

Knowledge and Perspectives of Antimicrobial Stewardship: A Survey of Inpatient and Outpatient Providers

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Background

- There is increasing knowledge of antimicrobial stewardship (AS) among inpatient (IP) healthcare providers (HCP), but this is less clear for the outpatient (OP) setting.
- Recent studies suggest 30% of antibiotics (Abx) prescribed in the OP are unnecessary and should be a focus of future AS efforts.
- We surveyed HCP within our healthcare system on AS to compare the practices and perspectives between IP and OP providers.

Setting and Methods

- Rochester General Hospital (RGH) is a 528-bed acute care community teaching hospital in Rochester, NY, with residency and training programs in internal medicine, obstetrics and gynecology, pediatrics, and pharmacy.
- The Greater Rochester Independent Practice Association (GRIPA) is a physician-led partnership between RGH, other local hospitals, and OP physicians, advanced practice providers and pharmacists in western NY and the Finger Lakes area. Both IP and OP HCP receive emails distributed from GRIPA.
- In February 2017, an 11-item electronic survey was distributed via email to 1725 GRIPA providers. A second request for participation was emailed one month later.
- Fisher's exact test and Chi-square were used to assess for differences between the IP and OP responses.

Results*

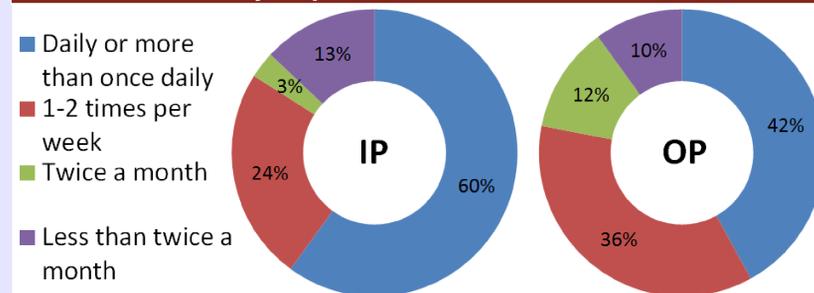
Q1: What is your profession?	IP n (%)	OP n (%)
Total	154	225
Attending physician	61 (40)	167 (74)
Physician-in-training	40 (26)	0 (0)
Advanced Practice Provider	46 (30)	56 (25)
Pharmacist	7 (5)	2 (1)

Q2: What is the scope of your practice?	IP n (%)	OP n (%)
Internal Medicine	77 (50)	57 (25)
Family Practice	2 (1)	32 (14)
Internal Medicine Subspecialty	24 (16)	45 (20)
Internal Medicine/Pediatrics	3 (2)	5 (2)
Pediatrics	8 (5)	34 (15)
Surgery/Obstetrics-Gynecology	40 (26)	51 (23)

Q3: Where do you see patients?	IP n (%)	OP n (%)
Inpatient	82 (53)	
Outpatient		148 (66)
Both, more IN than Out	72 (47)	
Both, more OUT than In		77 (34)

*sum of percentages may not equal 100 due to rounding

Q4: How often do you prescribe an antibiotic?



Q5: What are the 3 most common reasons you prescribe an antibiotic?

	IP responses, n (%)	OP responses, n (%)
#1 Urinary Tract Infection	105 (68)	Urinary Tract Infection 133 (59)
#2 Pneumonia	98 (64)	Sinusitis, pharyngitis, acute bronchitis** 109 (48)
#3 Cellulitis	71 (46)	Cellulitis 90 (40)

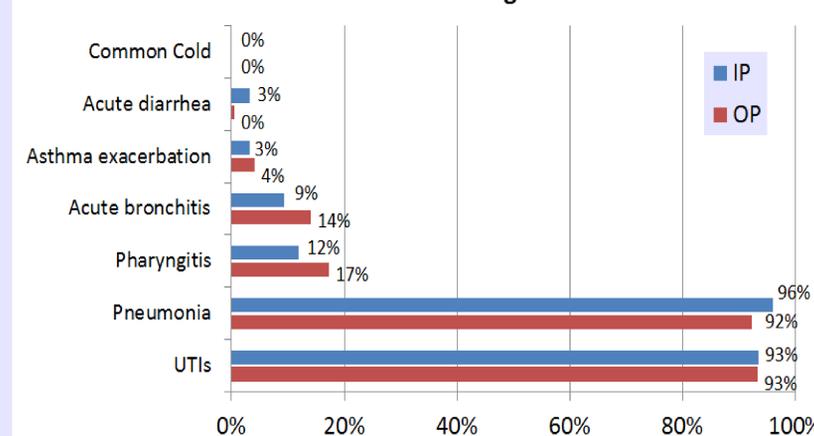
**Significantly more OP chose "Sinusitis, pharyngitis, acute bronchitis" (48% vs 8%, p<0.01).

Q6: What are your 3 most common resources for making antibiotic decisions?

