**Supplemental Materials**

This supplement contains the following information:

1. The survey instrument administered in the study.
2. The institutional and national algorithms used to devise the survey instrument (Supplement Figures 1-3).
3. Select quotes from study participants from the qualitative component of the study
4. Additional statistical analyses (Supplement Tables 1-6; Supplement Figures 2-3)

**Survey Instrument**

**#1 - A 67 year old female with a left hip replacement 18 months ago, presents to your clinic for ultrasonic scaling for substantial accumulation of calculus. She has a history of well-controlled rheumatoid arthritis on hydroxychloroquine. She does not have any previous history of prosthetic joint infections.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**#2 - A 20 year old male presents to your office with a 2 day history of oral pain due to a partially  erupted right lower third molar. On examination, you note some tenderness to palpation and mild intraoral swelling. He has a temperature of 99.1 but denies any other systemic symptoms including  chills, or night sweats. He does not have traumatic occlusion or trismus.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**#3 -  A 42 year old male with a history of poor oral hygiene presents to your office with a 1 day history of upper left intraoral pain. On examination you notice localized vestibular swelling associated with the upper left 2nd molar. He has no fever, and pain is controlled with over the counter NSAIDS. He has a headache which he attributes to heavy drinking last night.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**#4- A 77 year old female with a history of moderate aortic stenosis presents to your office for a subgingival restoration of a premolar. She denies any history of valve repair or replacement.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**#5 - A 27 year old male presents to your office with a 3 day history of severe pain in his right jaw. He has tried over the counter ibuprofen without any help. He presents today because the pain is keeping him up at night. He has no fever and the rest of his vital signs are normal. On examination his pain localizes to the 2nd molar. It is worse with heat and cold. He has no evidence of swelling. He denies any fevers, headache, myalgias, or malaise.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**#6 - A 54 year old female with a right knee replacement is scheduled to see you for a root canal. Her knee replacement was about 6 months ago. Her surgery was complicated by a postoperative hematoma, which resolved spontaneously. She is not immunocompromised, does not have diabetes, and has no history of a joint infection.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**#7 - An 89 year old male will present to your office for restoration of a molar next month. He has a history of severe aortic stenosis and atrial fibrillation. He has a pacemaker which has been present for the last 4 years.**

**How likely are you to prescribe antibiotics?**

* Never
* Unlikely
* Maybe
* Probably
* Always

**How confident are you in your decision?**

* Not confident at all
* Slightly confident
* Moderately confident
* Very confident
* Extremely confident

**Algorithms used for the vignettes**

**Supplement Figure 1: Acute Oral Swelling Algorithm**

Note. This tool is based on institutional guidelines from the University of Illinois College of Dentistry.

**Supplement Figure 2a: Endocarditis Prophylaxis Algorithm**



**Supplement Figure 2b. Endocarditis Prophylaxis Algorithm Notes.**



Tool based on University of Illinois College of Dentistry Guidelines, which are adapted from American Dental Association Guidelines.

**Prosthetic Joint Prophylaxis Algorithm.**

This algorithm is publicly available on the American Academy of Orthopedic Surgeons Website here: https://www.orthoguidelines.org/go/auc/auc.cfm?auc\_id=224995

**Supplement Figure 4: Acute Pericoronitis Algorithm**

Note. This tool is based on institutional guidelines from the University of Illinois College of Dentistry

