.95	2.97	3.20	3.46	3.45	3.48	3.08	3.21			3.14	3.26
ICU Mortality Rate (as a %)	3.5	3.0	3.0	4.6	4.6	4.0	3.7	5.0	4.1			4.60	4.4
ICU Readmission Rate Within 48 Hrs (as a %)	1.6	2.2	1.8	2.2	2.4	1.6	2.0	2.5	1.9			2.22	1.9
Central Line Infection Rate (per 1000 pt days)	0.73	0.17	0.34	0.16	0.15	0.53	0.84	0.0	2.08			1.04	0.8
Ventilator-Associated Pneumonia Rate (per 1,000 pt days)	2.99	2.80	1.91	1.73	2.81	0.94	4.06	0.93	4.24			2.59	2.72
ICU Multiple Organ Dysfunction Score (MODS)	6.22	6.07	5.51	5.77	5.60	5.83	6.04	6.02	5.99			6.01	5.99
ICU Ventilator Days	3015	3571	3676	4049	3925	4239	4917	1073	1179			2252	2859

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity). *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

There was a calculation error for the ICU Readmission Rate for FY 16/17 Q3. That figure has now been corrected.

Table 7: TGH CVICU FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDD per 100 patient days) and Expenditures

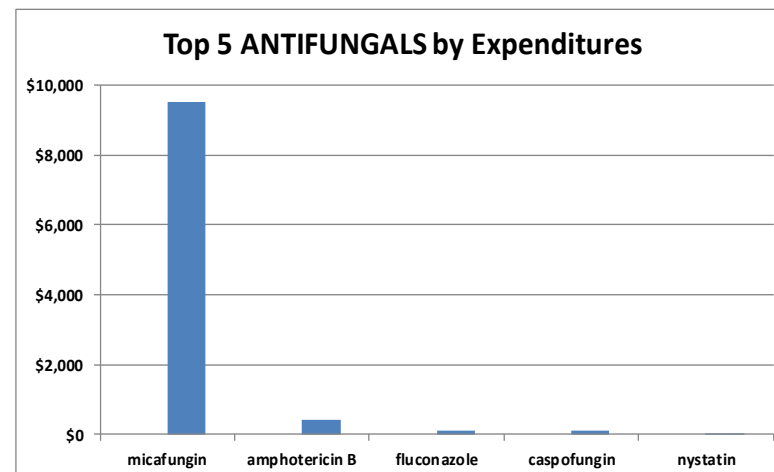
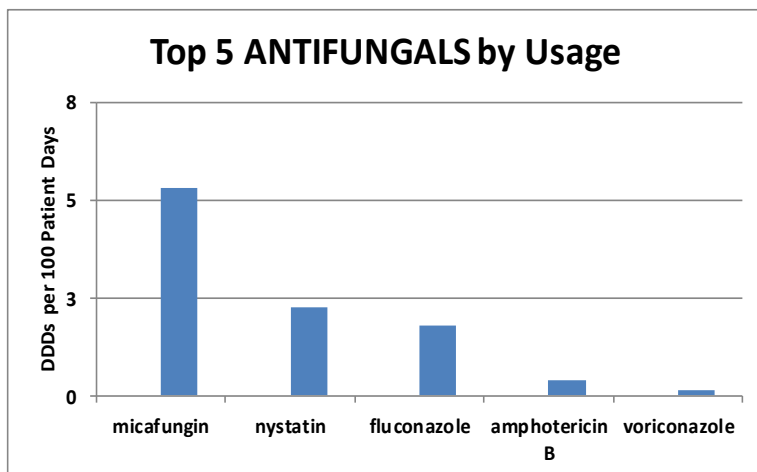
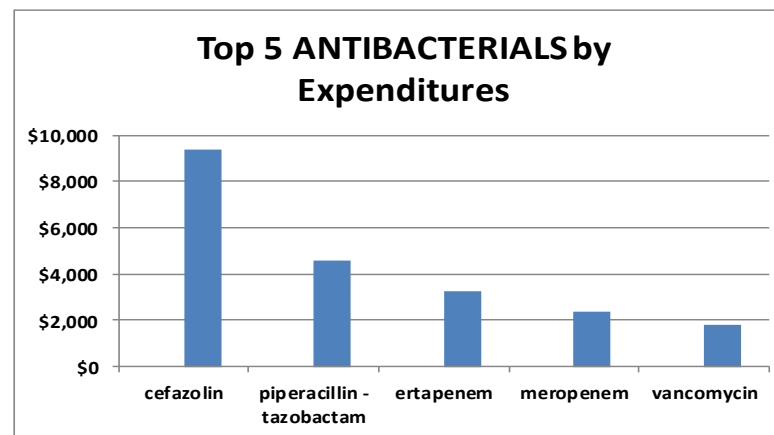
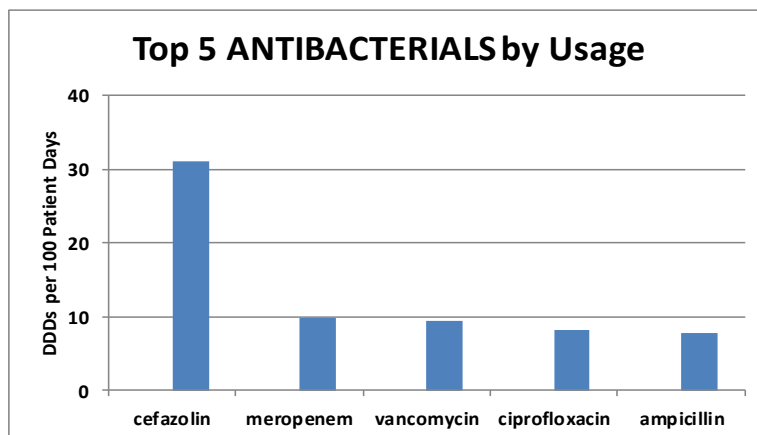


Table 8: Daptomycin Use – Toronto General Hospital Cardiovascular ICU

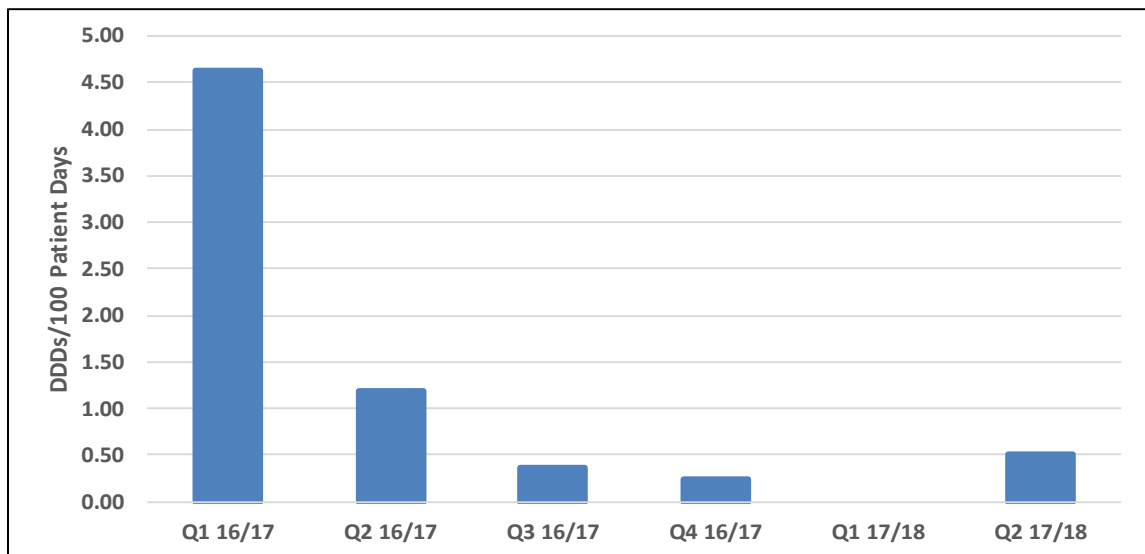
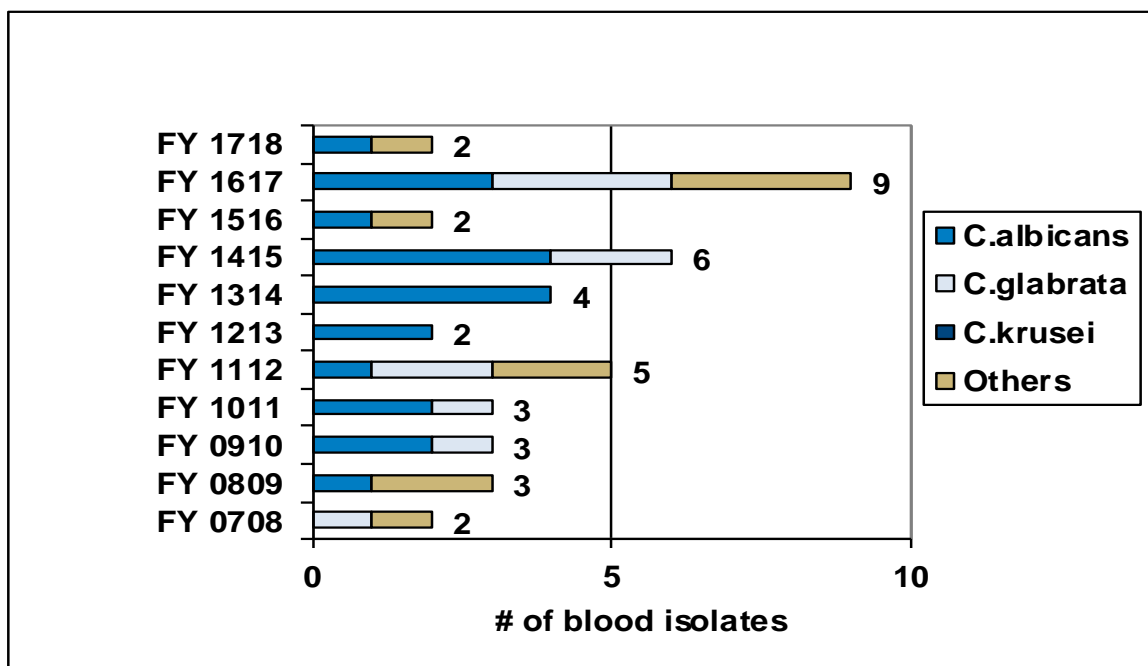


Table 9: Yeast Species Isolated in Blood – Toronto General Hospital Cardiovascular ICU



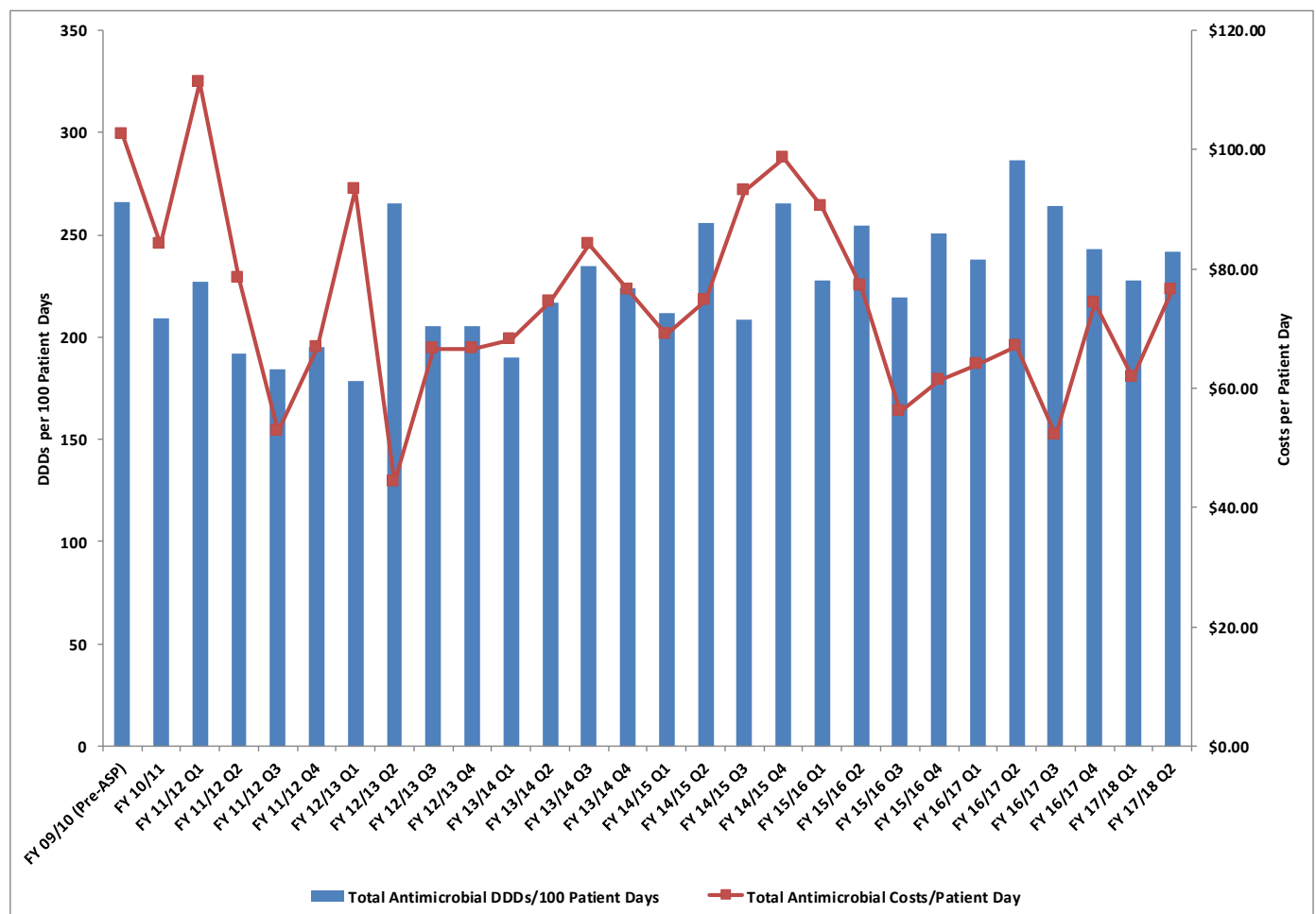
If a patient has more than one organism per culture, it is represented as 0.5.

Toronto General Hospital: Medical Surgical ICU

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) decreased (↓) by 9.8% compared to YTD last year.
- Antimicrobial costs per patient day increased (↑) by 5.8% compared to YTD last year.
- Antibacterial costs per patient day decreased (↓) by 2.7% compared to YTD last year.
- Antifungal costs per patient day increased (↑) by 14.6% compared to YTD last year.

Toronto General Hospital: Medical Surgical ICU Antimicrobial Consumption and Costs Per Patient Day



To view **Appendix 1: FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 Patient Days) and Expenditures by ICU Site**, please click [here](#).

Toronto General Hospital: Medical Surgical ICU Antimicrobial Consumption as Defined Daily Dose Versus Antimicrobial Consumption as Days of Therapy

- Antibacterial Days of Therapy (DOT) per 100 patient days decreased (↓) by 9.0% compared to YTD last year.
- Antifungal Days of Therapy (DOT) per 100 patient days decreased (↓) by 19.2% compared to YTD last year.

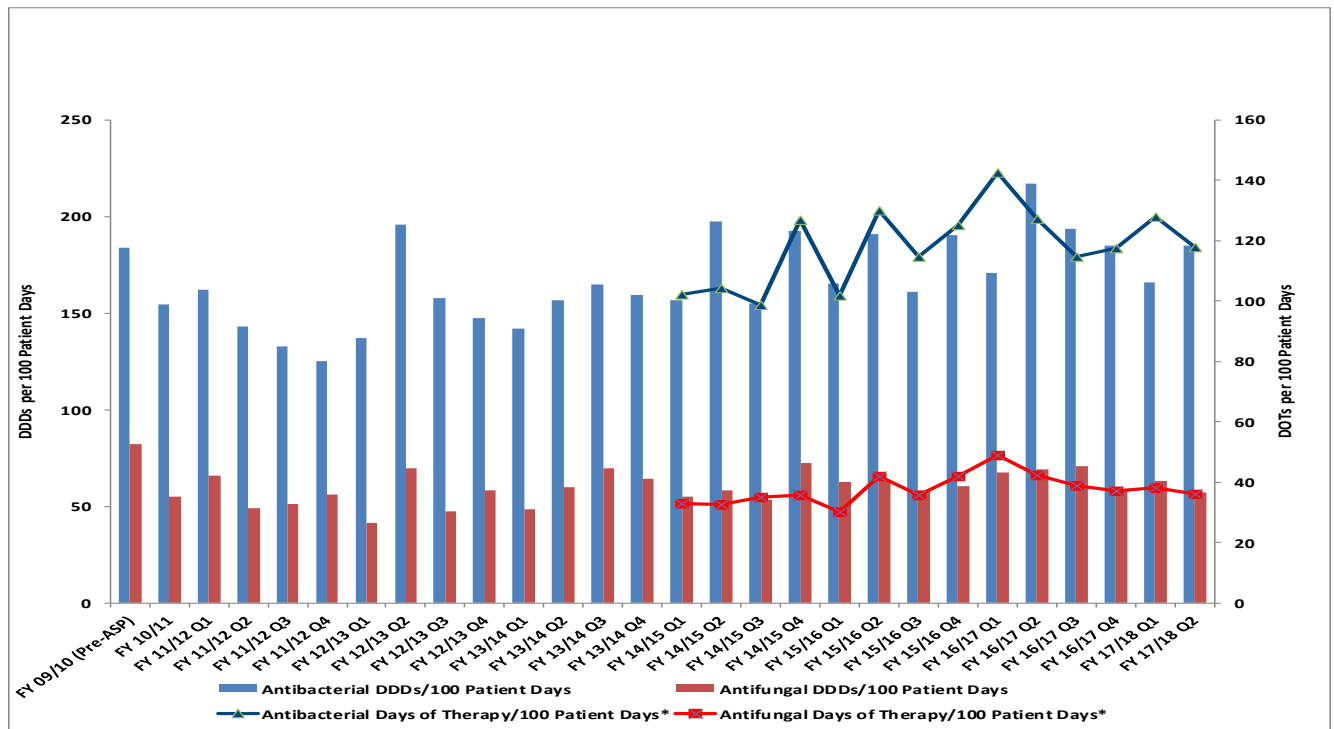


Table 10: Toronto General Hospital: Medical Surgical ICU

Indicators	FY 09/10 (Pre-ASP)	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
									Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs														
Total Antimicrobial DDDs/100 Patient Days	266	209	199	213	217	235	239	258	228	242			235	261
Systemic Antibacterial DDDs/100 Patient Days	184	155	143	159	156	175	178	191	166	185			176	193
Systemic Antifungal DDDs/100 Patient Days	82	55	55	54	61	60	84	66	63	57			60	68
Total Antimicrobial Costs	\$701,451	\$629,472	\$567,532	\$473,613	\$584,018	\$686,577	\$587,950	\$557,091	\$125,469	\$161,597			\$287,066	\$304,711
Total Antimicrobial Costs/Patient Day	\$102.52	\$84.06	\$76.93	\$63.75	\$75.71	\$83.65	\$71.06	\$64.53	\$61.78	\$76.44			\$69.26	\$65.43
Systemic Antibacterial Costs	\$390,209	\$375,436	\$292,355	\$231,171	\$225,557	\$293,126	\$254,392	\$267,107	\$63,059	\$70,894			\$133,953	\$154,618
Systemic Antibacterial Costs/Patient Day	\$57.03	\$50.14	\$39.63	\$31.12	\$29.24	\$35.71	\$30.75	\$30.94	\$31.05	\$33.54			\$32.32	\$33.20
Systemic Antifungal Costs	\$311,242	\$254,036	\$275,176	\$242,443	\$358,461	\$393,451	\$333,559	\$289,984	\$62,410	\$90,703			\$153,113	\$150,093
Systemic Antifungal Costs/Patient Day	\$45.49	\$33.93	\$37.30	\$32.63	\$46.47	\$47.94	\$40.31	\$33.59	\$30.73	\$42.91			\$36.94	\$32.23
Antibacterial Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	n/a	107.9	118.3	126	128	118			123	135
Antifungal Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	n/a	34.1	37.7	42	38	36			37	46
Patient Care Outcomes														
Hospital-Acquired C. difficile Cases (rate per 1,000 pt days)	10 (1.46)	10 (1.33)	11 (1.49)	11 (1.48)	12 (1.56)	10 (1.22)	10 (1.21)	15 (1.74)	4 (1.97)	1 (0.47)			5 (1.21)	10 (2.15)
ICU Average Length of Stay (days)	8.24	8.61	8.85	7.79	8.22	8.08	7.62	7.94	6.65	6.54			6.59	9.23
ICU Mortality Rate (as a %)	16.2	15.7	16.3	16.0	17.8	17.2	17.2	16.8	16.6	14.9			15.7	16.9
ICU Readmission Rate Within 48 Hrs (as a %)	3.8	4.4	4.4	2.8	3.5	3.0	3.4	3.2	2.8	3.8			3.3	4.1
ICU Ventilator Days	5399	6256	6507	6458	24620	7330	7048	7657	1683	1945			3628	4480
Apache II Score	n/a	n/a	16.1	15.775	15.9	15.1	15.4	16.7	16.4	16.6			16.5	16.5

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity). *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

There was a calculation error for the ICU Readmission Rate for FY 16/17 Q3. That figure has now been corrected.