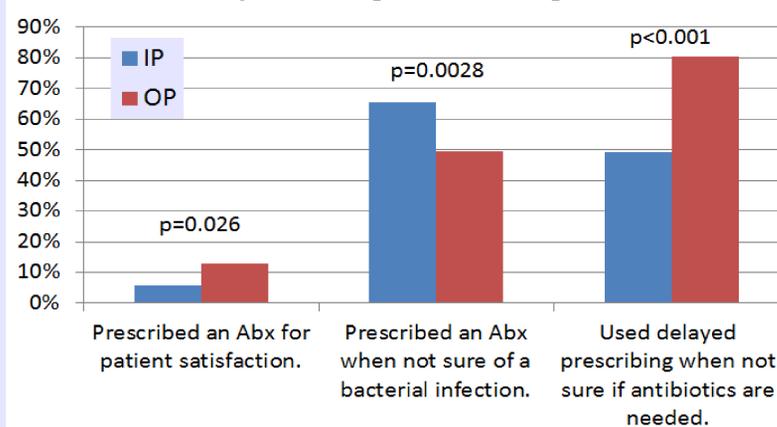
	IP responses, n (%)	OP responses, n (%)
#1 Uptodate	115 (75)	Uptodate 160 (71)
#2 Local antibiogram# 86 (56)		Medical journals, textbooks 38 (44)
#3 Pharmacist^ 63 (41)		Local antibiogram 85 (38)

#Significantly more IP ranked "Local antibiogram" (56% vs 38%, p=0.03)
^Significantly more IP ranked "Pharmacist" (48% vs 15%, p<0.01)

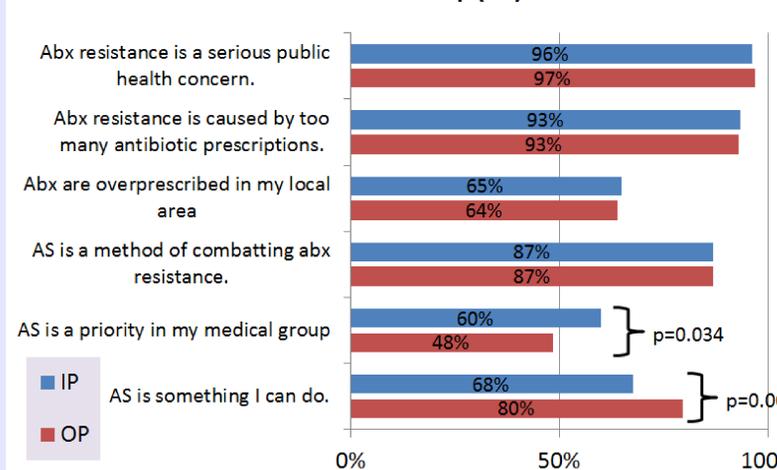
Q7: Percentage of respondents who agree antibiotics are indicated for the following conditions.



Q8: Percentage of respondents who reported performing the following:



Q9: Percentage of respondents who agree with the listed Antimicrobial Stewardship (AS) statement.



Discussion

- Antibiotics are prescribed frequently in both the IP and OP settings: either daily or more than once daily by the majority of respondents in both groups.
- Upper respiratory infections are a major reason for inappropriate antibiotic prescribing among OP HCP.
- There is a potential role for a pharmacist as an AS resource in the OP setting.
- Patient satisfaction may be a greater influence on antibiotic prescribing for OP rather than IP HCP.
- IP HCP are more likely to prescribe antibiotics when unsure of a bacterial infection, whereas OP HCP more often use delayed prescribing.
- While OP HCPs acknowledge the problems of antibiotic overuse and report that AS is something they can do, OP HCP are less likely to agree that AS is a priority for their medical group, and report less access to AS resources such as antibiograms, antibiotic prescribing feedback, or access to a provider designated to AS.
- Increased knowledge of treatment guidelines and access to pharmacy and antibiograms may alleviate this discordance between the understanding and application of stewardship in the OP setting.

Q10: How did you hear about antibiotic stewardship?

	IP n (%)	OP n (%)	p-value
Colleagues	106 (69)	98 (44)	0.011
Conferences or meetings	69 (45)	84 (37)	0.112
Medical journals	40 (26)	98 (44)	0.85
Other	41 (27)	54 (24)	0.72
I have not heard of stewardship.	11 (7)	28 (12)	0.68

Q11: Please select the AS resources to which you have access.

	IP n (%)	OP n (%)	p-value
Institutional or practice guidelines for specific infections (i.e. pneumonia)	126 (82)	149 (66)	0.17
Local antibiogram	108 (70)	104 (46)	0.015
A physician or pharmacist with designated time for stewardship.	108 (70)	47 (21)	0.015
Regular feedback on antibiotic prescribing practices	58 (38)	26 (12)	.0001
Other	10 (6)	17 (7)	.68
I do not have access to resources.	12 (8)	47 (21)	.0036