**Select qualitative quotes from study participants.**

Quotes from study participants

|  |  |
| --- | --- |
|  | Quotes |
| Baseline dental practices | Almost exclusively amoxicillin or clindamycin is what I've seen in practice. And I think that's just what dentists are comfortable prescribing.If they have contraindication to [amoxicillin], then I think you defer to clindamycin.It's a lot of attending preference [on when to prescribe antibiotics]. People get stuck in their ways of how they were taught to do it.So my understanding is that we would prescribe antibiotics is mostly if the patient has systemic-like symptoms, if the patient has a high fever, if the patient has extra oral swelling, something that seems more systemically involved.There's a drug database, Lexicomp, that we can use that will have… general dosage information.We have these helpful links on our axiUm. That we can access on the go as opposed to Googling things.I believe it was within a year you're supposed to do prophylactic antibiotics… or was it six months?I believe the updated guidelines [for prosthetic joint infection prophylaxis] are… three or five years.I think that there is an overabundance of resources. I think that kid of muddies the waters as far as when to and when not to [prescribe antibiotics].We have been taught for a while clindamycin [is second-line], but I believe that just changed recently [to azithromycin]. |
| Relationship between physicians and dentists | And we're just kind of like, okay, if your doctor says so.I think it makes sense to just kind of go with your clinical judgment. I mean, we are trained on this topic.Some [patients] will even go ahead and bring their own dose [of antibiotics] from their physician.We just do what the doctor says [regarding antibiotic instructions]; that’s the end of it.It feels like it could be more appropriate for [the physician] to make the call. They… have a more holistic view of the entire body and everything that’s going on.The PCP was like, ‘For any joint replacement, we're going to give antibiotic prophylaxis.’… My patient had [her joint replacement] 20 years ago. So we talked with … Dr. X here, and she's like, ‘We don't have to follow that because they're not following the updated guidelines.’ |
| Perceived problems with current workflows and knowledge | I think that there is a lack of knowledge.The patient doesn’t need an antibiotic but we just want to give it anyways… for peace of mindI personally have not prescribed antibiotics.Maybe I'm overdoing things [with a 7 day prescription of antibiotics].The mentality is ‘I just want to be on the safe side” … I don’t want [the joint replacement] to fail.I don’t see [defensive dentistry] too much with prophylactic antibiotics. I see it more when patients come in as an ‘emergency’ and they have pain but they don’t really need antibiotics.If the patient is pushing for antibiotics, sometimes we will placate their desire… Sometimes if you don’t give it to them, they just assume you don’t know what you’re doing. |
| Tool preferences | I’d like a tool on how long to prescribe [antibiotics] or better indications.If we can have something that's more straightforward that you can go through when you're an axiUm, and that you can refer to that would be very usefulCreating a more authoritative [tool]…has the ability to be the main resource for dentists and whoever else is prophylactically prescribing because there is a ton of gray area.I think [a tool] would be very helpful, especially with antibiotics and the fear of creating resistance.I think the electronic approach works better than the paper approach because… [you can] work it up right there on the spot… It’s more efficient then.The good thing of having [the tool] on axiUm and the computer is that you don't have to use your phone. Some patients might think you're doing something else.I like [the American Academy of Orthopedic Surgeons decision tree]. Because it's less subjective, I feel. You have some objective questions that are being asked.If we had something like that for other situations, I feel like it would be very useful.[A decision tree] just helps… organizing information in my head, because if they just give us a list of different pathologies and say, ‘Okay, go memorize this,’ there's not an organized and structured way to go about diagnosing. When you have decision trees it's a lot easier. |