Table 11: Daptomycin Use – Toronto General Hospital: Medical Surgical ICU

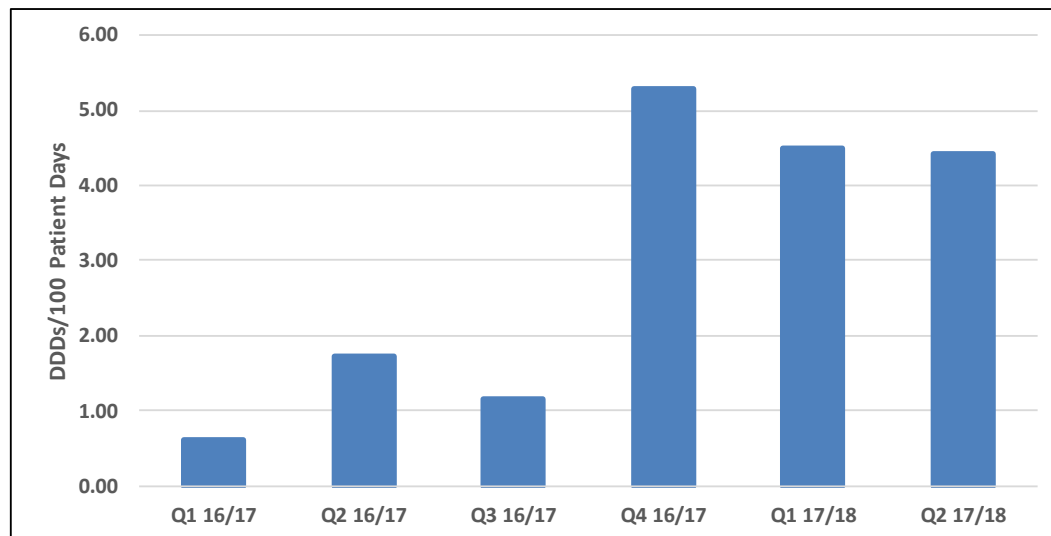
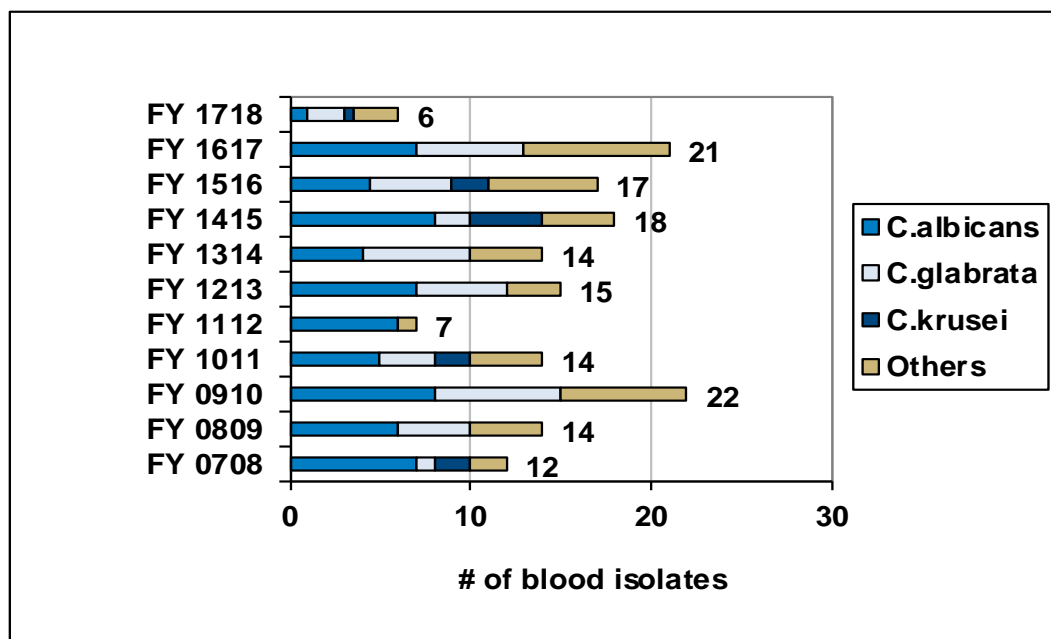
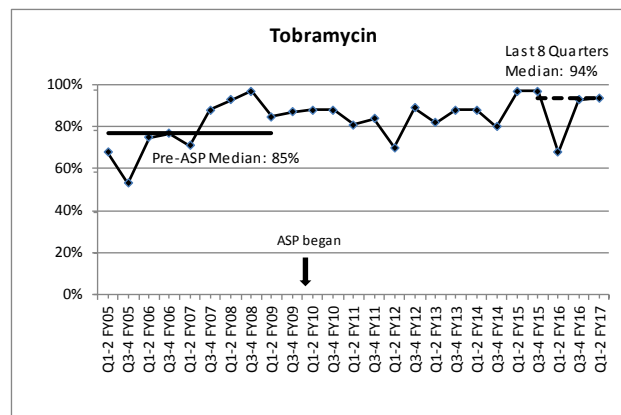
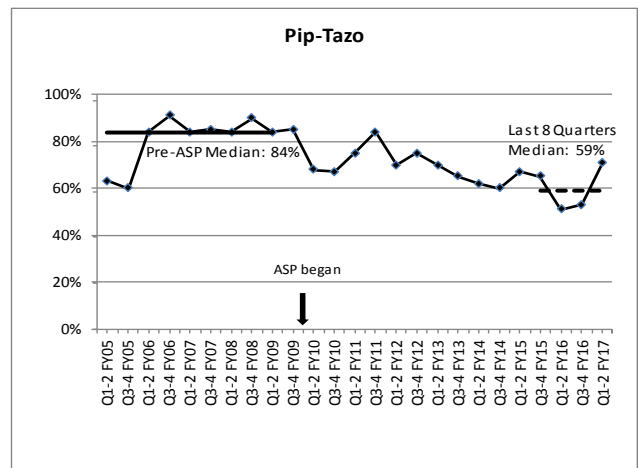
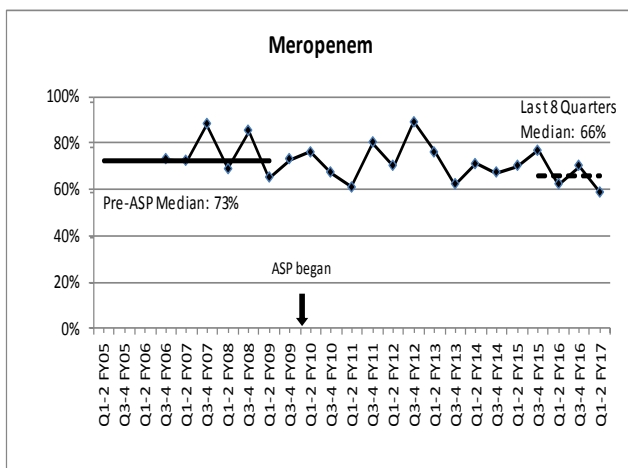
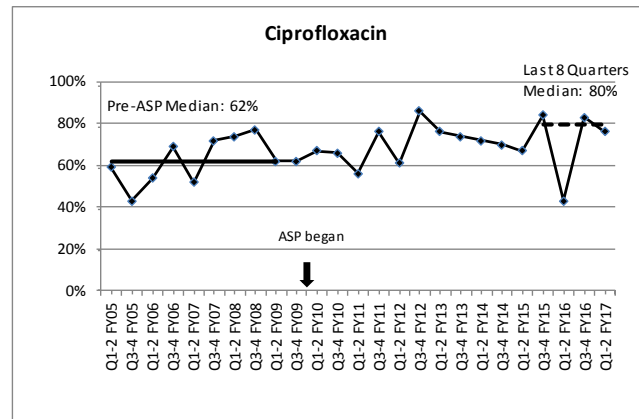
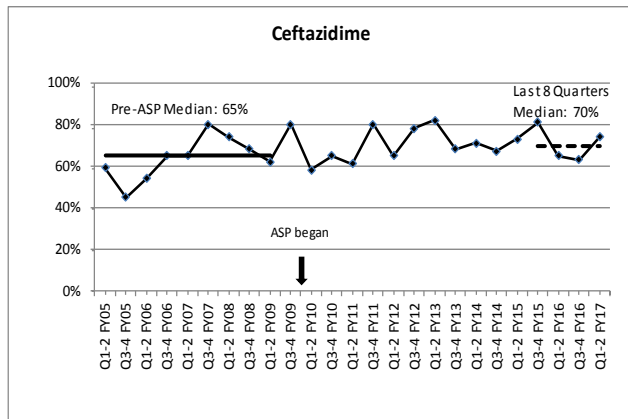


Table 12: Yeast Species Isolated in Blood – Toronto General Hospital: Medical Surgical ICU



If a patient has more than one organism per culture, it is represented as 0.5.

TGH MSICU Pseudomonas Susceptibility

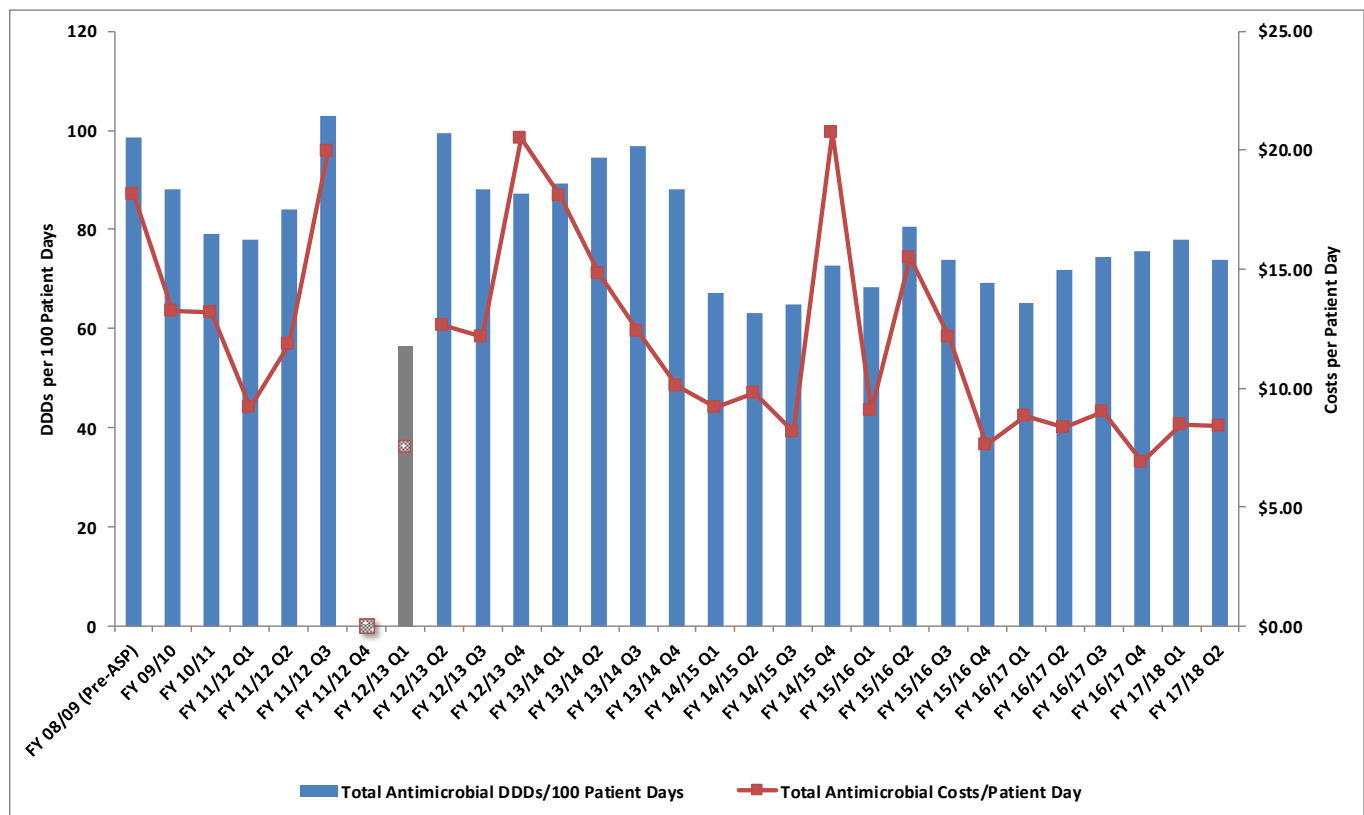


Toronto Western Hospital: Medical, Surgical, and Neurosurgical ICU

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 10.7% compared to YTD last year.
- Antimicrobial costs per patient day decreased (↓) by 1.9% compared to YTD last year.
- Antibacterial costs per patient day increased (↑) by 27.9% compared to YTD last year.
- Antifungal costs per patient day decreased (↓) by 59.2% compared to YTD last year.

Toronto Western Hospital: Medical, Surgical, and Neurosurgical ICU Antimicrobial Consumption and Costs Per Patient Day

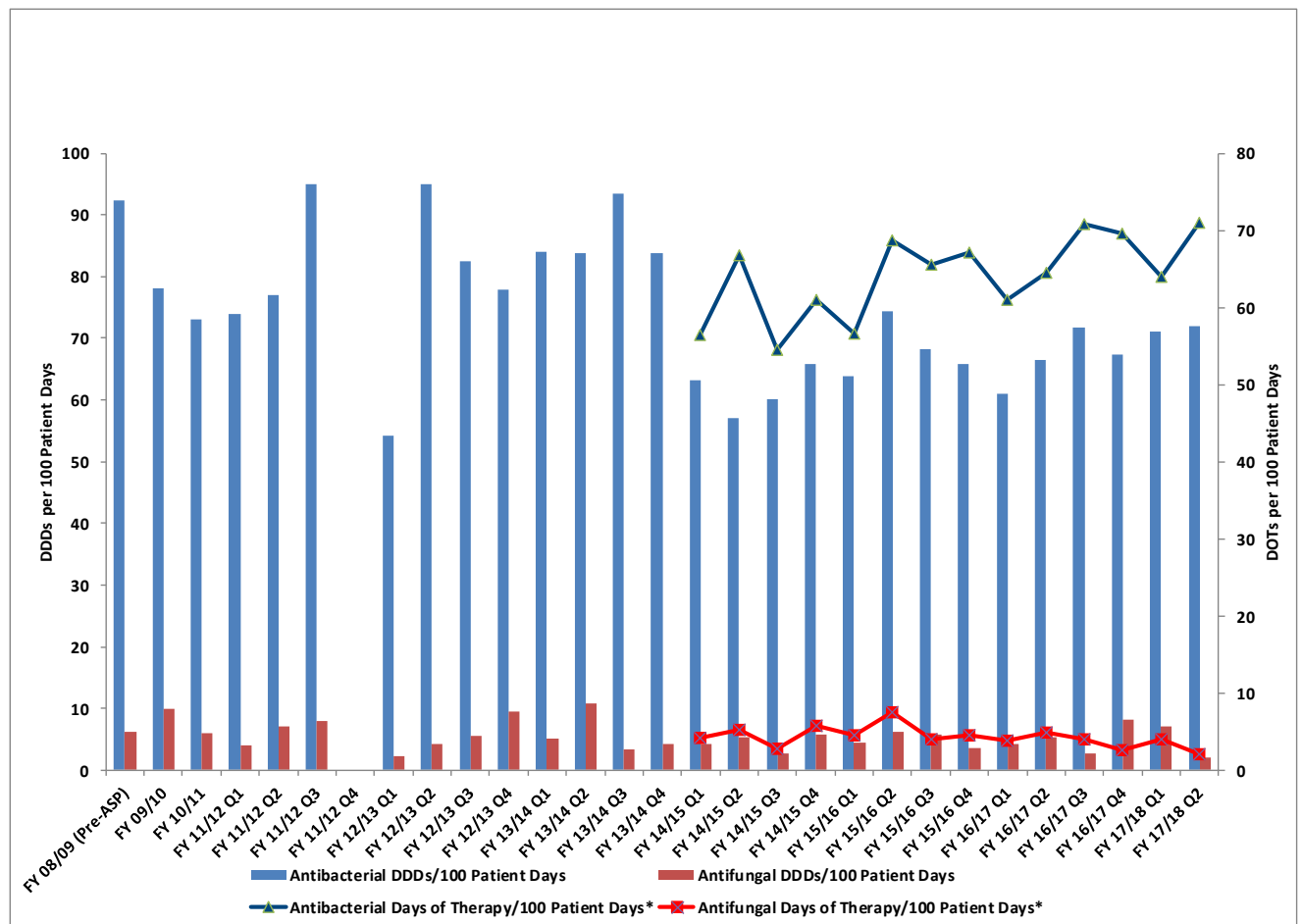


Due to an error in the Centricity Pharmacy database, we are not able to provide accurate DDD data and utilization cost for the Toronto Western Hospital ICU for FY 11/12 Q4. This also affected the recovery in FY 12/13 Q1 so neither quarter is reflected in the above graph.

