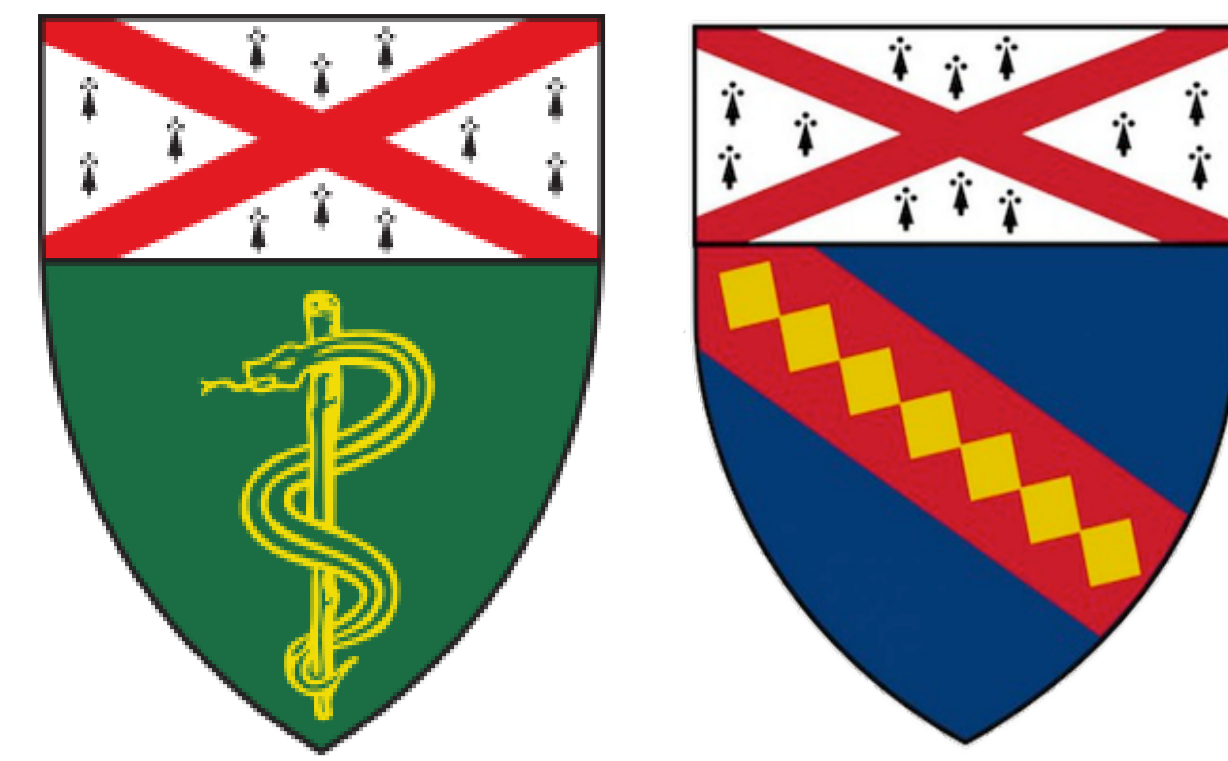


Concordance in End-of-Life Antimicrobial Prescribing Practices among Medicine Subspecialists



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OBJECTIVE

- Most advanced cancer patients experience infection near the end of life resulting in widespread antimicrobial use.¹⁻³
- However, many advanced cancer patients prefer no antimicrobials or antimicrobials for symptom control alone.¹
- Data suggest antimicrobials achieve limited symptom relief and predispose to adverse events.^{4,5}
- **Study Objective:** To evaluate perspectives on antimicrobial use among medicine subspecialists during end-of-life care of advanced cancer patients.