**Additional Statistical analyses**

**Supplement Table 1. Descriptive statistics for likelihood of prescribing antibiotics by scenario and overall**

| **Label** | **Never** | **Unlikely** | **Maybe** | **Probably** | **Always** | **Mean +/- SD** |
| --- | --- | --- | --- | --- | --- | --- |
| Scenario 1: Likelihood of prescribing antibiotics | 20 (9.4%) | 98 (46%) | 39 (18.3%) | 39 (18.3%) | 17 (8%) | 2.69 +/- 1.12 |
| Scenario 2: Likelihood of prescribing antibiotics | 14 (6.6%) | 65 (30.5%) | 39 (18.3%) | 75 (35.2%) | 20 (9.4%) | 3.1 +/- 1.14 |
| Scenario 3: Likelihood of prescribing antibiotics | 30 (14.1%) | 91 (42.7%) | 46 (21.6%) | 33 (15.5%) | 13 (6.1%) | 2.57 +/- 1.1 |
| Scenario 4: Likelihood of prescribing antibiotics | 56 (26.3%) | 92 (43.2%) | 39 (18.3%) | 21 (9.9%) | 5 (2.3%) | 2.19 +/- 1.01 |
| Scenario 5: Likelihood of prescribing antibiotics | 69 (32.4%) | 90 (42.3%) | 29 (13.6%) | 17 (8%) | 8 (3.8%) | 2.08 +/- 1.06 |
| Scenario 6: Likelihood of prescribing antibiotics | 11 (5.2%) | 70 (32.9%) | 43 (20.2%) | 50 (23.5%) | 39 (18.3%) | 3.17 +/- 1.22 |
| Scenario 7: Likelihood of prescribing antibiotics | 27 (12.7%) | 72 (33.8%) | 44 (20.7%) | 43 (20.2%) | 27 (12.7%) | 2.86 +/- 1.24 |
| Average likelihood of prescribing antibiotics across all 7 scenarios | 2.67 +/- 0.55 |

Average likelihood is a mean of all scenarios and ranges from 1-5 (analogous to the original scale), where higher values indicate higher likelihood of prescribing antibiotics overall

**Supplement Table 2. Descriptive statistics for confidence in antibiotic prescribing decision by scenario and overall**

| **Label** | **Not confident at all** | **Slightly confident** | **Moderately confident** | **Very confident** | **Extremely confident** | **Mean +/- SD** |
| --- | --- | --- | --- | --- | --- | --- |
| Scenario 1: Confidence in decision | 23 (10.8%) | 34 (16%) | 56 (26.3%) | 75 (35.2%) | 25 (11.7%) | 3.21 +/- 1.17 |
| Scenario 2: Confidence in decision | 15 (7%) | 26 (12.2%) | 74 (34.7%) | 71 (33.3%) | 27 (12.7%) | 3.32 +/- 1.07 |
| Scenario 3: Confidence in decision | 22 (10.3%) | 34 (16%) | 59 (27.7%) | 73 (34.3%) | 25 (11.7%) | 3.21 +/- 1.16 |
| Scenario 4: Confidence in decision | 19 (8.9%) | 38 (17.8%) | 79 (37.1%) | 45 (21.1%) | 32 (15%) | 3.15 +/- 1.15 |
| Scenario 5: Confidence in decision | 18 (8.5%) | 32 (15%) | 50 (23.5%) | 72 (33.8%) | 41 (19.2%) | 3.4 +/- 1.2 |
| Scenario 6: Confidence in decision | 18 (8.5%) | 36 (16.9%) | 57 (26.8%) | 77 (36.2%) | 25 (11.7%) | 3.26 +/- 1.13 |
| Scenario 7: Confidence in decision | 25 (11.7%) | 33 (15.5%) | 79 (37.1%) | 50 (23.5%) | 26 (12.2%) | 3.09 +/- 1.16 |
| Average confidence in decision across all 7 scenarios | 3.24 +/- 0.97 |

Average confidence is a mean of all scenarios and ranges from 1-5 (analogous to the original scale), where higher values indicate higher confidence overall

**Supplement Table 3. Comparison of likelihood of antibiotic prescribing among students, residents, and faculty for each scenario and overall**