To view **Appendix 1: FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 Patient Days) and Expenditures by ICU Site**, please click [here](#).

Toronto Western Hospital: Medical, Surgical, Neurosurgical ICU Antimicrobial Consumption as Defined Daily Dose Versus Antimicrobial Consumption as Days of Therapy

- Antibacterial Days of Therapy (DOT) per 100 patient days increased (↑) by 7.7% compared to YTD last year. Compared to DDD/100 patient days, this suggests a more profound increase in daily drug dose than initiation events.
- Antifungal Days of Therapy (DOT) per 100 patient days decreased (↓) by 33.7% compared to YTD last year.



Due to an error in the Centricity Pharmacy database, we are not able to provide accurate DDD data and utilization cost for the Toronto Western Hospital ICU for FY 11/12 Q4.

Table 13: Toronto Western Hospital: Medical, Surgical, and Neurosurgical ICU

Indicators	FY 08/09 (Pre-ASP)	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY17/18 Performance					YTD of Previous Year
										Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs															
Total Antimicrobial DDDs/100 Patient Days	99	88	79	83	83	92	67	77	72	78	74			76	69
Systemic Antibacterial DDDs/100 Patient Days	92	78	73	77	78	86	62	68	67	71	72			72	64
Systemic Antifungal DDDs/100 Patient Days	6	10	6	6	5	6	5	9	5	7	2			4	5
Total Antimicrobial Costs	\$136,758	\$100,408	\$101,191	\$105,899	\$102,978	\$120,538	\$138,014	\$127,293	\$98,672	\$24,077	\$24,218			\$48,294	\$50,780
Total Antimicrobial Costs/Patient Day	\$18.16	\$13.24	\$13.17	\$13.60	\$13.37	\$13.49	\$11.97	\$11.10	\$8.28	\$8.47	\$8.42			\$8.44	\$8.61
Systemic Antibacterial Costs	\$123,314	\$87,445	\$79,280	\$89,784	\$70,099	\$85,916	\$89,382	\$74,877	\$69,868	\$20,866	\$20,568			\$41,434	\$33,438
Systemic Antibacterial Costs/Patient Day	\$16.37	\$11.53	\$10.32	\$11.53	\$9.10	\$9.61	\$7.75	\$6.53	\$5.86	\$7.34	\$7.15			\$7.24	\$5.67
Systemic Antifungal Costs	\$13,444	\$12,963	\$21,911	\$16,115	\$32,879	\$34,623	\$48,631	\$52,416	\$28,805	\$3,210	\$3,650			\$6,860	\$17,343
Systemic Antifungal Costs/Patient Day	\$1.79	\$1.71	\$2.85	\$2.07	\$4.27	\$3.87	\$4.22	\$4.57	\$2.42	\$1.13	\$1.27			\$1.20	\$2.94
Antibacterial Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	n/a	n/a	60	65	67	64	71			68	63
Antifungal Days of Therapy/100 Patient Days*	n/a	n/a	n/a	n/a	n/a	n/a	4	5	4	4	2			3	4
Patient Care Outcomes															
Hospital-Acquired C. difficile Cases (rate per 1,000 pt days)	6 (0.79)	9 (1.18)	4 (0.52)	13 (1.66)	5 (0.65)	12 (1.34)	10 (1.16)	9 (0.78)	8 (0.67)	2 (0.7)	1 (0.35)			3 (0.52)	4 (0.68)
ICU Average Length of Stay (days)	8.39	7.44	10.68	9.71	7.98	7.68	8.7	8.01	9.5	8.38	7.0			7.6	9.14
ICU Mortality Rate (as a %)	19.6	19.9	18.1	17.0	16.4	17.1	19.0	17.9	18.5	14.1	15.2			14.7	17.3
ICU Readmission Rate Within 48 Hrs (as a %)	3.9	4.7	4.9	3.21	3.00	3.85	3.40	2.54	1.34	2.92	3.23			3.08	1.16
ICU Ventilator Days	4617	6305	5960	5578	4947	5523	5180	5414	4937	1097	1305			2402	2381
ICU Apache II Score	15.0	14.7	13.7	13.8	12.9	12.8	13.2	13.0	14.0	13.0	13.0			13.0	13.3

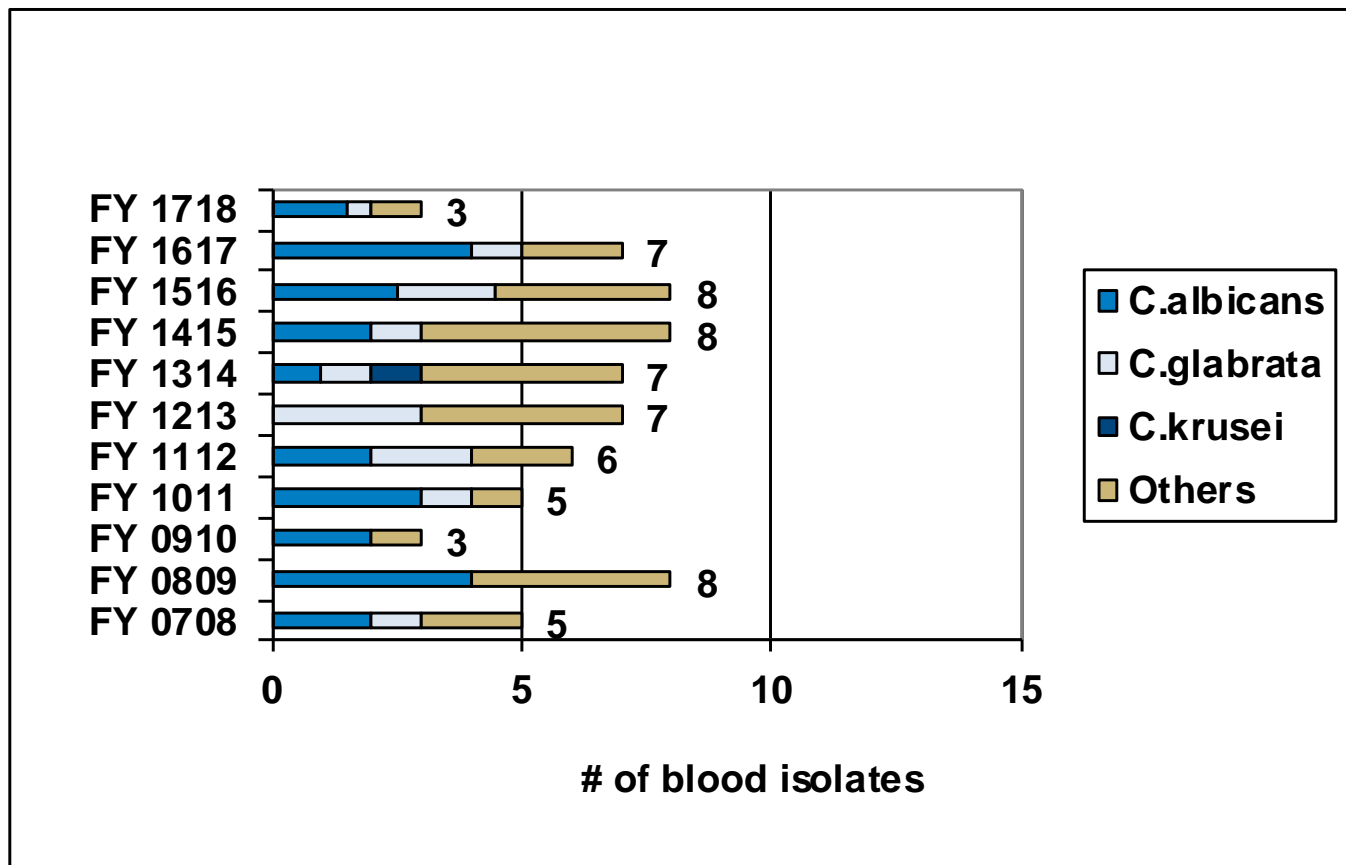
Notes: Q4 13/14 data consists of MSNICU patients (including eight ICU II patients).

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity) *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

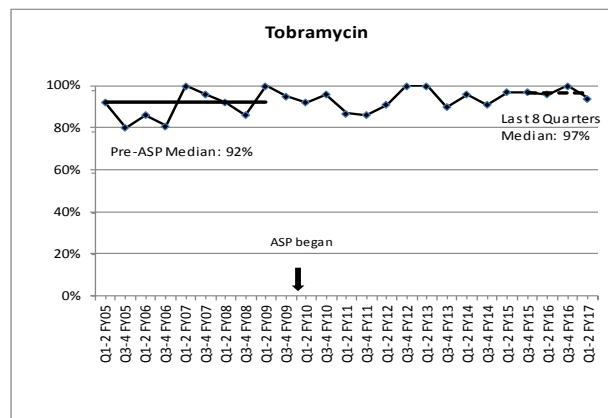
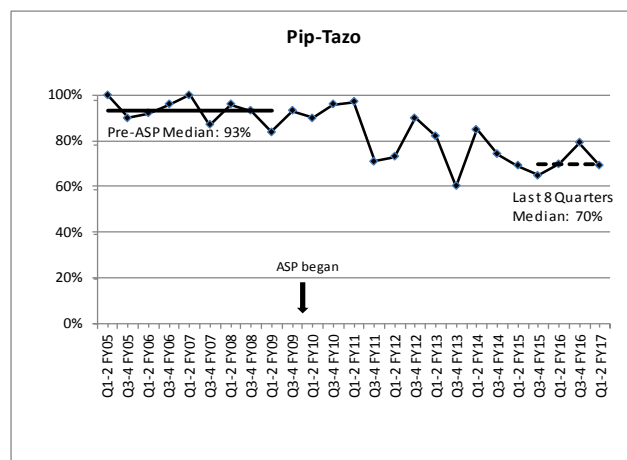
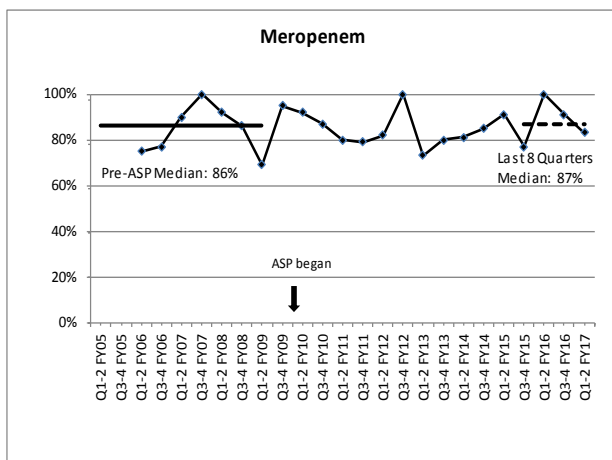
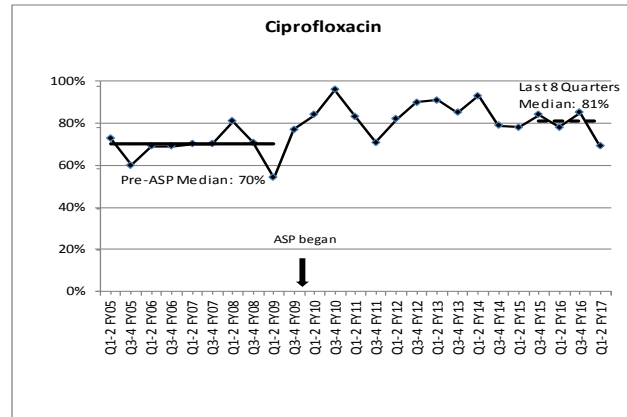
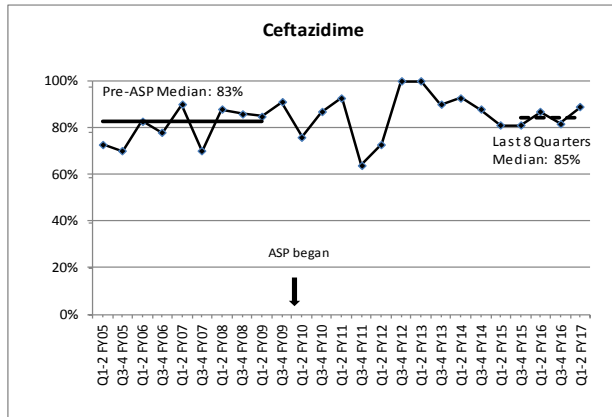
There was a calculation error for the ICU Readmission Rate for FY 16/17 Q3. That figure has now been corrected.

Table 14: Yeast Species Isolated in Blood – Toronto Western Hospital: Medical, Surgical, and Neurosurgical ICU



If a patient has more than one organism per culture, it is represented as 0.5.

TWH MSNICU Pseudomonas Susceptibility



EMERGENCY DEPARTMENT

Mount Sinai Hospital: Emergency Department

The FY 17/18 Q2 summary includes:

SNAP (Sepsis Now A Priority) Project: The SNAP algorithm continues to be utilized in the Mount Sinai Hospital Emergency Department. Algorithm-related interventional times continue to be monitored and reported back to frontline staff via monthly SNAP scorecards. Reporting of the SNAP scorecard is being managed by the Emergency Department. There have been recent discussions with the MSH ED staff to determine how best to continue improving care and increasing awareness and use of the SNAP algorithm.

SNAP SCORE CARD

For the Month of July 2017

5-35 minutes	5-35 minutes	5-35minutes	5-35minutes	5-35 minutes	35-65minutes
36-40 minutes	36-40 minutes	36-40minutes	36-40minutes	36-40minutes	66-70minutes
> 40 minutes	>40minutes	>40minutes	>40minutes	>40minutes	>70minutes
Time to MD Assessment	Time to RN Assessment	Time to Blood Culture	Time to Lactate	Time to 1st Bolus	Time to Antibiotic
0:00	0:00	n/a	n/a	n/a	n/a
0:00	0:00	0:12	0:00	0:28	2:07
0:00	0:00	0:13	0:02	0:00	2:27
0:00	0:00	2:07	0:41	n/a	n/a
0:00	0:00	0:00	0:00	1:05	2:34
0:48	0:38	0:00	2:40	1:53	1:43
0:00	0:00	0:15	0:00	0:35	1:13
1:36	#####	4:05	2:44	0:00	#####
1:00	0:38	0:05	0:00	n/a	0:33
0:00	0:00	0:14	0:05	0:17	0:25
0:00	0:00	0:10	0:00	0:20	2:15
0:00	0:00	15:30	0:00	3:00	0:54
#####	#####	n/a	n/a	n/a	#####
0:25	0:14	0:37	1:40	0:30	1:09
2:46	2:45	0:24	n/a	n/a	0:53
0:18	0:00	0:06	0:01	0:00	0:44
0:00	0:00	0:50	0:11	0:45	1:27
0:33	0:05	0:40	0:27	0:00	3:36
0:09	0:08	0:00	0:00	0:14	2:00
0:00	0:00	0:42	0:26	0:00	n/a
0:00	0:54	0:00	0:00	0:00	1:03
TOTAL NUMBER OF CASES		21			
TOTAL NUMBER OF CASES CANCELLED		1			
TOTAL PATIENTS DISCHARGED FROM ED		6			
TOTAL PATIENTS TRANSFERRED TO FLOOR		14			

Note: 0:00 time means that pertinent assessments or interventions were started before SNAP algorithm was assigned.

SNAP SCORE CARD

For the Month of August 2017

5-35 minutes	5-35 minutes	5-35minutes	5-35minutes	5-35 minutes	35-65minutes
36-40 minutes	36-40 minutes	36-40minutes	36-40minutes	36-40minutes	66-70minutes
> 40 minutes	>40minutes	>40minutes	>40minutes	>40minutes	>70minutes

Time to MD Assessment	Time to RN Assessment	Time to Blood Culture	Time to Lactate	Time to 1st Bolus	Time to Antibiotic
0:00	0:00	0:37	0:29	0:34	2:27
0:00	0:00	0:14	0:17	1:20	1:29
#####	#####	0:00	0:00	0:00	#####
0:00	0:00	0:39	0:00	0:00	0:41
1:43	1:55	0:33	0:29	n/a	n/a
1:43	#####	0:00	0:00	0:00	#####
0:52	0:36	0:00	0:00	1:06	0:48
0:00	0:42	0:00	0:00	0:20	1:52
0:50	0:00	0:16	0:09	0:19	1:48
0:00	0:00	0:15	0:11	0:20	1:02
0:31	0:11	0:06	0:00	0:00	1:40
0:00	0:00	0:51	0:48	1:20	2:33
0:00	0:13	0:00	0:00	0:00	0:48
0:57	0:34	0:00	0:00	0:00	n/a
0:24	0:14	n/a	n/a	n/a	n/a
0:36	0:00	0:45	0:45	0:59	1:03
0:50	0:18	0:37	0:00	2:10	1:38
0:08	0:05	0:38	0:17	n/a	n/a
0:45	0:13	0:17	0:10	0:01	n/a
0:00	0:00	0:43	0:28	0:35	1:11
2:10	0:12	0:17	0:06	0:10	0:32
0:00	0:00	0:26	0:00	0:25	0:53
1:32	1:36	0:00	n/a	0:20	0:34

TOTAL NUMBER OF CASES	23
TOTAL NUMBER OF CASES CANCELLED	2
TOTAL PATIENTS DISCHARGED FROM ED	7
TOTAL PATIENTS TRANSFERRED TO FLOOR	14

Note: 0:00 time means that pertinent assessments or interventions were started before SNAP algorithm was assigned.

