Supplemental Digital Appendix 1

Search Strategy for a Scoping Review of the Literature on Podcast Use for Medical Education, from Inception through July 15, 2020

PubMed was searched on June 10, 2020 with the following search string: ("Education, Medical"[Mesh] OR "Clinical Clerkship"[Mesh] OR "medical education"[tw] OR ((medicine[tw] OR medical[tw] OR physician[tw]) AND (trainee[tw] OR trainees[tw])) OR "Students, Medical"[Mesh] OR "medical students"[tw] OR residents[tw] OR interns[tw] OR residency[tw] OR residencies[tw] OR internship[tw] AND ("podcast"[Text Word] OR "podcasts"[Text Word] OR "podcasting"[Text Word]).

Embase was searched on July 15, 2020, with the following search string: ('medical education'/exp OR 'medical student'/exp OR 'resident'/exp OR 'medical education':ti,ab,kw OR ((medicine:ti,ab,kw OR medical:ti,ab,kw OR physician:ti,ab,kw) AND (trainee:ti,ab,kw OR trainees:ti,ab,kw)) OR 'medical student*':ti,ab,kw OR resident:ti,ab,kw OR residents:ti,ab,kw OR residency:ti,ab,kw OR residencies:ti,ab,kw OR intern:ti,ab,kw OR interns:ti,ab,kw OR internship:ti,ab,kw) AND ('podcast'/exp OR 'podcasting'/exp OR podcast:ti,ab,kw OR podcasts:ti,ab,kw OR podcasting:ti,ab,kw).

Supplemental Digital Appendix 2

Summary of Articles Included in Scoping Review of Podcast Use in Medical Education (n = 62)

Citation	Outcome level(s)[a]	Data summary
Berk et al. (2020)[2]	Availability & Accessibility	Internally collected survey of 10,089 subscribers to *The Curbsiders* Internal Medicine Podcast. 38% identified as internists, specialists, faculty, or post-training physicians, 23% as residents or fellows, 20% as advanced practitioners, and 15% identified as students.
Block and Lerwick (2019)[43]	Availability & Accessibility	*Abstract.* Survey of 79 internal medicine, emergency medicine (EM), surgery, anesthesia, obstetrics/gynecology, and radiology residents. 71% of residents supported the utility of podcasts.
Boothe-LaRoche et al. (2014)[54]	Availability & Accessibility, Behavior Change	Survey of 250 obstetrician-gynecologists (OB/GYNs). 12% of OB/GYNs reported using podcasts always or often for continuing medical education (CME) purposes. Providers who used podcasts always/often for CME had greater odds of counseling postpartum patients (*but not pregnant patients*) on eating fruits and veggies, avoiding sugar-sweetened beverages, high-fat/sugar consumption, and all weight-related behaviors compared to those using podcasts less often.
Bragg et al. (2013)[70]	Behavior Change	*Abstract.* Medical students were either exposed to a podcast on documentation or did not have access to the podcast. Two independent physicians scored students' notes. The podcast group had a higher average score than the non-podcast group ($P < .001$).
Brust & Yeung (2014)[65]	Availability & Accessibility, Learner Reaction	*Abstract.* 77 family medicine, 19 internal medicine, and 14 neurology residents completed a survey. 74% had listened to a podcast, and 64% had listened to a medical education podcast. The top 3 podcast production features were: the credibility of source material, the ability to navigate quickly to desired content, and production/audio quality. Most common podcast content themes varied by subspecialty.
Brust et al. (2015)[67]	Learner Reaction, Knowledge Retention, Behavior Change	*Abstract.* Randomized family medicine residents (n = 49) to lecture or podcasts on multiple sclerosis with a pretest/posttest methodology. Both groups improved significantly on the posttest, with the podcast group showing greater improvement. There were no significant differences in satisfaction between groups. 100% of the podcast group were either "very interested" or "somewhat interested" in listening to further neurology podcasts.