| **Label** | **Group** | **Student** | **Resident** | **Faculty** | **p-value** |
| --- | --- | --- | --- | --- | --- |
| Scenario 1: Likelihood of prescribing antibiotics | Never | 12/151 (7.9%) | 6/27 (22.2%) | 2/35 (5.7%) | 0.011 |
| Unlikely | 68/151 (45%) | 14/27 (51.9%) | 16/35 (45.7%) |
| Maybe | 33/151 (21.9%) | 2/27 (7.4%) | 4/35 (11.4%) |
| Probably | 31/151 (20.5%) | 3/27 (11.1%) | 5/35 (14.3%) |
| Always | 7/151 (4.6%) | 2/27 (7.4%) | 8/35 (22.9%) |
| Scenario 2: Likelihood of prescribing antibiotics | Never | 9/151 (6%) | 0/27 (0%) | 5/35 (14.3%) | 0.141 |
| Unlikely | 39/151 (25.8%) | 12/27 (44.4%) | 14/35 (40%) |
| Maybe | 29/151 (19.2%) | 6/27 (22.2%) | 4/35 (11.4%) |
| Probably | 58/151 (38.4%) | 8/27 (29.6%) | 9/35 (25.7%) |
| Always | 16/151 (10.6%) | 1/27 (3.7%) | 3/35 (8.6%) |
| Scenario 3: Likelihood of prescribing antibiotics | Never | 21/151 (13.9%) | 3/27 (11.1%) | 6/35 (17.1%) | 0.851 |
| Unlikely | 64/151 (42.4%) | 14/27 (51.9%) | 13/35 (37.1%) |
| Maybe | 34/151 (22.5%) | 6/27 (22.2%) | 6/35 (17.1%) |
| Probably | 24/151 (15.9%) | 2/27 (7.4%) | 7/35 (20%) |
| Always | 8/151 (5.3%) | 2/27 (7.4%) | 3/35 (8.6%) |
| Scenario 4: Likelihood of prescribing antibiotics | Never | 29/151 (19.2%) | 14/27 (51.9%) | 13/35 (37.1%) | <.001 |
| Unlikely | 66/151 (43.7%) | 9/27 (33.3%) | 17/35 (48.6%) |
| Maybe | 36/151 (23.8%) | 0/27 (0%) | 3/35 (8.6%) |
| Probably | 17/151 (11.3%) | 2/27 (7.4%) | 2/35 (5.7%) |
| Always | 3/151 (2%) | 2/27 (7.4%) | 0/35 (0%) |
| Scenario 5: Likelihood of prescribing antibiotics | Never | 41/151 (27.2%) | 12/27 (44.4%) | 16/35 (45.7%) | 0.212 |
| Unlikely | 70/151 (46.4%) | 9/27 (33.3%) | 11/35 (31.4%) |
| Maybe | 24/151 (15.9%) | 3/27 (11.1%) | 2/35 (5.7%) |
| Probably | 11/151 (7.3%) | 2/27 (7.4%) | 4/35 (11.4%) |
| Always | 5/151 (3.3%) | 1/27 (3.7%) | 2/35 (5.7%) |
| Scenario 6: Likelihood of prescribing antibiotics | Never | 5/151 (3.3%) | 3/27 (11.1%) | 3/35 (8.6%) | 0.129 |
| Unlikely | 55/151 (36.4%) | 5/27 (18.5%) | 10/35 (28.6%) |
| Maybe | 32/151 (21.2%) | 7/27 (25.9%) | 4/35 (11.4%) |
| Probably | 35/151 (23.2%) | 8/27 (29.6%) | 7/35 (20%) |
| Always | 24/151 (15.9%) | 4/27 (14.8%) | 11/35 (31.4%) |
| Scenario 7: Likelihood of prescribing antibiotics | Never | 15/151 (9.9%) | 6/27 (22.2%) | 6/35 (17.1%) | 0.110 |
| Unlikely | 47/151 (31.1%) | 9/27 (33.3%) | 16/35 (45.7%) |
| Maybe | 38/151 (25.2%) | 2/27 (7.4%) | 4/35 (11.4%) |
| Probably | 32/151 (21.2%) | 7/27 (25.9%) | 4/35 (11.4%) |
| Always | 19/151 (12.6%) | 3/27 (11.1%) | 5/35 (14.3%) |
| Average likelihood of prescribing antibiotics across all 7 scenarios |  | 2.72 +/- 0.5 (1.14, 4) [151] | 2.48 +/- 0.61 (1.29, 4) [27] | 2.6 +/- 0.67 (1.14, 4.43) [35] | 0.095 |

For categorical variables, statistics reported as Frequency/Group Total (Column %) and p-values generated using Chi-Square or Fisher's Exact tests. For continuous variable, statistics reported as mean +/- standard deviation (range) [n] and p-values generated using ANOVA.