SNAP SCORE CARD

For the Month of September 2017

5-35 minutes	5-35 minutes	5-35minutes	5-35minutes	5-35 minutes	35-65minutes
36-40 minutes	36-40 minutes	36-40minutes	36-40minutes	36-40minutes	36-70minutes
>40 minutes	>40minutes	>40minutes	>40minutes	>40minutes	>70minutes

Time to MD Assessment	Time to RN Assessment	Time to Blood Culture	Time to Lactate	Time to 1st Bolus	Time to Antibiotic
0:31	0:27	1:02	0:39	1:28	5:24
0:14	0:00	0:07	0:03	0:10	1:04
1:21	0:00	0:30	0:24	0:11	0:20
0:00	0:00	0:26	0:18	1:12	0:53
0:53	0:40	0:21	0:14	0:39	0:26
2:36	2:23	4:42	0:00	1:57	4:24
0:00	0:00	0:00	0:00	0:27	1:12
0:00	0:00	0:15	0:10	1:42	1:14
1:26	0:06	0:00	0:00	0:23	0:53
0:00	0:47	0:00	0:00	0:00	2:42
0:00	0:24	0:00	0:00	1:46	2:30
0:00	0:00	1:56	1:56	1:50	2:31
0:57	0:06	0:00	0:00	n/a	n/a
0:00	0:00	0:32	0:03	0:25	0:40
0:00	0:00	6:37	0:38	2:35	13:45
1:34	0:40	0:00	0:00	0:17	n/a
0:00	0:00	0:09	0:00	0:38	0:49
0:50	0:00	0:23	0:00	0:00	1:18
0:00	0:00	n/a	n/a	n/a	n/a
0:01	0:00	0:19	0:02	0:34	1:40
0:30	0:02	0:04	0:00	n/a	n/a
0:00	0:00	1:59	0:43	0:46	0:20
0:14	0:22	0:03	0:00	0:07	5:17
2:19	2:09	0:02	0:00	n/a	3:35
1:38	0:00	0:21	0:15	0:12	0:25
0:00	0:10	0:24	0:00	0:00	1:14
0:34	0:22	2:37	n/a	n/a	2:21

TOTAL NUMBER OF CASES	27
TOTAL NUMBER OF CASES CANCELLED	1
TOTAL PATIENTS DISCHARGED FROM ED	5
TOTAL PATIENTS TRANSFERRED TO FLOOR	22

Note: 0:00 time means that pertinent assessments or interventions were started before SNAP algorithm was assigned.

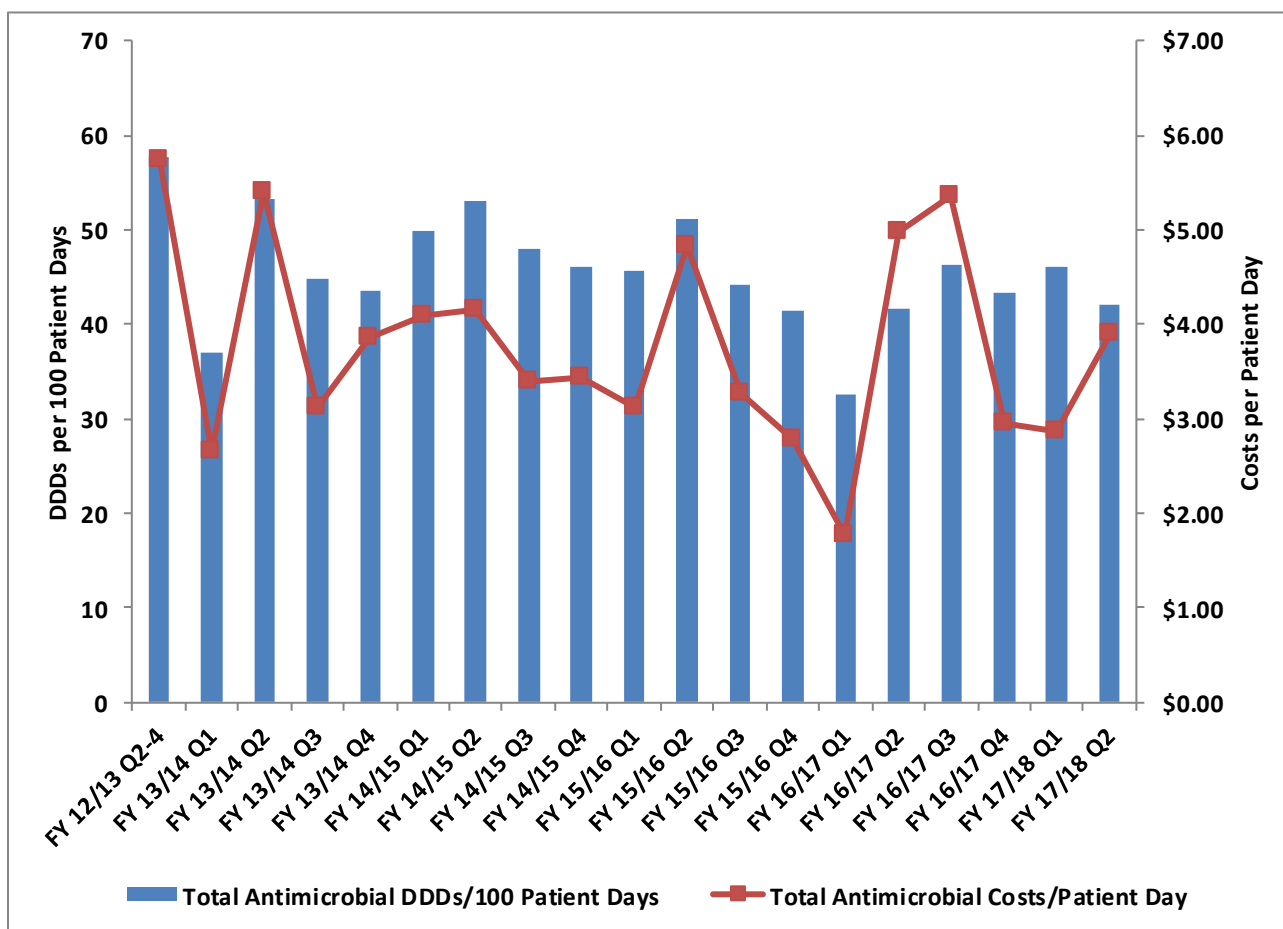
GENERAL INTERNAL MEDICINE

Mount Sinai Hospital: General Internal Medicine

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 19.6% compared to YTD last year.
 - Antimicrobial costs per patient day increased (↑) by 3.3% compared to YTD last year.
 - Antibacterial costs per patient day increased (↑) by 45.0% compared to YTD last year.
 - Antifungal costs per patient day decreased (↓) by 58.7% compared to YTD last year.
- NB: Usage data calculated for patients admitted by admission to GIM medical service at MSH.

Mount Sinai Hospital: General Internal Medicine Antimicrobial Consumption and Costs Per Patient Day



To view **Appendix 2: General Internal Medicine FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 patient days) and Expenditures**, please click [here](#).

Table 15: Mount Sinai Hospital: General Internal Medicine

Indicators	FY 12/13 (Q2-4)	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
						Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs											
Total Antimicrobial DDDs/100 Patient Days	58	45	48	43	41	46	42			44	37
Systemic Antibacterial DDDs/100 Patient Days	53	41	43	39	37	43	38			41	32
Systemic Antifungal DDDs/100 Patient Days	3	3	3	3	3	2	3			3	4
Total Antimicrobial Costs	\$125,012	\$123,737	\$128,661	\$106,518	\$126,283	\$22,926	\$31,485			\$54,411	\$55,938
Total Antimicrobial Costs/Patient Day	\$5.74	\$3.76	\$3.63	\$2.92	\$3.69	\$2.87	\$3.91			\$3.39	\$3.28
Systemic Antibacterial Costs	\$105,621	\$99,731	\$104,822	\$84,173	\$78,418	\$20,228	\$24,189			\$44,417	\$32,541
Systemic Antibacterial Costs/Patient Day	\$4.85	\$3.03	\$2.96	\$2.31	\$2.29	\$2.53	\$3.01			\$2.77	\$1.91
Systemic Antifungal Costs	\$15,422	\$20,153	\$16,352	\$15,983	\$42,012	\$1,831	\$6,865			\$8,696	\$22,381
Systemic Antifungal Costs/Patient Day	\$0.71	\$0.61	\$0.46	\$0.44	\$1.23	\$0.23	\$0.85			\$0.54	\$1.31
Patient Care Outcomes											
Hospital-Acquired C. difficile Cases (rate per 1,000 patient days)	16 (0.64)	8 (0.32)	7 (0.27)	7 (0.28)	0(0.00)	2 (0.35)	3 (0.52)			5 (0.43)	8 (0.62)

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs + systemic antivirals; non-systemic antimicrobials are excluded.

Data Sources: Antimicrobial DDD and Costs (PharmNet), C difficile (Infection Control Dashboards).

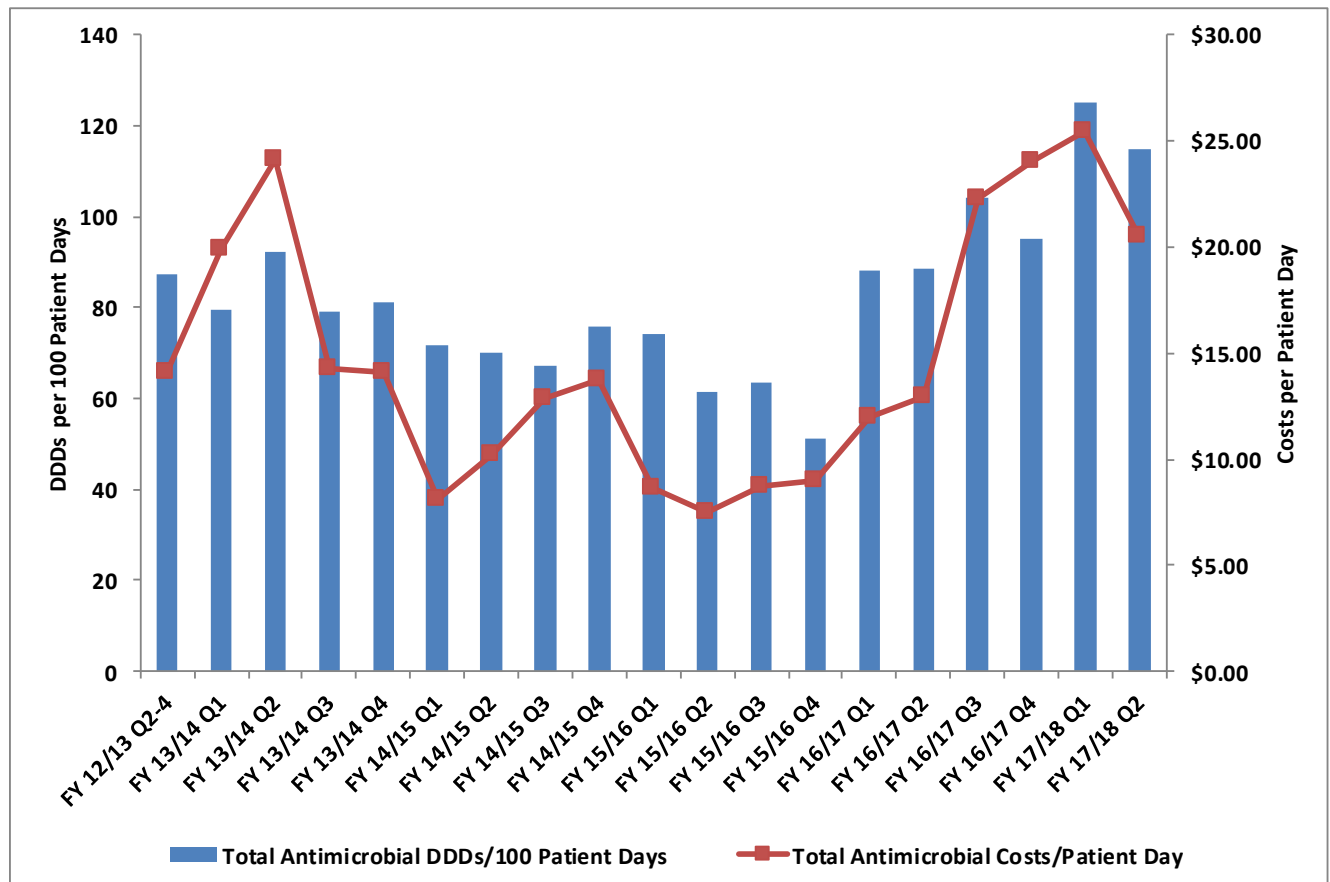
Historical antimicrobial usage and cost data updated due to the discovery that selected added drug dosages (Fluconazole 400mg/200ml bag, Pip-Tazo 13.5gm vial, Daptomycin 500mg vial) were not included in the report. Data have been revised to include Fluconazole starting August 2013, Pip-Tazo January 2015, and Daptomycin, November 2015.

Toronto General Hospital: General Internal Medicine

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 35.5% compared to YTD last year.
 - Antimicrobial costs per patient day increased (↑) by 84.2% compared to YTD last year for TGH.
 - Antibacterial costs per patient day increased (↑) by 73.7% compared to YTD last year.
 - Antifungal costs per patient day increased (↑) by 101.0% compared to YTD last year.
- NB: Usage data calculated for patients admitted to primary GIM units at TGH.

Toronto General Hospital: General Internal Medicine Antimicrobial Consumption and Costs Per Patient Day



To view **Appendix 2: General Internal Medicine FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 patient days) and Expenditures**, please click [here](#).

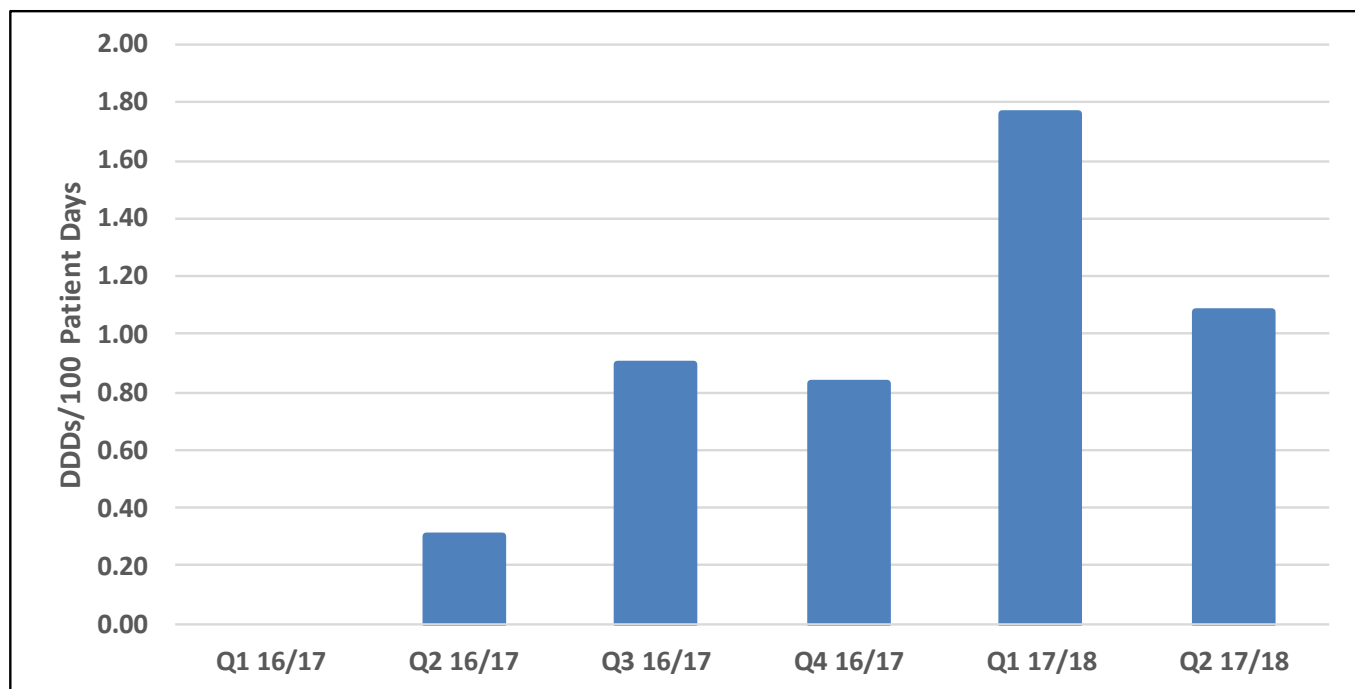
Table 16: Toronto General Hospital: General Internal Medicine

Indicators	FY 12/13 (Q2-4)	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
						Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs											
Total Antimicrobial DDDs/100 Patient Days	87	83	83	63	94	125	115			120	88
Systemic Antibacterial DDDs/100 Patient Days	77	70	73	55	78	107	94			101	73
Systemic Antifungal DDDs/100 Patient Days	11	13	10	8	16	18	20			19	15
Total Antimicrobial Costs	\$279,644	\$471,342	\$352,036	\$313,464	\$494,787	\$178,785	\$145,903			\$324,689	\$174,870
Total Antimicrobial Costs/Patient Day	\$14.10	\$18.05	\$13.30	\$8.48	\$17.77	\$25.49	\$20.51			\$22.98	\$12.47
Systemic Antibacterial Costs	\$171,817	\$225,491	\$221,389	\$202,012	\$250,100	\$92,785	\$95,217			\$188,002	\$107,401
Systemic Antibacterial Costs/Patient Day	\$8.67	\$8.64	\$8.36	\$5.47	\$8.98	\$13.23	\$13.38			\$13.31	\$7.66
Systemic Antifungal Costs	\$107,827	\$245,851	\$130,647	\$111,452	\$244,687	\$86,000	\$50,687			\$136,686	\$67,469
Systemic Antifungal Costs/Patient Day	\$5.44	\$9.42	\$4.93	\$3.02	\$8.79	\$12.26	\$7.12			\$9.67	\$4.81
Patient Care Outcomes											
Hospital-Acquired C. difficile Cases (rate per 1,000 patient days)	15 (0.76)	16 (0.61)	15 (0.68)	14 (0.6)	5 (0.19)	3 (0.43)	4 (0.56)			7 (0.5)	2 (0.14)

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity). *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