Citation	Outcome level(s)[a]	Data summary
Chartier & Helman (2015)[68]	Availability & Accessibility, Learner Reaction, Behavior Change	*Abstract.* The podcast *Emergency Medicine Cases* changed from pay for service to a free open access medical education (FOAM) model. Podcast downloads increased four-fold to 45,000 downloads monthly. 135 listeners were surveyed. 99% would recommend the episode to a colleague. 90% felt the podcast would change their practice and felt they would be more confident seeing a patient with the discussed condition.
Chau et al. (2012)[69]	Availability & Accessibility	*Abstract only.* Survey of pediatric anesthesia trainees. Favored learning methods were textbook (41%), discussion (19%), and lecture (18%). Only 2% of trainees preferred podcasts.
Childers et al. (2014)[13]	Availability & Accessibility, Learner Reaction	An internal medicine residency created a weekly podcast containing teaching pearls from each morning report. 70% of residents reported using the podcasts, and 23% used at least half of the podcasts. Residents who used the podcast when not able to attend morning report responded felt they learned something new. All of the faculty members reported listening to 1 or more podcasts. 94% of faculty said the podcast made them feel more connected to residents, and 56% reported the podcasts improved their learning.
Chin et al. (2016)[14]	Learner Reaction, Knowledge Retention	Survey of Canadian medical students with pretest/posttest methodology. Students were given access to an asthma and a toxicology podcast. 85% of preferred podcasts ≤ 30 minutes. Lack of time and podcast length were the top barriers to listening. Students reported listening while driving, doing chores, and exercising. Of students who listened to the podcast, test scores improved 30% (P = .002) for one topic and 13% (P = .004) for a second topic.
Chin et al. (2017)[15]	Learner Reaction, Knowledge Retention	A survey study of Canadian medical students with pretest/posttest methodology on asthma (n = 19) and toxicology (n = 14). 26 students did not listen to both podcasts due to lack of time and podcast length. Most students (85%) liked podcasts < 30 minutes and appreciated that the podcasts were conversational with clinical relevance. Students listened to podcasts while driving, doing chores, and exercising. Feedback for future podcasts included shortening them, summarizing at the end, and using visual/written supports. There were statistically significant increases in post-test means for both topics.
Clarke et al. (2020)[16]	Availability & Accessibility	A review of podcasts in radiology. 41 podcast series met the inclusion criteria, the earliest from 2005. 56% of podcasts were active, and 44% were inactive. Episodes in each podcast series ranged from 1 to 269. Most podcasts were aimed towards radiologists (88%) and came from the United States (70%). Podcast hosts were doctors (63%), other professionals (29%),

Citation	Outcome level(s)[a]	Data summary
		or unknown (7%). 27% of podcasts provided supplementary media or information.
Cosimini et al. (2017)[18]	Learner Reaction	*Letter to the editor.* 27 pediatrics residents were given access to a 20-minute podcast on phone triage. 22% felt the podcast could be shorter. Residents liked: dialogue over monologue (93%), citation of current evidence (67%), personal anecdotes (52%), and humor (37%). Residents requested summary points and the option of faster listening speed.
Cosimini & Espinoza (2017)[17]	Availability & Accessibility, Learner Reaction	*Abstract*. 21 pediatric residents were given a 20-minute podcast on telephone management of cough. 19% felt the podcast was too long, and 81% thought it was just right. Dialogue format was preferred over monologue format. Desirable podcast approaches included: citation of current evidence (71%), use of personal anecdotes (57%), examples of how to phrase questions or advice (43%), and use of humor (38%). Trainees requested summary points and the option of faster listening speed.
Coughlin et al. (2011)[19]	Availability & Accessibility	*Letter to the editor.* Survey of 100 medical students. 98% used podcasts. Students did not feel podcasts could replace teaching sessions but did feel that podcasts should augment existing teaching.
De Los Reyes et al. (2017)[20]	Knowledge Retention	*Abstract.* 36 residents were randomized to a podcast or a bulletin on OB/GYN topics. There was no significant difference in average quiz scores between the podcast and bulletin groups.
Dryden et al. (2009)[21]	Learner Reaction	*Abstract only.* Canadian medical students were given a series of podcasts on bacteriology. 89% of students used the optional podcasts and considered them a valuable adjunct to their learning. Students preferred the shorter podcasts compared to lecture recordings and appreciated the entertainment value of the podcasts.
Dubin et al. (2020)[22]	Availability & Accessibility	*Abstract only.* Survey of 372 urology trainees from 6 continents. More North American urology trainees listened to podcasts compared to trainees in South America, Europe, Asia, Africa, and Australia/New Zealand.
Duong et al. (2011)[23]	Learner Reaction	*Abstract*. 139 medical students were surveyed at the end of their EM clerkship and asked what would improve their EM oral case presentation skills. The majority (78%) felt they needed additional teaching beyond their medical school training. Students felt instructions during orientation (60%), a summary card (49%), or a podcast (19%) would be helpful with their oral case presentation skills.