**Supplement Table 4. Comparison of likelihood of antibiotic prescribing among pre-clinical students, clinical students, and residents for each scenario and overall**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Label** | **Group** | **Student: D1, D2, AS2** | **Student: D3, D4, AS4** | **Resident (all specialties)** | **p-value** |
| Scenario 1: Likelihood of prescribing antibiotics | Never | 8/83 (9.6%) | 3/66 (4.5%) | 6/27 (22.2%) | 0.054 |
| Unlikely | 40/83 (48.2%) | 28/66 (42.4%) | 14/27 (51.9%) |
| Maybe | 17/83 (20.5%) | 15/66 (22.7%) | 2/27 (7.4%) |
| Probably | 17/83 (20.5%) | 14/66 (21.2%) | 3/27 (11.1%) |
| Always | 1/83 (1.2%) | 6/66 (9.1%) | 2/27 (7.4%) |
| Scenario 2: Likelihood of prescribing antibiotics | Never | 5/83 (6%) | 4/66 (6.1%) | 0/27 (0%) | 0.201 |
| Unlikely | 21/83 (25.3%) | 18/66 (27.3%) | 12/27 (44.4%) |
| Maybe | 21/83 (25.3%) | 8/66 (12.1%) | 6/27 (22.2%) |
| Probably | 30/83 (36.1%) | 26/66 (39.4%) | 8/27 (29.6%) |
| Always | 6/83 (7.2%) | 10/66 (15.2%) | 1/27 (3.7%) |
| Scenario 3: Likelihood of prescribing antibiotics | Never | 9/83 (10.8%) | 12/66 (18.2%) | 3/27 (11.1%) | 0.377 |
| Unlikely | 39/83 (47%) | 24/66 (36.4%) | 14/27 (51.9%) |
| Maybe | 21/83 (25.3%) | 12/66 (18.2%) | 6/27 (22.2%) |
| Probably | 12/83 (14.5%) | 12/66 (18.2%) | 2/27 (7.4%) |
| Always | 2/83 (2.4%) | 6/66 (9.1%) | 2/27 (7.4%) |
| Scenario 4: Likelihood of prescribing antibiotics | Never | 19/83 (22.9%) | 10/66 (15.2%) | 14/27 (51.9%) | <.001 |
| Unlikely | 32/83 (38.6%) | 33/66 (50%) | 9/27 (33.3%) |
| Maybe | 21/83 (25.3%) | 15/66 (22.7%) | 0/27 (0%) |
| Probably | 11/83 (13.3%) | 5/66 (7.6%) | 2/27 (7.4%) |
| Always | 0/83 (0%) | 3/66 (4.5%) | 2/27 (7.4%) |
| Scenario 5: Likelihood of prescribing antibiotics | Never | 15/83 (18.1%) | 26/66 (39.4%) | 12/27 (44.4%) | 0.001 |
| Unlikely | 35/83 (42.2%) | 34/66 (51.5%) | 9/27 (33.3%) |
| Maybe | 19/83 (22.9%) | 4/66 (6.1%) | 3/27 (11.1%) |
| Probably | 9/83 (10.8%) | 2/66 (3%) | 2/27 (7.4%) |
| Always | 5/83 (6%) | 0/66 (0%) | 1/27 (3.7%) |
| Scenario 6: Likelihood of prescribing antibiotics | Never | 5/83 (6%) | 0/66 (0%) | 3/27 (11.1%) | 0.003 |
| Unlikely | 37/83 (44.6%) | 18/66 (27.3%) | 5/27 (18.5%) |
| Maybe | 19/83 (22.9%) | 11/66 (16.7%) | 7/27 (25.9%) |
| Probably | 14/83 (16.9%) | 21/66 (31.8%) | 8/27 (29.6%) |
| Always | 8/83 (9.6%) | 16/66 (24.2%) | 4/27 (14.8%) |
| Scenario 7: Likelihood of prescribing antibiotics | Never | 13/83 (15.7%) | 2/66 (3%) | 6/27 (22.2%) | 0.047 |
| Unlikely | 26/83 (31.3%) | 21/66 (31.8%) | 9/27 (33.3%) |
| Maybe | 23/83 (27.7%) | 14/66 (21.2%) | 2/27 (7.4%) |
| Probably | 13/83 (15.7%) | 18/66 (27.3%) | 7/27 (25.9%) |
| Always | 8/83 (9.6%) | 11/66 (16.7%) | 3/27 (11.1%) |
| Average likelihood of prescribing antibiotics across all 7 scenarios |  | 2.64 +/- 0.46 (1.14, 3.71) [83] | 2.81 +/- 0.54 (1.57, 4) [66] | 2.48 +/- 0.61 (1.29, 4) [27] | 0.013 |

