

1. Pham TH, Amsterdam E, Glassy MS. Syncope with bifascicular block due to infra-Hisian Wenckebach conduction abnormality. *JAMA Intern Med.* 2018;178(10):1408-1410. doi:10.1001/jamainternmed.2018.3951

In Reply We would like to thank Dr Bansal for his comments regarding interpretation of the His electrogram in our Figure 2.¹ We would agree that careful positioning of catheters such that their electrograms are present on the recording channel is important but we would disagree with his conjecture regarding our conclusions. On careful rereview of electrograms from the case, the evidence supports our initial conclusions of infra-Hisian Wenckebach block rather than intra-atrial conduction delay or AV nodal Wenckebach conduction block as speculated. We would like to first point out that the purpose of the intracardiac electrogram in the Figure 2 of the manuscript is to illustrate infra-Hisian conduction abnormalities for an audience of internal medicine physicians and therefore the most salient example of infra-Hisian Wenckebach block was included in the figure while excluding extraneous information (ie, additional electrograms recorded during the case) not focused on that point.

We would also like to comment on several features about the electrograms in this case that may have been overlooked. In the case of extensive disease in the His-Purkinje conduction system, it can be challenging to record the His potential. It may only be possible to record the His potential in a very limited area, it can be small in amplitude, and it can be somewhat broad or split. Occasionally the His cannot be recorded at all despite multiple attempts. In our case, the His potential was only recorded in the distal His position where no atrial electrogram was visualized. This explains the absence of an atrial recording on our His recording and one cannot use the absence of an atrial electrogram or the His morphology to exclude an appropriately timed potential as a His recording. Additionally, an echocardiogram showed normal right atrial size with a mildly dilated left atrium and there was no evidence of intra/inter-atrial conduction disease on electrophysiology study. On review of several additional recordings, spontaneous premature atrial contractions as well as extra-atrial stimuli resulted in progressive prolongation of the stimulus to His potential (decremental conduction), even when the coupling interval was very long. Delay of this degree in the atrium is highly consistent with AV node conduction physiology and strongly indicates that the potential recorded is in fact a His potential. The constant stimulus to His interval in Figure 2 therefore represents normal conduction from the atrium and through the AV node as expected. Given the preponderance of evidence, we feel this is an example of infra-Hisian Wenckebach conduction block rather than an imposed explanation of why it is not.

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Balance Between Best Practice and Patient Satisfaction: Antimicrobial Stewardship in Telemedicine

To the Editor In a recent issue of *JAMA Internal Medicine*, Martinez and colleagues¹ demonstrated an association between antibiotic prescribing for treatment of respiratory tract infections (RTIs) and patient satisfaction scores in direct-to-consumer (DTC) telemedicine. Based on a patient satisfaction rating scale of 0 to 5, the authors dichotomized their primary outcome of patient satisfaction as 5 stars vs fewer than 5 stars; they found that 91% of patients prescribed antibiotics for treatment of RTI provided a 5-star rating compared with 73% of patients not prescribed antibiotics and 86% of patients given a nonantibiotic prescription. The authors concluded that “Few physicians achieved even the 50th percentile of satisfaction while maintaining low rates of antibiotic prescribing. To reach the top quartile, a physician had to prescribe antibiotics at least half the time.”^{1(p1559)}

The language used in this conclusion might be misinterpreted by a DTC health care provider as encouragement to prescribe antibiotics unnecessarily in order to boost their patient satisfaction ratings. Instead, we should interpret these findings to support good antibiotic stewardship in DTC telemedicine. First, this study demonstrates that the majority of patients who did not receive an antibiotic for RTI treatment remained highly satisfied. Second, patients who did not receive an antibiotic were not shown to have been dissatisfied. With the outcome dichotomized as 5 stars vs fewer than 5 stars, a rating of 4 out of 5 was grouped with a rating of 0 or 1 out of 5, though these ratings are not equivalent. Third, knowledge that a nonantibiotic prescription left patients more satisfied than no prescription at all may suggest that patients value receiving something for their visit, which should encourage health care providers to focus on symptomatic relief.

Telemedicine health care providers can and should use these findings to prioritize practicing clinically appropriate, evidence-based medicine over patient ratings, and they can do so without compromising patient satisfaction as a tool to evaluate physicians. Taking into account the influence of antibiotic overprescribing on antimicrobial resistance along with the exponential increase in DTC telemedicine visits over the past several years, telemedicine health care providers can play an important role in the global fight against antibiotic resistance by practicing strong antibiotic stewardship.

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1. Martinez KA, Rood M, Jhangiani N, Kou L, Boissy A, Rothberg MB. Association between antibiotic prescribing for respiratory tract infections and patient satisfaction in direct-to-consumer telemedicine. *JAMA Intern Med.* 2018; 178(11):1558-1560. doi:10.1001/jamainternmed.2018.4318

To the Editor As antibiotic stewardship programs have reduced inappropriate prescribing habits in primary care, as well as in urgent and emergency care settings, is virtual care now in need of scrutiny?

We read with interest the Research Letter by Martinez and colleagues¹ regarding an association between antibiotic prescriptions for treatment of respiratory tract infections via telemedicine and increased patient satisfaction scores among Online Care Group (American Well) health care providers. As the authors note, antibiotic stewardship has long been an international priority, and it is imperative that we understand the factors that may influence health care providers' decisions to inappropriately prescribe.²

The analysis describes a placebo effect: patients are more satisfied with an experience where something is "done" vs "not done." Although previous studies have inconsistently found correlation between antibiotic prescribing and patient satisfaction,³⁻⁵ it is of interest to us that with the growth of virtual encounters, this study did find such an association. Does the investment of time and travel that occurs with an in-person encounter provide the opportunity to educate the patient on the rationale for withholding antibiotics in these cases? Are the demographics or previsit expectations of either patients or health care providers (or both) causing enhanced pressure or bias toward antibiotic prescribing?