Table 17: Daptomycin Use – Toronto General Hospital: General Internal Medicine



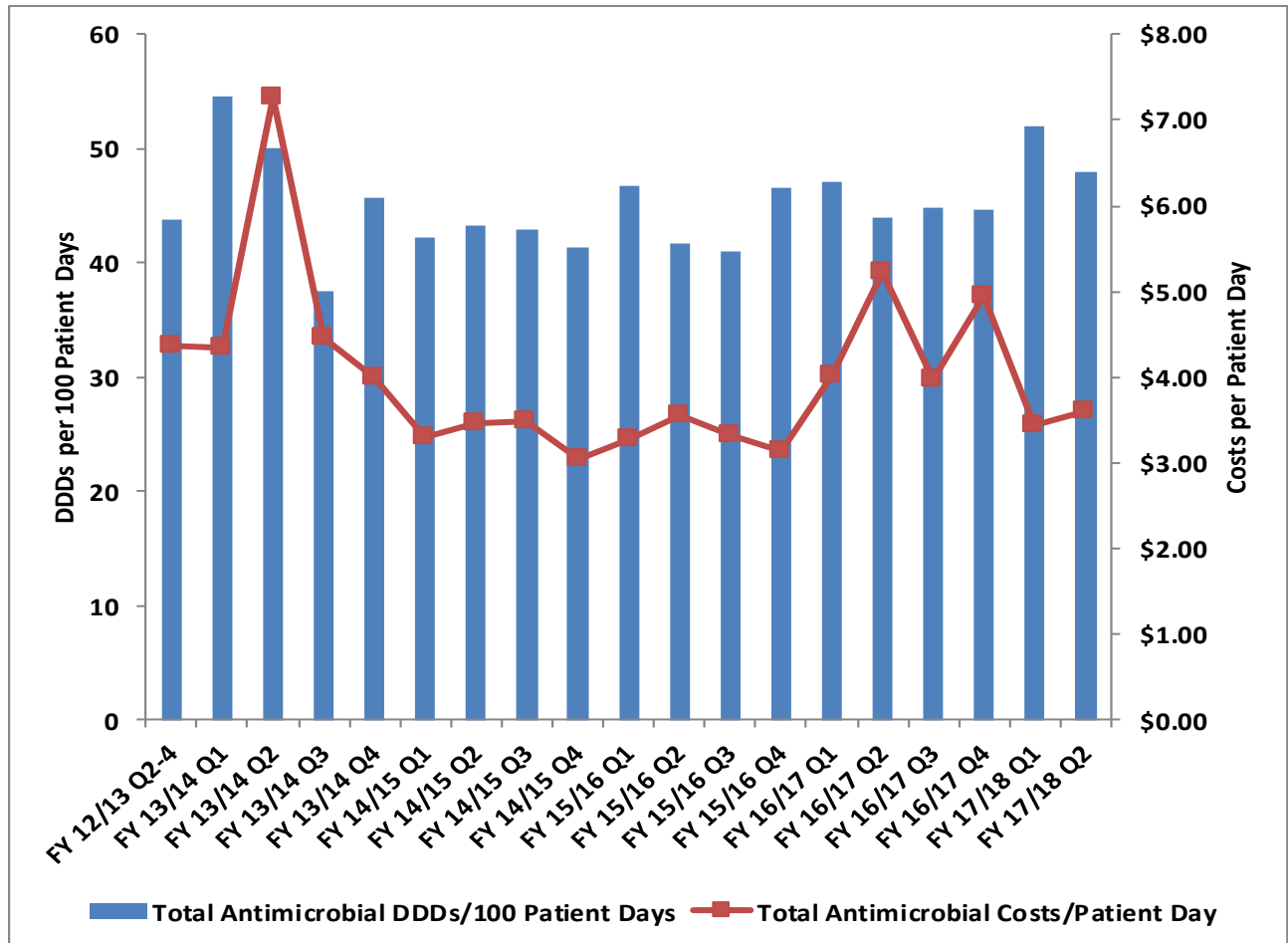
Toronto Western Hospital: General Internal Medicine

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 9.0% compared to YTD last year.
- Antimicrobial costs per patient day decreased (↓) by 23.7% compared to YTD last year.
- Antibacterial costs per patient day decreased (↓) by 35.1% compared to YTD last year.
- Antifungal costs per patient day decreased (↓) by 97.7% compared to YTD last year*.

NB: Usage data calculated for patients admitted to primary GIM units at TWH.

Toronto Western Hospital: General Internal Medicine Antimicrobial Consumption and Costs Per Patient Day



To view **Appendix 2: General Internal Medicine FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 patient days) and Expenditures**, please click [here](#).

Table 18: Toronto Western Hospital: General Internal Medicine

Indicators	FY 12/13 (Q2-4)	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
						Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs											
Total Antimicrobial DDDs/100 Patient Days	44	47	42	47	45	52	48			50	46
Systemic Antibacterial DDDs/100 Patient Days	41	44	40	42	42	47	46			47	43
Systemic Antifungal DDDs/100 Patient Days	3	3	3	6	3	5	2			3	3
Total Antimicrobial Costs	\$74,737	\$115,919	\$110,889	\$108,612	\$146,214	\$25,111	\$28,049			\$53,160	\$74,421
Total Antimicrobial Costs/Patient Day	\$4.36	\$5.01	\$3.32	\$3.32	\$4.52	\$3.43	\$3.59			\$3.51	\$4.60
Systemic Antibacterial Costs	\$60,999	\$93,779	\$103,080	\$105,744	\$118,506	\$3,953	\$27,900			\$31,854	\$52,376
Systemic Antibacterial Costs/Patient Day	\$3.56	\$4.05	\$3.09	\$3.23	\$3.67	\$0.54	\$3.57			\$2.10	\$3.24
Systemic Antifungal Costs	\$13,738	\$22,140	\$7,810	\$2,868	\$27,708	\$331	\$149			\$480	\$22,046
Systemic Antifungal Costs/Patient Day	\$0.80	\$0.96	\$0.23	\$0.09	\$0.86	\$0.05	\$0.02			\$0.03	\$1.36
Patient Care Outcomes											
Hospital-Acquired C. difficile Cases (rate per 1,000 patient days)	7 (0.41)	14 (0.6)	11 (0.33)	7 (0.21)	10 (0.31)	1 (0.14)	5 (0.64)			6 (0.4)	6 (0.37)

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity). *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

IMMUNOCOMPROMISED HOST

Princess Margaret Cancer Centre: Leukemia Service

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 7.1% compared to YTD last year.
- Antimicrobial costs per patient day increased (↑) by 25.5% compared to YTD last year.
- Antibacterial costs per patient day increased (↑) by 27.7% compared to YTD last year.
- Antifungal costs per patient day increased (↑) by 24.8% compared to YTD last year.
- Miranda So, Dr. Husain, Dr. Morris, and Yoshiko Nakamachi are working closely with PM's Senior Leadership Team to optimize the impact of antimicrobial stewardship interventions in malignant haematology.

Princess Margaret Cancer Centre: Leukemia Service Antimicrobial Consumption and Costs

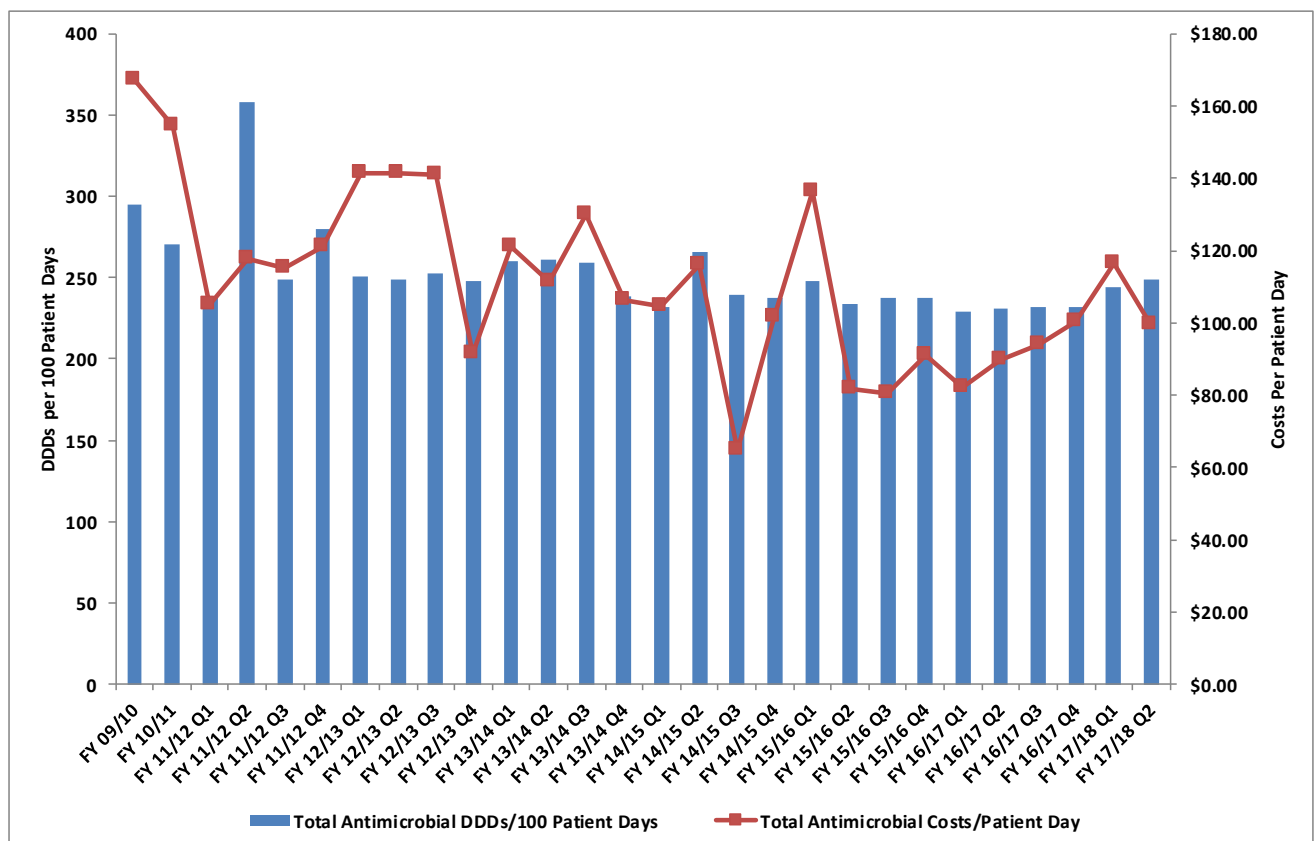


Table 19: Princess Margaret Cancer Centre: Leukemia Service

Indicators										FY 17/18 Performance				YTD of Previous Year
	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs														
Total Antimicrobial DDDs/100 Patient Days	295	270	239	250	255	244	239	239	244	249			246	230
Systemic Antibacterial DDDs/100 Patient Days	191	163	134	146	138	136	138	138	143	144			144	134
Systemic Antifungal DDDs/100 Patient Days	104	107	105	104	117	108	101	101	100	105			103	97
Total Antimicrobial Costs	\$1,768,317	\$1,641,331	\$1,310,857	\$1,695,539	\$1,534,499	\$1,412,805	\$1,479,103	\$1,479,103	\$460,019	\$401,908			\$861,926	\$680,871
Total Antimicrobial Costs/Patient Day	\$167.12	\$154.32	\$115.13	\$128.91	\$117.10	\$96.46	\$96.98	\$96.98	\$116.31	\$99.48			\$107.81	\$85.88
Systemic Antibacterial Costs	\$659,034	\$609,747	\$663,175	\$422,438	\$485,263	\$471,597	\$403,399	\$403,399	\$112,841	\$111,999			\$224,840	\$174,593
Systemic Antibacterial Costs/Patient Day	\$62.28	\$57.33	\$58.24	\$45.85	\$37.03	\$32.20	\$26.45	\$26.45	\$28.53	\$27.72			\$28.12	\$22.02
Systemic Antifungal Costs	\$1,109,283	\$1,031,584	\$647,637	\$1,092,448	\$1,049,236	\$941,208	\$1,075,705	\$1,075,705	\$347,178	\$289,908			\$637,086	\$506,279
Systemic Antifungal Costs/Patient Day	\$104.84	\$96.99	\$56.88	\$83.06	\$80.07	\$64.26	\$70.53	\$70.53	\$87.78	\$71.76			\$79.69	\$63.86
Patient Care Outcomes														
Hospital-Acquired C. difficile Cases (rate per 1,000 patient days)	6 (0.56)	7 (0.65)	14 (1.17)	5 (0.51)	11 (0.84)	13 (0.89)	14 (0.92)	14 (0.92)	6 (1.52)	4 (0.99)			10 (1.25)	7 (0.88)

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity). *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

Table 20: Daptomycin Use – Princess Margaret Cancer Centre: Leukemia Service

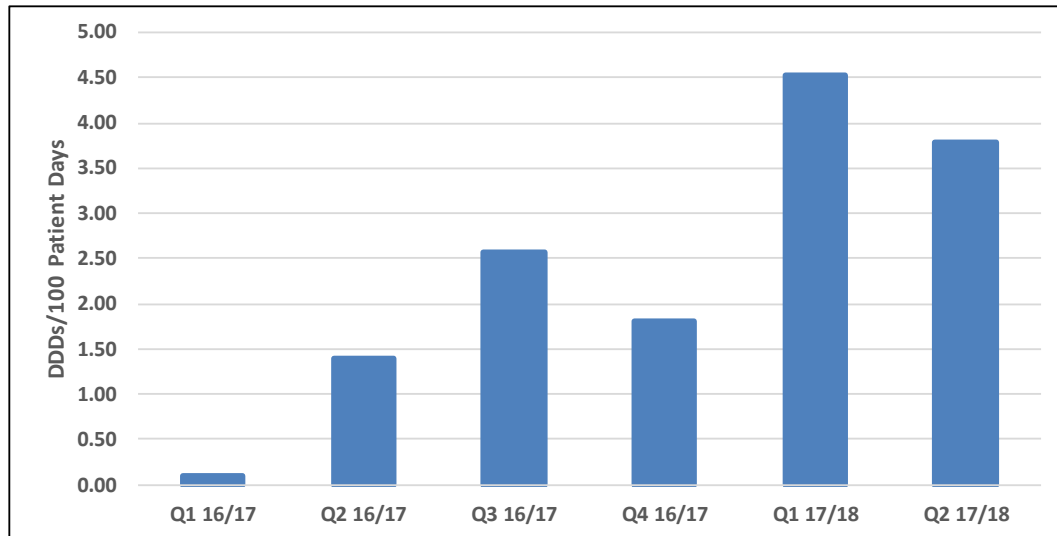
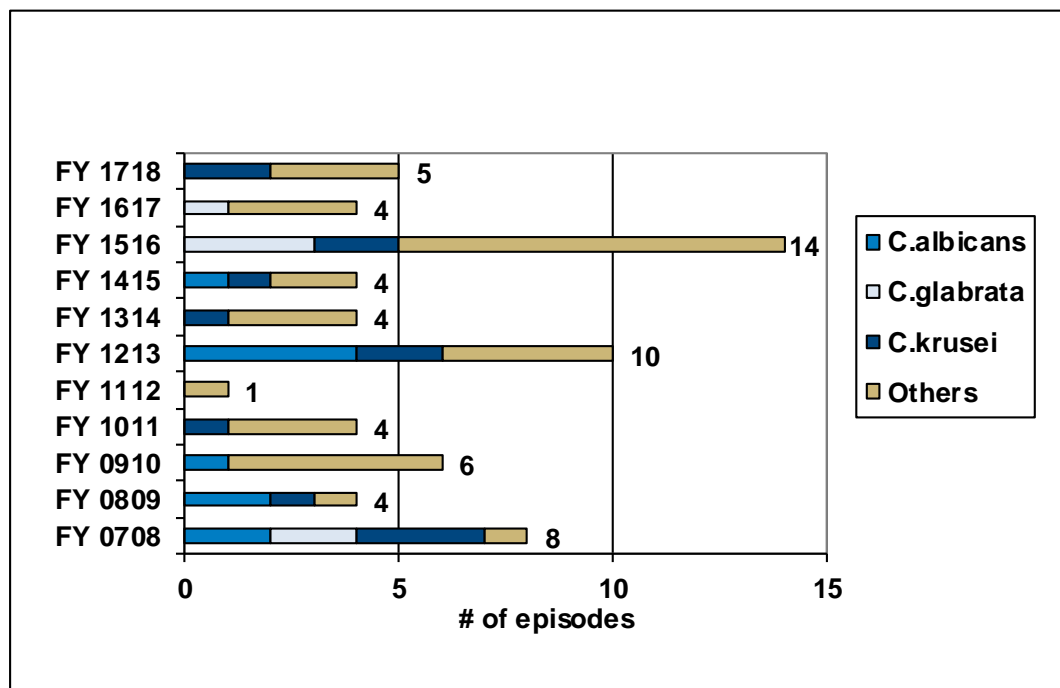
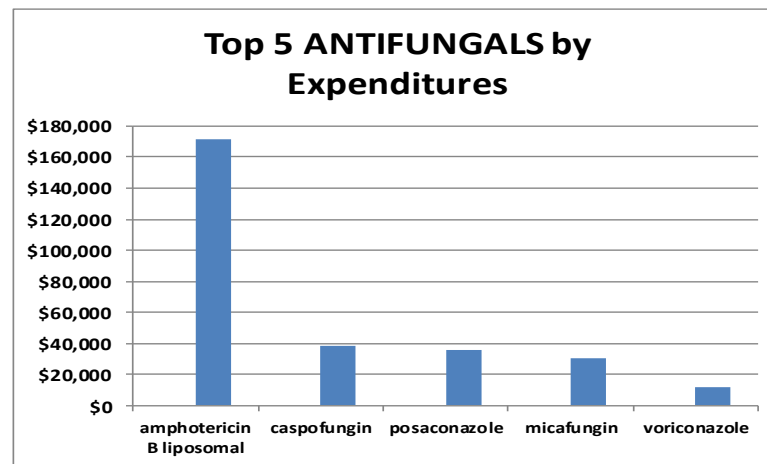
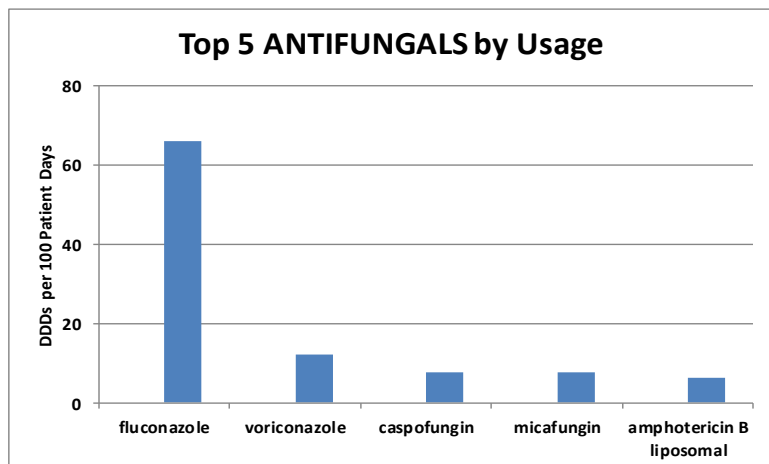
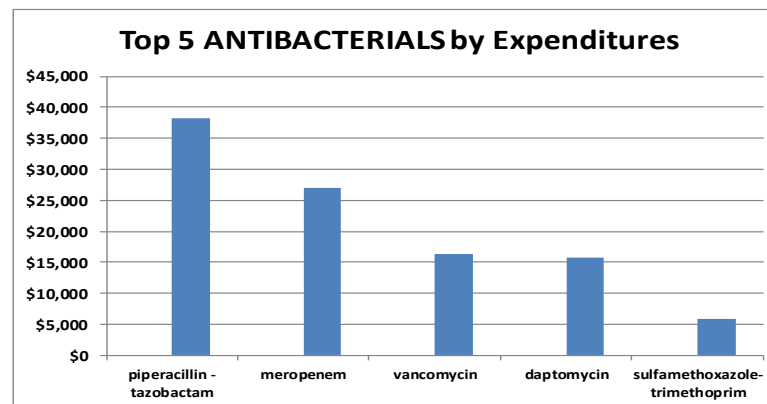
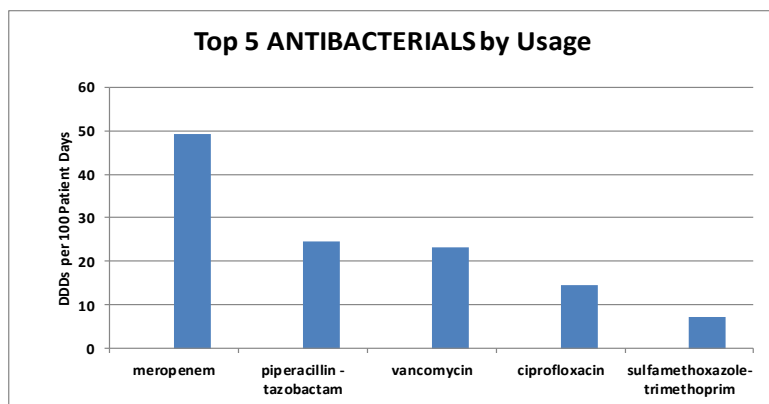


Table 21: Yeast Species Isolated in Blood – Princess Margaret Cancer Centre: Leukemia Service



If a patient has more than one organism per culture, it is represented as 0.5.