For categorical variables, statistics reported as Frequency/Group Total (Column %) and p-values generated using Chi-Square or Fisher's Exact tests. For continuous variable, statistics reported as mean +/- standard deviation (range) [n] and p-values generated using ANOVA.

**Supplement Table 5. Comparison of confidence in decision among students, residents, and faculty for each scenario and overall**

| **Label** | **Group** | **Student** | **Resident** | **Faculty** | **p-value** |
| --- | --- | --- | --- | --- | --- |
| Scenario 1: Confidence in decision | Not confident at all | 22/151 (14.6%) | 0/27 (0%) | 1/35 (2.9%) | <.001 |
| Slightly confident | 29/151 (19.2%) | 3/27 (11.1%) | 2/35 (5.7%) |
| Moderately confident | 48/151 (31.8%) | 3/27 (11.1%) | 5/35 (14.3%) |
| Very confident | 40/151 (26.5%) | 15/27 (55.6%) | 20/35 (57.1%) |
| Extremely confident | 12/151 (7.9%) | 6/27 (22.2%) | 7/35 (20%) |
| Scenario 2: Confidence in decision | Not confident at all | 15/151 (9.9%) | 0/27 (0%) | 0/35 (0%) | <.001 |
| Slightly confident | 22/151 (14.6%) | 2/27 (7.4%) | 2/35 (5.7%) |
| Moderately confident | 60/151 (39.7%) | 6/27 (22.2%) | 8/35 (22.9%) |
| Very confident | 40/151 (26.5%) | 14/27 (51.9%) | 17/35 (48.6%) |
| Extremely confident | 14/151 (9.3%) | 5/27 (18.5%) | 8/35 (22.9%) |
| Scenario 3: Confidence in decision | Not confident at all | 20/151 (13.2%) | 1/27 (3.7%) | 1/35 (2.9%) | 0.001 |
| Slightly confident | 31/151 (20.5%) | 2/27 (7.4%) | 1/35 (2.9%) |
| Moderately confident | 46/151 (30.5%) | 6/27 (22.2%) | 7/35 (20%) |
| Very confident | 41/151 (27.2%) | 12/27 (44.4%) | 20/35 (57.1%) |
| Extremely confident | 13/151 (8.6%) | 6/27 (22.2%) | 6/35 (17.1%) |
| Scenario 4: Confidence in decision | Not confident at all | 19/151 (12.6%) | 0/27 (0%) | 0/35 (0%) | <.001 |
| Slightly confident | 35/151 (23.2%) | 2/27 (7.4%) | 1/35 (2.9%) |
| Moderately confident | 61/151 (40.4%) | 6/27 (22.2%) | 12/35 (34.3%) |
| Very confident | 22/151 (14.6%) | 12/27 (44.4%) | 11/35 (31.4%) |
| Extremely confident | 14/151 (9.3%) | 7/27 (25.9%) | 11/35 (31.4%) |
| Scenario 5: Confidence in decision | Not confident at all | 18/151 (11.9%) | 0/27 (0%) | 0/35 (0%) | <.001 |
| Slightly confident | 30/151 (19.9%) | 2/27 (7.4%) | 0/35 (0%) |
| Moderately confident | 41/151 (27.2%) | 5/27 (18.5%) | 4/35 (11.4%) |
| Very confident | 44/151 (29.1%) | 10/27 (37%) | 18/35 (51.4%) |
| Extremely confident | 18/151 (11.9%) | 10/27 (37%) | 13/35 (37.1%) |
| Scenario 6: Confidence in decision | Not confident at all | 17/151 (11.3%) | 0/27 (0%) | 1/35 (2.9%) | <.001 |
| Slightly confident | 30/151 (19.9%) | 4/27 (14.8%) | 2/35 (5.7%) |
| Moderately confident | 47/151 (31.1%) | 4/27 (14.8%) | 6/35 (17.1%) |
| Very confident | 47/151 (31.1%) | 15/27 (55.6%) | 15/35 (42.9%) |
| Extremely confident | 10/151 (6.6%) | 4/27 (14.8%) | 11/35 (31.4%) |
| Scenario 7: Confidence in decision | Not confident at all | 22/151 (14.6%) | 1/27 (3.7%) | 2/35 (5.7%) | <.001 |
| Slightly confident | 29/151 (19.2%) | 2/27 (7.4%) | 2/35 (5.7%) |
| Moderately confident | 64/151 (42.4%) | 8/27 (29.6%) | 7/35 (20%) |
| Very confident | 23/151 (15.2%) | 11/27 (40.7%) | 16/35 (45.7%) |
| Extremely confident | 13/151 (8.6%) | 5/27 (18.5%) | 8/35 (22.9%) |
| Average confidence in decision across all 7 scenarios |  | 2.97 +/- 0.94 (1, 5) [151] | 3.81 +/- 0.72 (2, 5) [27] | 3.92 +/- 0.67 (2.14, 5) [35] | <.001 |