These issues are not unique to virtual care, yet the study by Martinez and colleagues¹ may offer a view into their magnification as care delivery organizations and patients embrace the flexibility, convenience, and reduced cost of virtual care. Antibiotic stewardship efforts should not single out telemedicine alone but continue to target all practice delivery sites. Nonetheless, this research identifies new territory for the reemergence of a disease we have not yet eradicated (*hyperprescription antimicrobia*) through a new vector: the computer. We are presented with a unique opportunity to formulate an aggressive treatment plan for a disease we already know how to treat. The power of telemedicine service delivery is its potential to reach audiences who may not otherwise be reached. Let us not squander the influence by permitting low quality, low value care in this setting.

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In Reply We thank Kilby and colleagues for their comments on our study.¹ They assert that treatment of respiratory tract infections in telemedicine somehow represents a setback to progress in antibiotic stewardship and question the relationship between antibiotic prescribing and patient satisfaction. We agree that this issue is not unique to telemedicine, but high rates of antibiotic prescribing occur in urgent care settings more broadly. Our study offers one explanation for why these services are so popular—they give patients what they want. Prior studies^{2,3} demonstrating no association between antibiotic prescribing and patient satisfaction have had limitations that made this association difficult to assess, notably long lag times between encounters and assessment of satisfaction. In our study,¹ satisfaction was assessed immediately following the encounter and resulted in low risk of recall bias and a high response rate. Moreover, the association was so strong that it is hard to argue it is not real.

Traditional efforts to curb antibiotic prescribing in primary care (eg, peer comparison and accountable justification)⁴ may not be effective in urgent care settings, including telemedicine, because efforts to control physician prescribing in one venue are likely to push patients to seek care in another, more accommodating one. Physicians who have their satisfaction ratings displayed at the time of physician selection, as is the case in telemedicine, may be particularly susceptible to this influence.

Dean and colleagues' questioned whether the differences in satisfaction were meaningful and noted that most patients rated their physician as 4 or 5 stars. However, as a measure, satisfaction is not normally distributed and tends to have pronounced ceiling effects. Consumers know this and understand that there is a vast difference between a 4.1 and a 4.9. In fact, the ride-share company Uber decommissions drivers with scores lower than 4.6,⁵ and the Centers for Medicare &

Medicaid Services report the percentage of “top box” ratings⁶ on their Physician Compare website.

The rapid expansion of telemedicine magnifies the issues already present in urgent care and requires new strategies to combat inappropriate antibiotic prescribing. One possibility is national education of patients. This could include traditional explanations of why antibiotics are not appropriate and could highlight concerns about antibiotic resistance. However, these themes appear not to have resonated with patients in the past. New dangers, which are harder to quantify, include harmful changes to the microbiome. Telling patients that antibiotics might cause them to gain weight or develop diabetes 10 years in the future could have a much larger influence, but we need stronger evidence that this is true. In the short term, tweaks to patient satisfaction measures aimed at mitigating the influence of antibiotic prescribing, such as excluding respiratory tract infection visits from a physician’s aggregate rating, may be necessary.

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Older People Might Be at Most Serious Risk in Antihypertensive Treatment

To the Editor I read with interest the recent article by Sheppard and colleagues¹ that suggested antihypertensive treatment may not result in benefit in terms of mortality or cardiovascular disease and may instead cause significant adverse effects. I would like to underscore the even more pronounced and serious risks of such treatment in older people with mild hypertension. Although the authors did not find a difference in adverse effects of antihypertensive treatment between

people older or younger than 65 years, this does not mean older and younger people have similar risks associated with treatment. One of the reasons is that people older than 74 years were not included in this study. Second, people older than 64 years commonly have comorbidities, and they are usually excluded from such trials.² Lastly, even if older and younger people experience similar rates of adverse events related with treatment, older people are generally more seriously injured from these events. For instance, falls result in fractures and brain injuries more commonly in older people, especially if they are frail.³ Even moderate-intensity antihypertensive treatment is associated with serious fall injuries, particularly among those with previous fall injuries.⁴ Thus, more caution should be taken before initiating antihypertensive treatment to an older person with mild hypertension.

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In Reply We thank Tufan for highlighting the uncertainty relating to treatment of older patients with mild hypertension. In our study,¹ we limited the analysis to patients younger than 75 years because our interest was in whether treatment was appropriate for low-risk patients. Our observational data were drawn from electronic health records from general practices in England and, as such, were representative of the population up to the age of 75 years, including presence of comorbidities. According to most clinical guidelines,² patients 75 years or older should be considered at high risk of cardiovascular disease; hence, those patients were excluded from our study. In subgroup analyses, we did not find a difference between younger and older patients in the association between treatment and mortality or cardiovascular disease; however, these analyses may have been underpowered and, therefore, should be interpreted with caution.

There is limited evidence from randomized clinical trials as to whether treatment is appropriate in older patients with mild hypertension. The HYVET trial³ is the largest study of blood-pressure lowering in older patients, but this study focused on patients with stage 2 hypertension at baseline (>160