METHODS

Study Design

- Cross-sectional survey of medicine subspecialists at Yale New Haven Hospital
- Subspecialties: hematology/oncology, infectious diseases, pulmonary/critical care, primary care, palliative care

Survey Development

- Reviewed by convenience sample of multiple physicians external to Yale New Haven Hospital
- 27-item survey finalized in REDCap

Data Collection

- Subspecialty, experience, knowledge and preferences regarding antimicrobial use
- Survey distributed January 23, 2018 with 3 weekly reminder emails

Analysis

- Evaluated responses overall and among specified subgroups
- Summarized free text responses to open ended questions

RESULTS

- Respondent characteristics:
 - 275 subspecialists surveyed, 109 (40%) responded
 - Experience: < 10 years (n=52, 48%), ≥ 10 years (n=57, 52%)

Table 1. Antimicrobial perspectives among medicine subspecialists

Characteristic	Overall n=109	Subspecialty, N (%)		
		Heme/Onc n=49	ID n=23	Other n=37
Advance Care Planning				
Conduct advance care planning	82 (75%)	41 (84%)	15 (65%)	26 (70%)
Discuss antimicrobials	40	21	8	11
Specify IV and PO antimicrobials	36	18	8	10
Barriers to Addressing Antimicrobials				
Lack of time	36 (33%)	15 (31%)	10 (44%)	11 (30%)
Family members	57 (52%)	28 (57%)	16 (70%)	13 (35%)
Fear of litigation	25 (23%)	11 (23%)	8 (35%)	6 (16%)
Antimicrobial Decision Making				
Patients and Providers Together	101 (93%)	43 (88%)	22 (96%)	36 (97%)
Withholding Antimicrobials				
Consider above	73 (67%)	35 (71%)	15 (65%)	23 (62%)
When code status changes to:				
Do not resuscitate	1	1	0	0
Comfort measures only	54	27	13	14
No escalation of care	10	4	2	4
Distinguish between IV and PO	35	17	7	11
Deemed unethical	8 (7%)	5 (10%)	1 (4%)	2 (5%)
Withdrawing Antimicrobials				
More difficult than withholding	41 (38%)	19 (39%)	13 (57%)	9 (24%)
IV more difficult than PO	24 (22%)	11 (23%)	5 (22%)	8 (22%)
Consider above unethical	8 (7%)	3 (6%)	1 (4%)	4 (11%)
Escalation of Care				
Include IV agents	66 (61%)	26 (53%)	15 (65%)	25 (68%)
Include restricted agents	66 (61%)	26 (53%)	14 (61%)	26 (70%)
Adverse Effects of IV Antimicrobials				
Thrombosis	37 (34%)	10 (20%)	14 (61%)	13 (35%)
Bloodstream infection	65 (60%)	24 (49%)	21 (91%)	20 (54%)
Local discomfort	81 (74%)	34 (69%)	19 (83%)	28 (76%)
Skin and soft tissue infection	59 (54%)	22 (45%)	15 (65%)	22 (60%)
Diarrhea	97 (89%)	43 (88%)	20 (87%)	34 (92%)
Renal injury	76 (70%)	27 (55%)	20 (87%)	29 (78%)
Impedes transitions of care	67 (62%)	29 (59%)	16 (70%)	22 (60%)

Table 2. Themes from open ended questions.

Theme	Representative Comments
Incorporating subspecialists into end-of-life discussions	“Discussions regarding end-of-life care are generally performed by the primary team. As a consultant, it seems that these end of life discussions are not within our scope. We are not included in these discussions.”
Addressing end-of-life antimicrobials may be overwhelming	“Overwhelming families who are already being flooded with questions on dialysis, tube feeds, use of [vaso]pressors...” “I sometimes do not address it if I think the patient wishes are clear and that bringing up yet another detail will create confusion.”
Insufficient training	“[E]ducation [is needed] on how to discuss withholding antibiotics, emphasizing risks of antibiotic therapy and discuss options other than antibiotics to alleviate symptoms”
End-of-life antimicrobial use varies by patient	“Every situation is different and should be addressed individually... however I feel that it is unethical to knowingly prolong a terminal patient’s life during end of life/active dying unless there is a specific reason to prolong the life as requested by patient”

CONCLUSIONS

- Medicine subspecialists recognize the adverse effects of end-of-life antimicrobial use.
- However, antimicrobial use is not routinely incorporated into advance care planning regardless of medicine subspecialty.
- Subspecialists express a preference to be included in end-of-life discussions with inpatient primary teams.
- Perceived barriers to addressing end-of-life antimicrobial use include the potential to overwhelm patients and families, lack of training, and challenges of withdrawing antimicrobial therapy.

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