For categorical variables, statistics reported as Frequency/Group Total (Column %) and p-values generated using Chi-Square or Fisher's Exact tests. For continuous variable, statistics reported as mean +/- standard deviation (range) [n] and p-values generated using ANOVA.

**Supplement Table 6. Comparison of confidence in decision among pre-clinical students, clinical students, and residents for each scenario and overall**

| **Label** | **Group** | **Student: D1, D2, AS2** | **Student: D3, D4, AS4** | **Resident (all specialties)** | **p-value** |
| --- | --- | --- | --- | --- | --- |
| Scenario 1: Confidence in decision | Not confident at all | 22/83 (26.5%) | 0/66 (0%) | 0/27 (0%) | <.001 |
| Slightly confident | 18/83 (21.7%) | 11/66 (16.7%) | 3/27 (11.1%) |
| Moderately confident | 22/83 (26.5%) | 25/66 (37.9%) | 3/27 (11.1%) |
| Very confident | 15/83 (18.1%) | 25/66 (37.9%) | 15/27 (55.6%) |
| Extremely confident | 6/83 (7.2%) | 5/66 (7.6%) | 6/27 (22.2%) |
| Scenario 2: Confidence in decision | Not confident at all | 14/83 (16.9%) | 1/66 (1.5%) | 0/27 (0%) | <.001 |
| Slightly confident | 20/83 (24.1%) | 2/66 (3%) | 2/27 (7.4%) |
| Moderately confident | 25/83 (30.1%) | 33/66 (50%) | 6/27 (22.2%) |
| Very confident | 15/83 (18.1%) | 25/66 (37.9%) | 14/27 (51.9%) |
| Extremely confident | 9/83 (10.8%) | 5/66 (7.6%) | 5/27 (18.5%) |
| Scenario 3: Confidence in decision | Not confident at all | 17/83 (20.5%) | 3/66 (4.5%) | 1/27 (3.7%) | <.001 |
| Slightly confident | 23/83 (27.7%) | 8/66 (12.1%) | 2/27 (7.4%) |
| Moderately confident | 20/83 (24.1%) | 24/66 (36.4%) | 6/27 (22.2%) |
| Very confident | 17/83 (20.5%) | 24/66 (36.4%) | 12/27 (44.4%) |
| Extremely confident | 6/83 (7.2%) | 7/66 (10.6%) | 6/27 (22.2%) |
| Scenario 4: Confidence in decision | Not confident at all | 18/83 (21.7%) | 1/66 (1.5%) | 0/27 (0%) | <.001 |
| Slightly confident | 20/83 (24.1%) | 15/66 (22.7%) | 2/27 (7.4%) |
| Moderately confident | 26/83 (31.3%) | 33/66 (50%) | 6/27 (22.2%) |
| Very confident | 10/83 (12%) | 12/66 (18.2%) | 12/27 (44.4%) |
| Extremely confident | 9/83 (10.8%) | 5/66 (7.6%) | 7/27 (25.9%) |