Table 22: Princess Margaret Cancer Centre: Leukemia FY 17/18 Q2 Top 5 Antimicrobials by Usage and Expenditures



Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 8.4% compared to YTD last year.
- Antimicrobial costs per patient day increased (↑) by 16.1% compared to YTD last year.
- Antibacterial costs per patient day increased (↑) by 41.9% compared to YTD last year.
- Antifungal costs per patient day increased (↑) by 11.9% compared to YTD last year.

Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant Antimicrobial Consumption and Costs

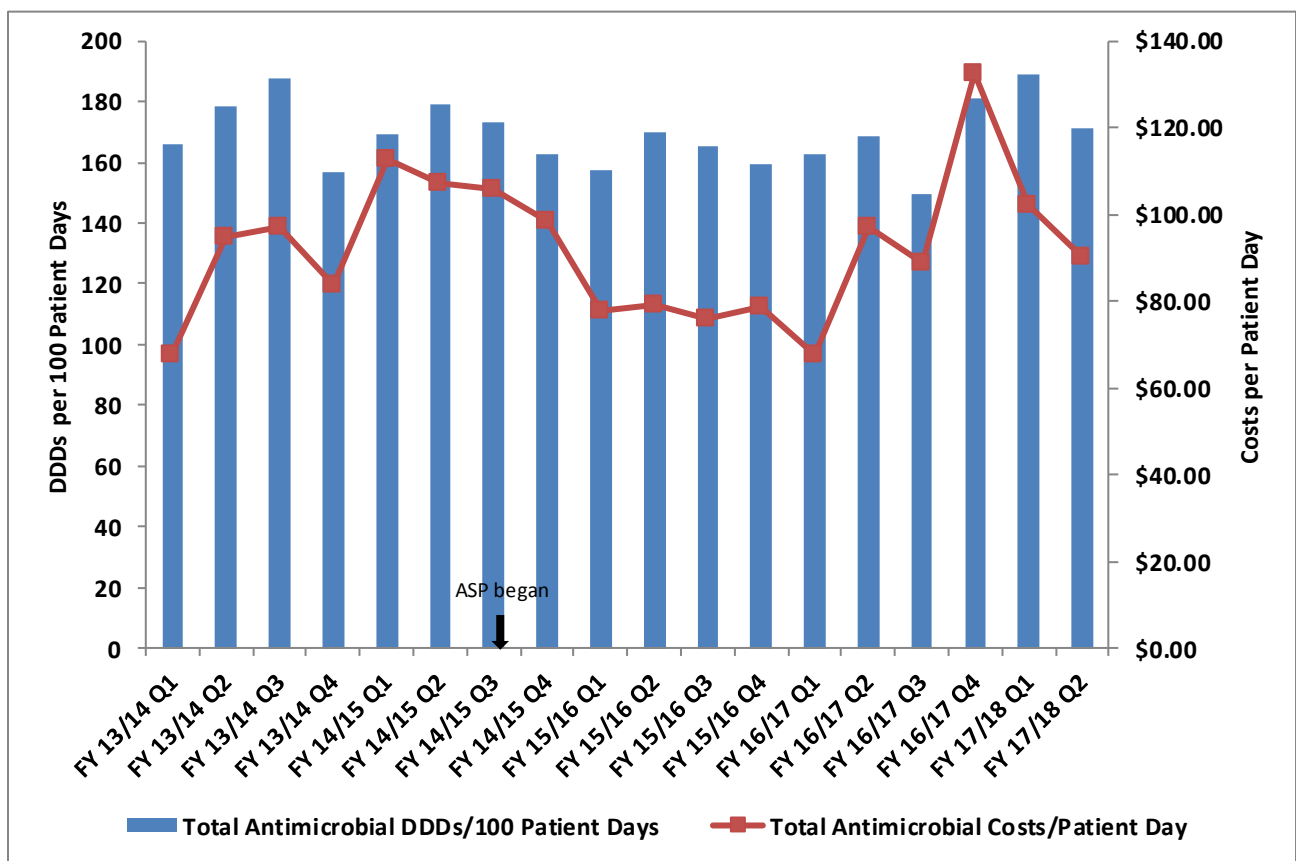


Table 23: Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant

Indicators					FY 17/18 Performance					YTD of Previous Year
	FY 13/14	FY 14/15	FY 15/16	FY 16/17	Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs										
Total Antimicrobial DDDs/100 Patient Days	172	171	163	163	189	171			180	166
Systemic Antibacterial DDDs/100 Patient Days	114	104	107	107	140	123			131	118
Systemic Antifungal DDDs/100 Patient Days	59	67	56	56	48	48			48	48
Total Antimicrobial Costs	\$416,614	\$512,300	\$381,633	\$381,633	\$122,875	\$122,547			\$245,422	\$199,577
Total Antimicrobial Costs/Patient Day	\$85.65	\$106.13	\$77.62	\$77.62	\$101.97	\$89.98			\$95.61	\$82.37
Systemic Antibacterial Costs	\$75,219	\$78,038	\$60,088	\$60,088	\$23,247	\$18,246			\$41,492	\$27,601
Systemic Antibacterial Costs/Patient Day	\$15.46	\$16.17	\$12.22	\$12.22	\$19.29	\$13.40			\$16.16	\$11.39
Systemic Antifungal Costs	\$341,395	\$434,261	\$321,545	\$321,545	\$99,629	\$104,301			\$203,930	\$171,976
Systemic Antifungal Costs/Patient Day	\$70.19	\$89.97	\$65.39	\$65.39	\$82.68	\$76.58			\$79.44	\$70.98
Patient Care Outcomes										
Hospital-Acquired C. difficile Cases (rate per 1,000 patient days)	4 (0.82)	12 (2.49)	7 (1.42)	7 (1.42)	0 (0)	4 (2.94)			4 (1.56)	4 (1.65)

Total Antimicrobial DDDs is the sum of systemic antibacterial DDDs + systemic antifungal DDDs; non-systemic antimicrobials and antivirals are excluded.

Data Sources: Antimicrobial DDD and Costs (Centricity). *An error in DDD calculation for Pip-tazo was detected in Q3 2013; all historical data prior to this was rerun, resulting in minor changes to antibacterial DDDs.

Table 24: Daptomycin Use – Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant

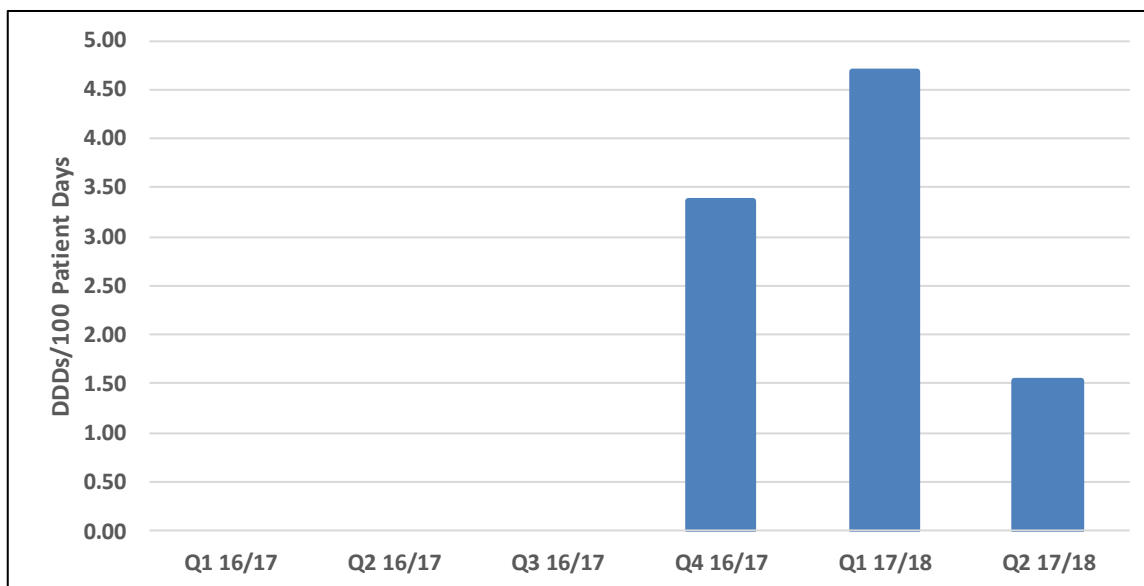
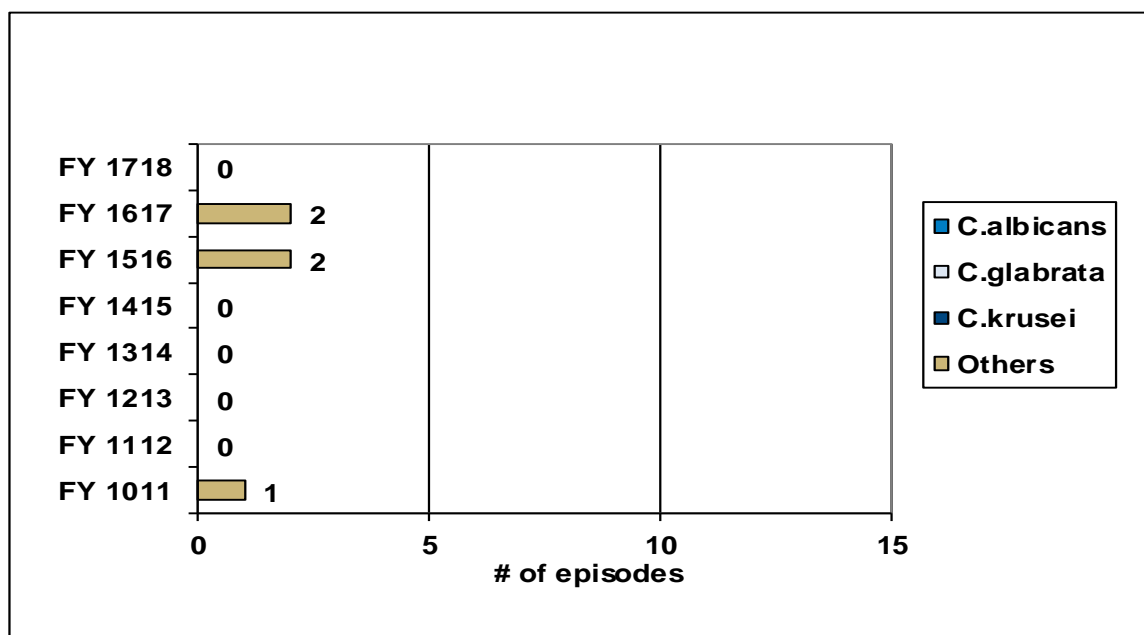
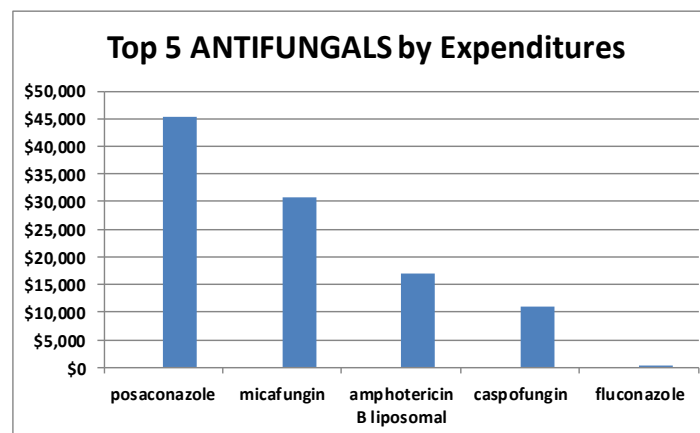
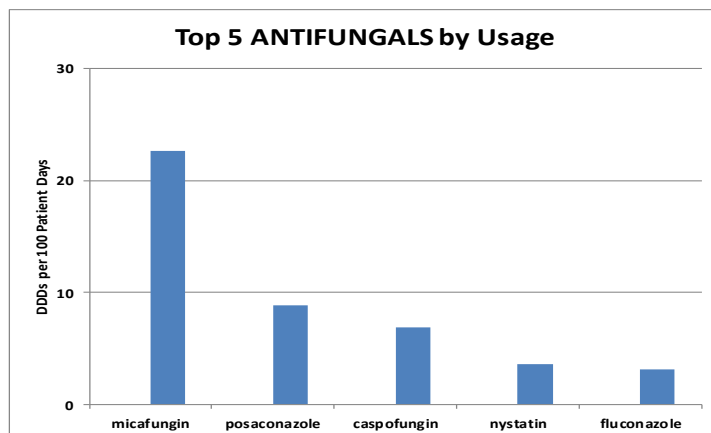
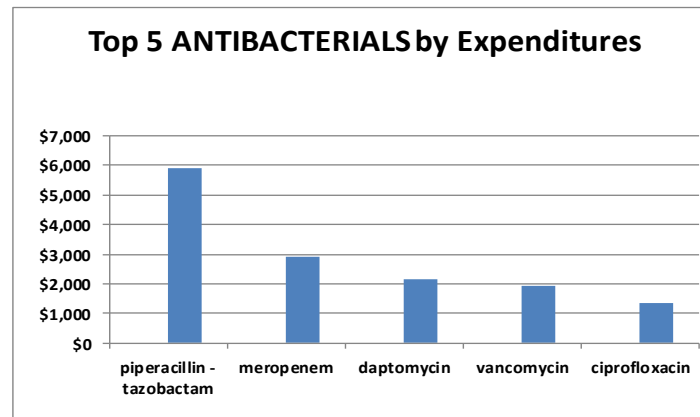
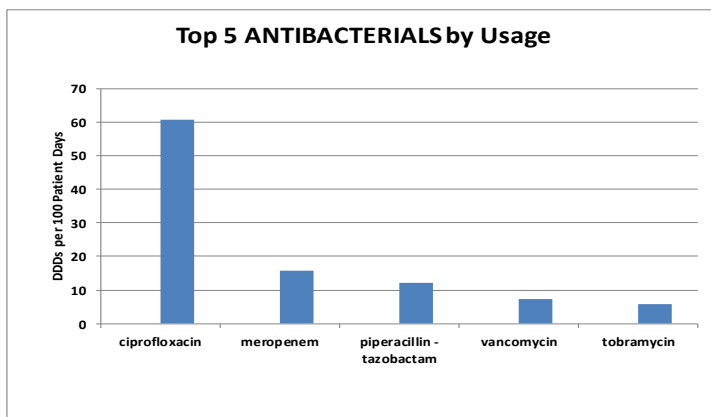


Table 25: Yeast Species Isolated in Blood – Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant



If a patient has more than one organism per culture, it is represented as 0.5.

Table 26: Princess Margaret Cancer Centre: Allogeneic Bone Marrow Transplant 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 patient days) and Expenditures



Toronto General Hospital: Multi-Organ Transplant Program (MOTP)

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 36.5% compared to YTD last year.
- Antimicrobial costs per patient day increased (↑) by 17.1% compared to YTD last year.
- Antibacterial costs per patient day increased (↑) by 44.5% compared to YTD last year.
- Antifungal costs per patient day decreased (↓) by 6.6% compared to YTD last year.