| Scenario 5: Confidence in decision | Not confident at all | 18/83 (21.7%) | 0/66 (0%) | 0/27 (0%) | <.001 |
| Slightly confident | 20/83 (24.1%) | 10/66 (15.2%) | 2/27 (7.4%) |
| Moderately confident | 20/83 (24.1%) | 19/66 (28.8%) | 5/27 (18.5%) |
| Very confident | 14/83 (16.9%) | 30/66 (45.5%) | 10/27 (37%) |
| Extremely confident | 11/83 (13.3%) | 7/66 (10.6%) | 10/27 (37%) |
| Scenario 6: Confidence in decision | Not confident at all | 14/83 (16.9%) | 3/66 (4.5%) | 0/27 (0%) | <.001 |
| Slightly confident | 22/83 (26.5%) | 8/66 (12.1%) | 4/27 (14.8%) |
| Moderately confident | 16/83 (19.3%) | 29/66 (43.9%) | 4/27 (14.8%) |
| Very confident | 25/83 (30.1%) | 22/66 (33.3%) | 15/27 (55.6%) |
| Extremely confident | 6/83 (7.2%) | 4/66 (6.1%) | 4/27 (14.8%) |
| Scenario 7: Confidence in decision | Not confident at all | 17/83 (20.5%) | 5/66 (7.6%) | 1/27 (3.7%) | <.001 |
| Slightly confident | 24/83 (28.9%) | 5/66 (7.6%) | 2/27 (7.4%) |
| Moderately confident | 23/83 (27.7%) | 39/66 (59.1%) | 8/27 (29.6%) |
| Very confident | 7/83 (8.4%) | 16/66 (24.2%) | 11/27 (40.7%) |
| Extremely confident | 12/83 (14.5%) | 1/66 (1.5%) | 5/27 (18.5%) |
| Average confidence in decision across all 7 scenarios |  | 2.71 +/- 1.1 (1, 5) [83] | 3.3 +/- 0.58 (1.71, 4.57) [66] | 3.81 +/- 0.72 (2, 5) [27] | <.001 |

For categorical variables, statistics reported as Frequency/Group Total (Column %) and p-values generated using Chi-Square or Fisher's Exact tests. For continuous variable, statistics reported as mean +/- standard deviation (range) [n] and p-values generated using ANOVA

**Supplement Figure 5. Correlation between likelihood of prescribing antibiotics and confidence in decision: Full sample**



**Supplement Figure 6a. Correlation between likelihood of prescribing antibiotics and confidence in decision: Students only**



**Supplement Figure 6b. Correlation between likelihood of prescribing antibiotics and confidence in decision: Faculty only**



**Supplement Figure 6c. Correlation between likelihood of prescribing antibiotics and confidence in decision: Residents only**