Toronto General Hospital: Multi-Organ Transplant Program (MOTP) Antimicrobial Consumption and Costs

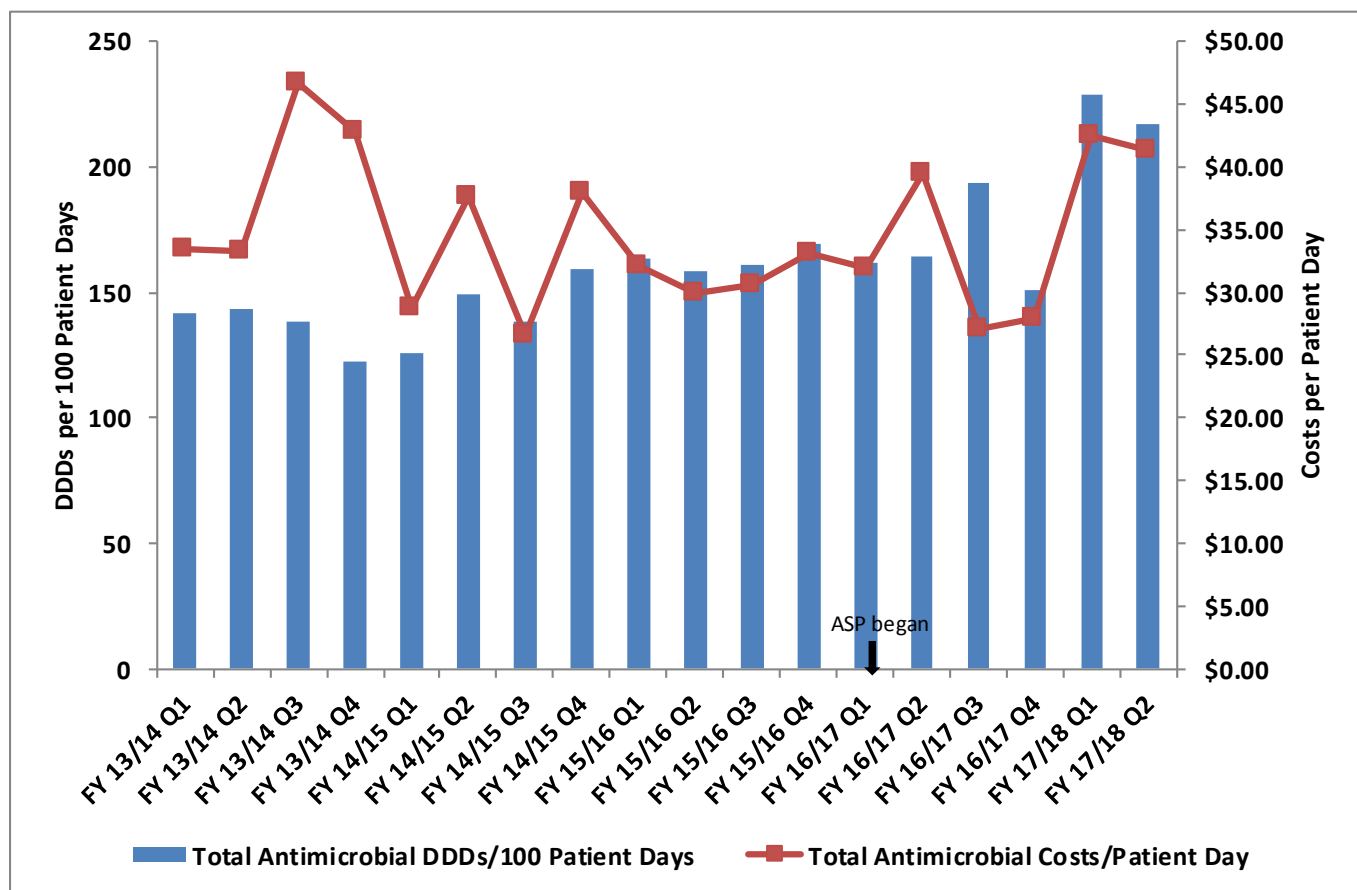
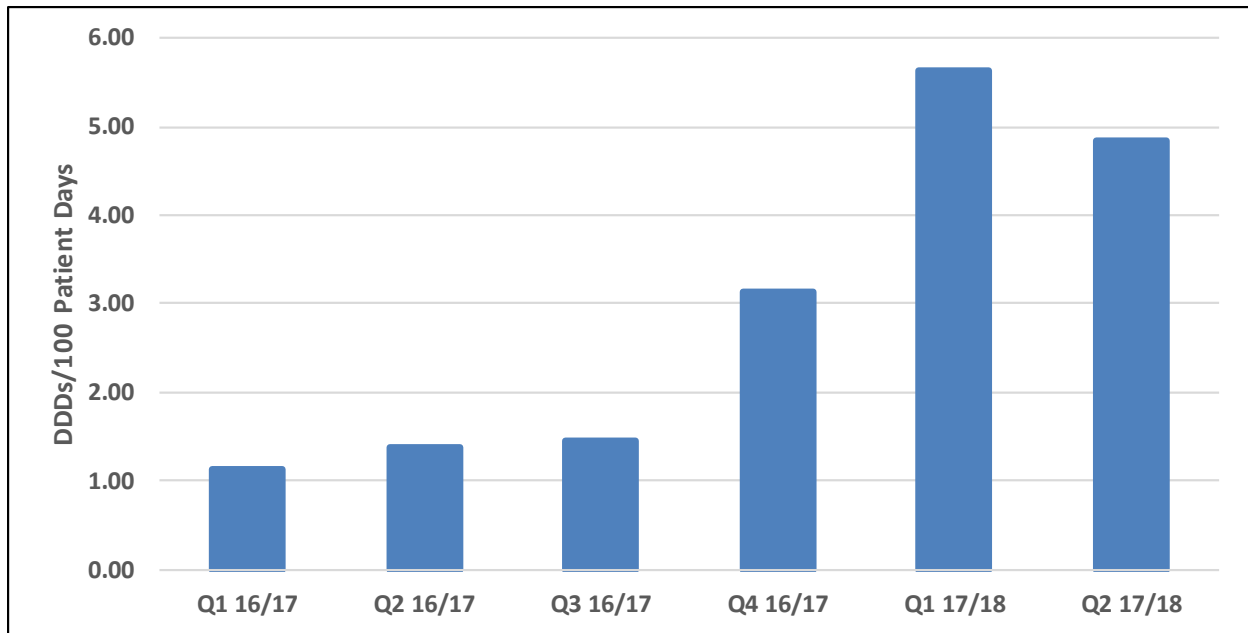


Table 27: Toronto General Hospital: Multi-Organ Transplant Program (MOTP)

Indicators	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 Performance					YTD of Previous Year
					Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs										
Total Antimicrobial DDDs/100 Patient Days	136	143	211	156	229	217			223	163
Systemic Antibacterial DDDs/100 Patient Days	93	98	112	108	166	144			155	113
Systemic Antifungal DDDs/100 Patient Days	43	45	99	48	63	73			68	51
Total Antimicrobial Costs	\$837,263	\$725,411	\$709,892	\$904,028	\$225,964	\$224,585			\$450,550	\$504,200
Total Antimicrobial Costs/Patient Day	\$39.16	\$32.69	\$31.47	\$31.57	\$42.51	\$41.25			\$41.88	\$35.75
Systemic Antibacterial Costs	\$327,831	\$379,748	\$342,941	\$452,266	\$127,428	\$130,416			\$257,845	\$233,867
Systemic Antibacterial Costs/Patient Day	\$15.33	\$17.11	\$15.20	\$15.79	\$23.98	\$23.96			\$23.97	\$16.58
Systemic Antifungal Costs	\$509,433	\$345,664	\$366,951	\$451,762	\$98,536	\$94,169			\$192,705	\$270,333
Systemic Antifungal Costs/Patient Day	\$23.82	\$15.58	\$16.26	\$15.78	\$18.54	\$17.30			\$17.91	\$19.17
Patient Care Outcomes										
Hospital-Acquired C. Difficile Cases (rate per 1,000 patient days)	14 (0.65)	18 (0.81)	11 (0.49)	17 (0.59)	4 (0.75)	2 (0.37)			6 (0.56)	10 (0.71)

Table 28: Daptomycin Use – Toronto General Hospital: Multi-Organ Transplant Program (MOTP)



TORONTO REHABILITATION INSTITUTE

Toronto Rehabilitation Institute: Bickle

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) decreased (↓) by 19.8% compared to YTD last year.
- Antimicrobial costs per patient day decreased (↓) by 31.0% compared to YTD last year.
- Antibacterial costs per patient day decreased (↓) by 29.9% compared to YTD last year.
- Antifungal costs per patient day decreased (↓) by 65.1% compared to YTD last year.

Toronto Rehabilitation Institute: Bickle Antimicrobial Consumption and Costs Per Patient Day

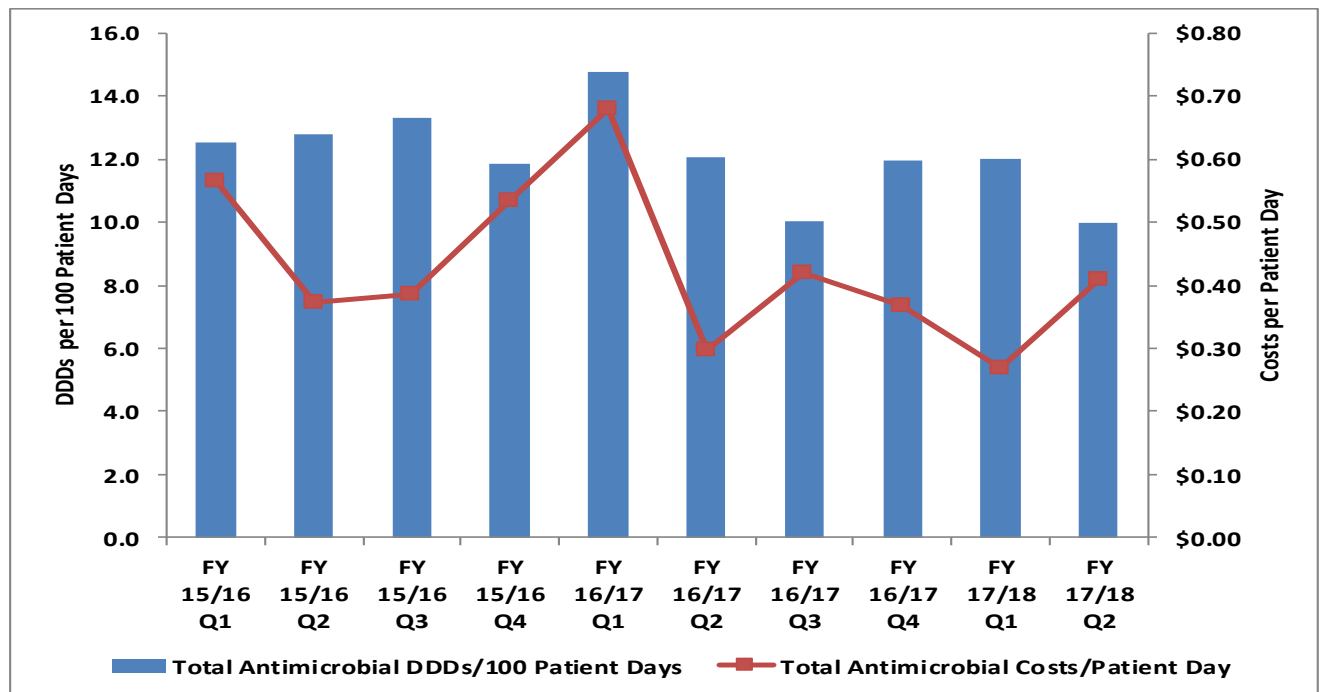


Table 29: Toronto Rehabilitation Institute: Bickle

Indicators	FY 15/16	FY 16/17	FY17/18 Performance					YTD of Previous Year
			Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs								
Total Antimicrobial DDDs/100 Patient Days	13	12	12	10			11	13
Systemic Antibacterial DDDs/100 Patient Days	11	11	11	9			10	11
Systemic Antifungal DDDs/100 Patient Days	2	2	1	1			1	2
Total Antimicrobial Costs	\$31,326	\$28,952	\$4,322	\$6,281			\$10,602	\$16,185
Total Antimicrobial Costs/Patient Day	\$0.46	\$0.44	\$0.27	\$0.41			\$0.34	\$0.49
Systemic Antibacterial Costs	\$29,933	\$23,571	\$4,264	\$6,175			\$10,439	\$15,692
Systemic Antibacterial Costs/Patient Day	\$0.44	\$0.36	\$0.26	\$0.40			\$0.33	\$0.47
Systemic Antifungal Costs	\$1,393	\$5,381	\$58	\$105			\$163	\$493
Systemic Antifungal Costs/Patient Day	\$0.02	\$0.08	\$0.00	\$0.01			\$0.01	\$0.01
Patient Care Outcomes								
Hospital-Acquired C. Difficile Cases (rate per 1,000 patient days)	7 (0.10)	7 (0.11)	2 (0.12)	1 (0.07)			3 (0.1)	5 (0.15)

Toronto Rehabilitation Institute: Lyndhurst

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) decreased (↓) by 2.6% compared to YTD last year.
- Antimicrobial costs per patient day decreased (↓) by 4.7% compared to YTD last year.
- Antibacterial costs per patient day decreased (↓) by 4.4% compared to YTD last year.
- Antifungal costs per patient day decreased (↓) by 73.5% compared to YTD last year.

Toronto Rehabilitation Institute: Lyndhurst Antimicrobial Consumption and Costs Per Patient Day

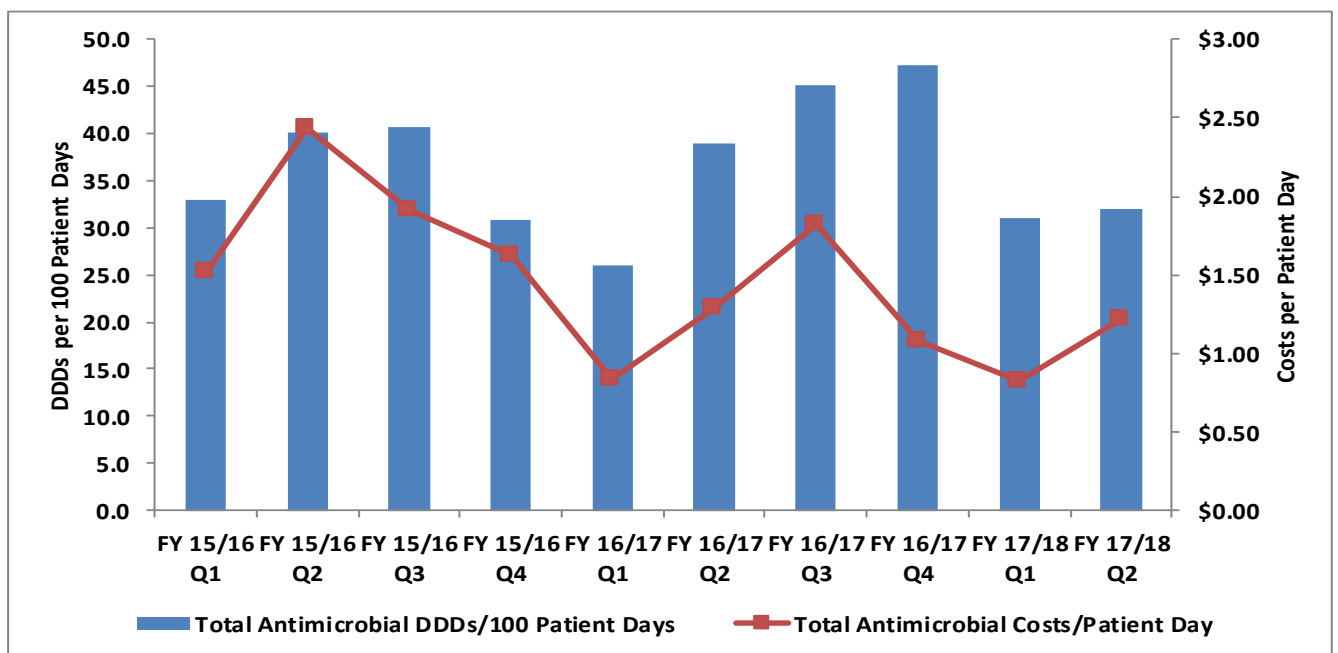


Table 30: Toronto Rehabilitation Institute: Lyndhurst

Indicators	FY 15/16	FY 16/17	FY17/18 Performance					YTD of Previous Year
			Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs								
Total Antimicrobial DDDs/100 Patient Days	36	39	31	32			32	33
Systemic Antibacterial DDDs/100 Patient Days	34	38	31	32			32	32
Systemic Antifungal DDDs/100 Patient Days	2	1	0	0			0	1
Total Antimicrobial Costs	\$35,817	\$23,520	\$3,957	\$5,739			\$9,696	\$9,905
Total Antimicrobial Costs/Patient Day	\$1.88	\$1.26	\$0.82	\$1.22			\$1.02	\$1.07
Systemic Antibacterial Costs	\$35,473	\$23,404	\$3,953	\$5,731			\$9,683	\$9,860
Systemic Antibacterial Costs/Patient Day	\$1.86	\$1.26	\$0.82	\$1.22			\$1.01	\$1.06
Systemic Antifungal Costs	\$344	\$116	\$4	\$8			\$12	\$45
Systemic Antifungal Costs/Patient Day	\$0.02	\$0.01	\$0.00	\$0.00			\$0.00	\$0.00
Patient Care Outcomes								
Hospital-Acquired C. Difficile Cases (rate per 1,000 patient days)	3 (0.16)	1 (0.05)	0 (0)	0 (0)			0 (0)	1 (0.11)

Toronto Rehabilitation Institute: University Centre

The FY 17/18 Q2 summary includes:

- Antimicrobial consumption (using defined daily doses (DDDs) per 100 patient days) increased (↑) by 25.2% compared to YTD last year.
- Antimicrobial costs per patient day increased (↑) by 7.0% compared to YTD last year.
- Antibacterial costs per patient day decreased (↓) by 15.0% compared to YTD last year.
- Antifungal costs per patient day increased (↑) by 26.5% compared to YTD last year.

Toronto Rehabilitation Institute: University Centre Antimicrobial Consumption and Costs Per Patient Day

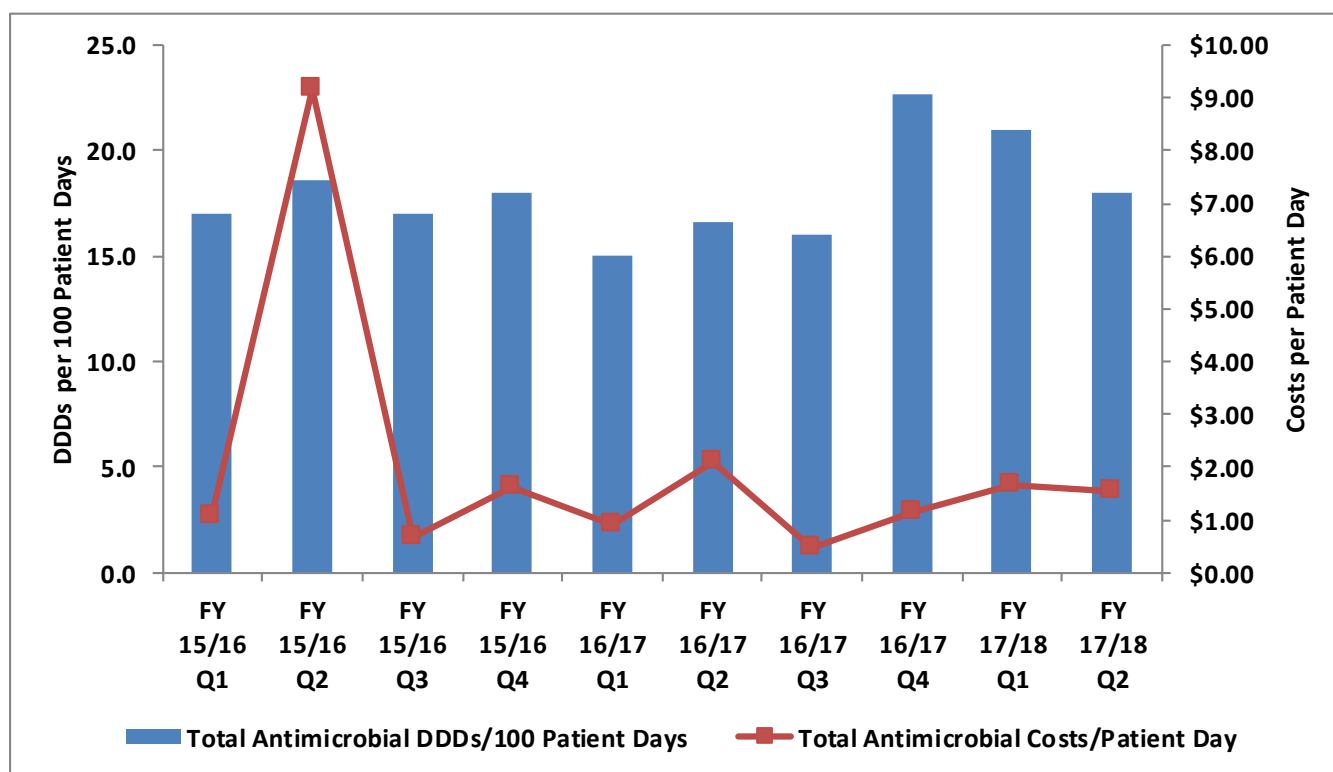


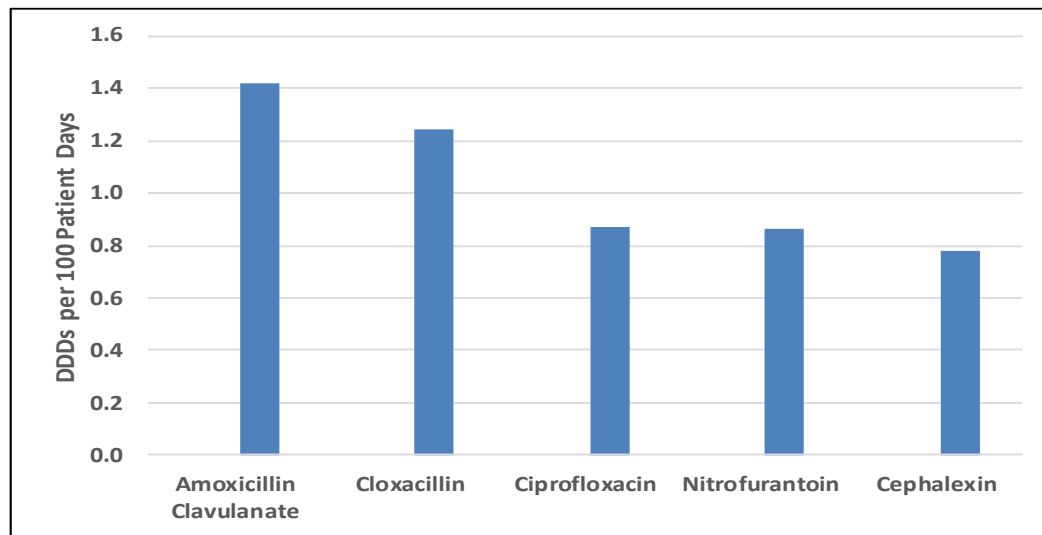
Table 31: Toronto Rehabilitation Institute: University Centre

Indicators	FY 15/16	FY 16/17	FY17/18 Performance					YTD of Previous Year
			Q1	Q2	Q3	Q4	YTD	
Antimicrobial Usage and Costs								
Total Antimicrobial DDDs/100 Patient Days	18	18	21	18			20	16
Systemic Antibacterial DDDs/100 Patient Days	16	15	20	17			18	14
Systemic Antifungal DDDs/100 Patient Days	1	3	2	2			2	2
Total Antimicrobial Costs	\$154,345	\$58,364	\$22,096	\$20,480			\$42,576	\$37,003
Total Antimicrobial Costs/Patient Day	\$3.09	\$1.14	\$1.66	\$1.53			\$1.59	\$1.49
Systemic Antibacterial Costs	\$52,505	\$30,908	\$8,928	\$6,971			\$15,899	\$17,398
Systemic Antibacterial Costs/Patient Day	\$1.05	\$0.60	\$0.67	\$0.52			\$0.60	\$0.70
Systemic Antifungal Costs	\$1,840	\$27,456	\$13,168	\$13,509			\$26,677	\$19,604
Systemic Antifungal Costs/Patient Day	\$0.04	\$0.54	\$0.99	\$1.01			\$1.00	\$0.79
Patient Care Outcomes								
Hospital-Acquired C. Difficile Cases (rate per 1,000 patient days)	2 (0.04)	2 (0.04)	1 (0.08)	0 (0)			1 (0.04)	1 (0.04)

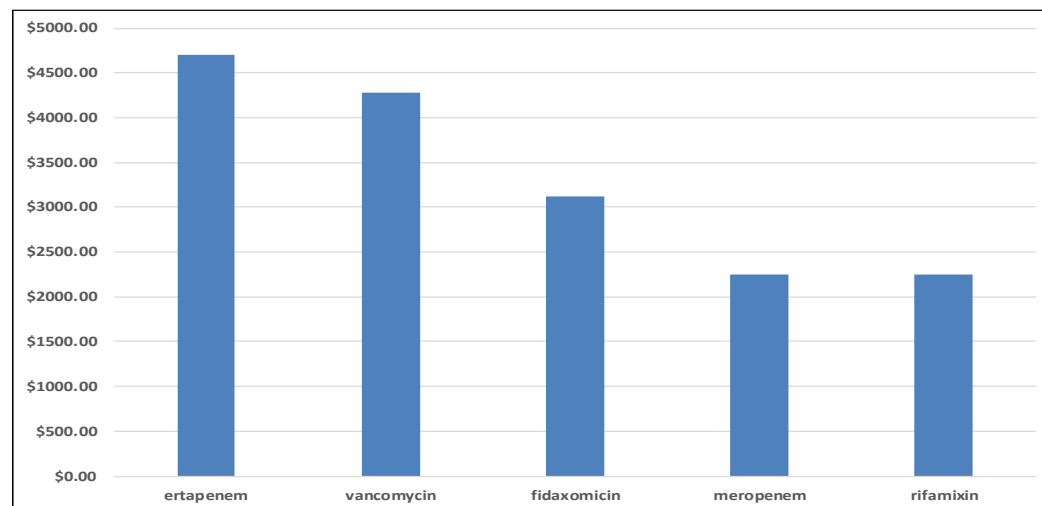
BRIDGEPOINT HEALTH

Bridgepoint Health: Hospital-Wide

**Bridgepoint Health: Hospital-Wide
Top 5 ANTIBACTERIALS by Usage
2017/18 YTD**



**Bridgepoint Health: Hospital-Wide
Top 5 ANTIBACTERIALS by Expenditures
2017/18 YTD**



Bridgepoint Health: Urinary Tract Infection (UTI) Audit

The Antimicrobial Stewardship Program – Bridgepoint Subcommittee initiated a UTI audit with an aim to decrease inappropriate utilization of antibiotics. The UTI audit was designed to determine if antimicrobials were used appropriately post-intervention (CME and guidelines were presented to physicians and education to nurses) for patients with positive urine cultures who have or have not met surveillance criteria for a UTI. One month (May 1 to 31, 2016) of collected data was analyzed and compared to data collected in 2014. Eighty-four of the urine culture reports on 64 patients were included in the audit.

Recent analysis of the data indicates no significant change has been observed post intervention. The results of this audit will initiate continuing steps to support nursing and physicians around UTIs and the appropriate interpretation of urine cultures and utilization of antibiotics. Prescriber-specific feedback is to be provided in the months to come.

Urinary Tract Infection Audit Report

	August-December 2014	May 2016
Cultures	167	50
% not meeting surveillance criteria	59% (98/167)	62% (31/50)
% of above receiving antibiotics	55% (53/98)	55% (17/31)
% organism resistant to antibiotics ordered	5.6% (3/53)	29% (5/17)

BEST PRACTICE GUIDELINES AND ALGORITHMS

- Dr. Shahid Husain and Miranda So have completed the ASP MOT Common Infections Management Guidelines for Solid Organ Transplant Patients. The guidelines have undergone consultative reviews by content experts in MOT and Transplant Infectious Diseases and are currently being rolled-out to the transplantation clinical teams.
- The ASP-Allogeneic Bone Marrow Transplant Working Group was formed to update the antimicrobial prophylaxis guideline for allogeneic bone marrow transplant recipients, with support from Judy Costello, Dr. Andre Schuh, and Dr. Hans Messner. The working group will continue to meet to address any update as needed moving forward.
- **Miranda So** is the recipient of the **Canadian Society of Hospital Pharmacists Ontario Branch Information Technology Award** for the interactive High-Risk Febrile Neutropenia Protocol and the Solid Tumor Febrile Neutropenia Protocol.
- Clinical summaries continue to be available on the [ASP website](#) and on [mobile device web browsers](#) for a series of common and important conditions. Whiteboard animation videos continue to be available on [our program's YouTube channel](#).

EDUCATION

- As part of our General Internal Medicine (GIM) initiative, the ASP team has been providing ongoing education and support to GIM Pharmacists at both MSH and UHN. The ASP team provides education to physicians and medical trainees through several means, including ASP/ID case-based noon rounds, ASP pocket cards for medical trainees, and a mobile ASP web application (m.antimicrobialstewardship.com) to provide efficient access to resources.
- Once a month the ASP team meets with all Nurse Practitioners from the Malignant Hematology program for case rounds.
- The Leslie Dan Faculty of Pharmacy at the University of Toronto is the first institution to offer an elective in Antimicrobial Stewardship in the Entry-to-Practice Doctor of Pharmacy Curriculum. Miranda So (ASP Pharmacist and Assistant Professor) is the course coordinator, with contributions from other ASP team members.
- The SHS-UHN ASP continues to provide ASP rotations for residents and fellows from across the country and internationally.

MEMBERSHIPS

Public Health Agency of Canada

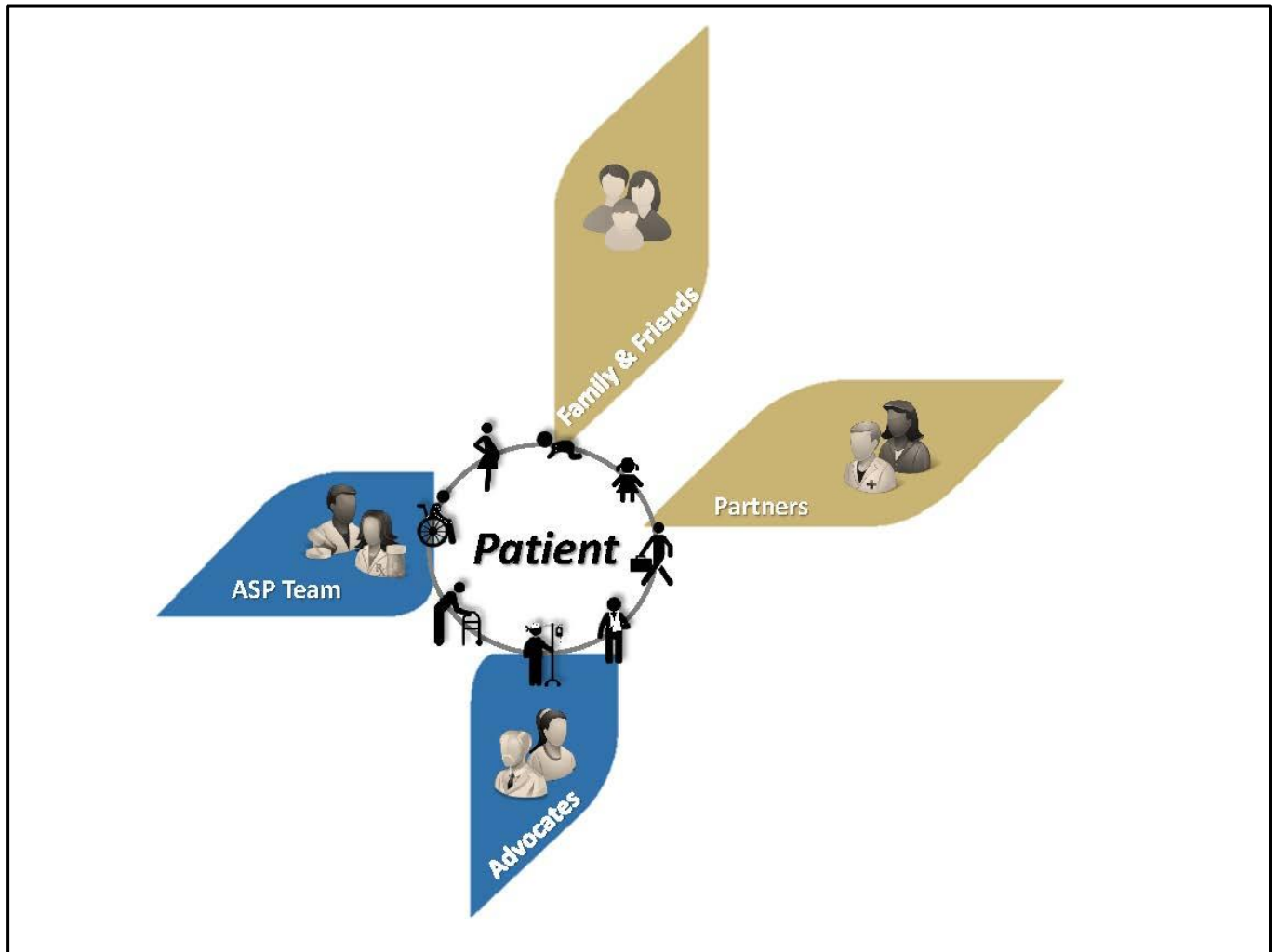
Dr. Andrew Morris is an invited member of EAGAR (Expert Advisory Group on Antimicrobial Resistance), chaired by the Federal Chief Medical Officer of Health, Dr. Theresa Tam.

Association of Medical Microbiology and Infectious Diseases Canada

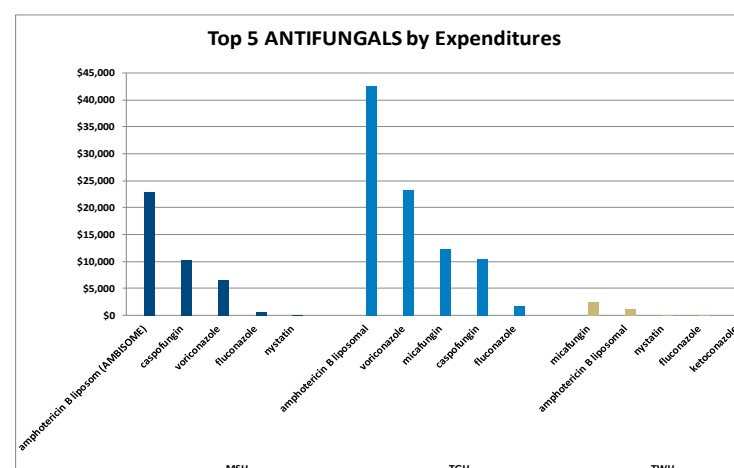
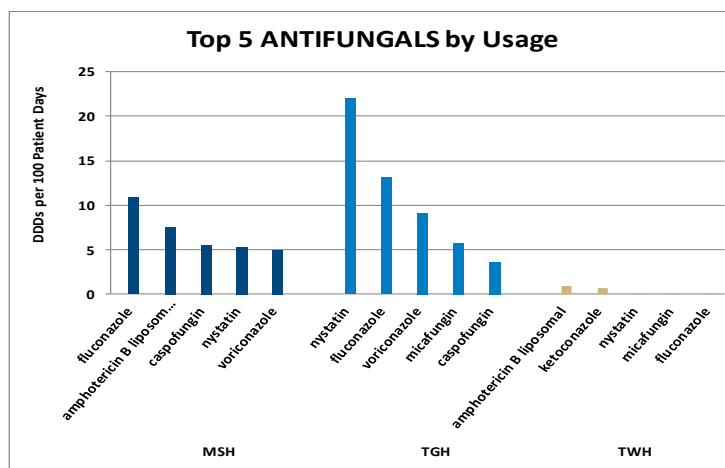
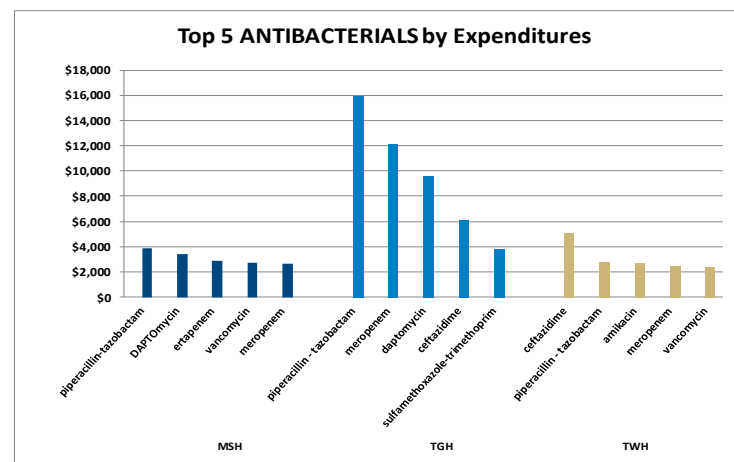
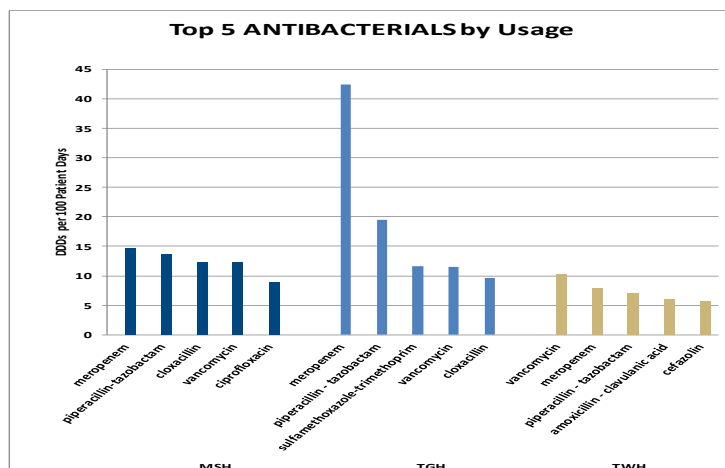
Dr. Andrew Morris is the chair of AMMI Canada's Antimicrobial Stewardship and Resistance Committee. Dr. Linda Dresser is a pharmacist member of this committee.

STRATEGIC PLANNING

The ASP team developed the SHS-UHN ASP Strategic Plan 2016-2019. Please contact Yoshiko Nakamachi (Yoshiko.Nakamachi@uhn.ca) if you would like a copy.



Appendix 1: FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 Patient Days) and Expenditures by ICU Site



Appendix 2: General Internal Medicine FY 17/18 Q2 Top 5 Antimicrobials by Usage (DDDs per 100 patient days) and Expenditures