Citation	Outcome level(s)[a]	Data summary
Freed et al. (2014)[24]	Availability & Accessibility, Learner Reaction	*Abstract.* Survey of 47 EM residents and 32 attendings. 84% used FOAM, including podcasts (68%), medical blogs (42%), and Twitter (14%). Respondents somewhat/strongly agreed FOAM sources are high quality (97%), easy to use (97%), time-efficient (93%), accurate (89%), valid for practice (87%), and evidence-based (77%). Respondents somewhat/strongly disagreed they are aware of all FOAM sources (81%), know how to use them efficiently (55%), and information is peer-reviewed (59%). More residents used FOAM than attendings ($P < .02$).
Friedman et al. (2017)[25]	Availability & Accessibility, Learner Reaction	*Abstract.* Survey of 195 U.S. OB/GYN residents. 51% spent 3-5 hours/week on self-directed learning activities. Residents commonly used UpToDate (66%), Google (62%), and guidelines/practice bulletins (43%). Residents reported they would be very likely to complete residency curriculum podcasts lasting 10 minutes (78%) or 20 minutes (63%). Residents would listen to podcasts while commuting (78%), doing chores (53%), or exercising (50%).
Fu et al. (2015)[26]	Behavior Change	*Abstract.* Medical students were either exposed to a podcast on differential diagnosis or did not have access to the podcast. Students were shown a videotaped patient encounter and asked to write a differential diagnosis for the case. Two blinded physicians scored students. Students who were exposed to the podcasts (n = 61) had a higher average score than those who were not exposed to the podcast (n = 65) ($P = .5$).
Gallagher et al. (2012)[27]	Availability & Accessibility	Interviews and surveys of 13 medical students in OB/GYN in New Zealand. The most popular technologies for academic use were: internet searches, wikis, textbooks, e-mail, and online journals. One student used podcasts for academic use, but no students used podcasts socially.
Grace et al. (2017)[28]	Knowledge Retention	*Abstract.* Survey of 134 EM residents. Higher years of residency training were associated with a higher in-training exam score ($P < .0001$). Listening to the podcast *EM Basic* was associated with a higher in-training exam score ($P = .0194$). Listening to the podcast *EM:RAP* was associated with a lower in-training exam score ($P = .0482$). Total hours per week listening to podcasts was not significantly associated with in-training scores.
Gutmann et al. (2014)[29]	Availability & Accessibility	Survey of 258 German medical students. The most utilized learning resources were lecture slides (27%), apps (22%), and personal notes (16%). Podcasts were rarely used (0.3%).
Henley et al. (2013)[30]	Availability & Accessibility	*Letter to the Editor.* A review of available dermatology podcasts found 6 journals with podcasts and 9 non-journal podcasts, although production of the podcasts was often

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		sporadic. The authors concluded that podcasts' infrequency and irregular production make them an unreliable mode of education, but with more reliable production, podcasts may become a utilized resource.
Herrmann et al. (2105)[31]	Availability & Accessibility	A survey study of 1018 German medical students. Preferred methods of teaching were virtual microscopy (89%), autopsy presentation (87%), seminars (79%), and podcasts (75%), with courses with mandatory attendance ranking the lowest.
Johnson et al. (2020)[32]	Learner Reaction, Behavior Change	*Abstract.* A bimonthly free podcast had 41 episodes with 55,000 unique downloads from 105 different countries. Listeners included practicing physicians (34%), residents/fellows (48%), and medical students (12%). The podcast was listened to while commuting (75%), doing chores (34%), and exercising (24%). 60% of listeners in active clinical practice changed their practice based on the podcast.
Ko et al. (2015)[33]	Availability & Accessibility, Learner Reaction	Abstract. 29 medical students rotating on EM were asked to develop a presentation utilizing FOAM resources and completed a post-rotation survey. Baseline usage was: e-mails (97%), Facebook (65%), Twitter (7%), and blogs (55%). Few students used blogs (38%) or podcasts (28%) for medical education. Students reported they were likely to use FOAM resources in the future (90%).
Kuhlmann & Simpson (2013)[34]	Availability & Accessibility	*Abstract.* 67 internal medicine residents were surveyed. 66% had downloaded an educational audiocast, lecture, or podcast. 88% felt podcasts would be a helpful supplement to the critical care medicine curriculum, and 84% would download a podcast if available. 77% said they would listen to podcast lectures before starting their critical care rotation to prepare for the month.
Lee & Rosen (2017)[35]	Availability & Accessibility	*Abstract.* Survey of 96 applicants who interviewed for an EM residency program. In formal medical school curriculum, 73% of students used online courses or simulation, 29% used podcasts, 14% used blogs, and 3% used Twitter. To supplement their education outside the classroom, students used podcasts (81%), blogs (54%), and Twitter (14%).
Levy & Braude (2011)[36]	Availability & Accessibility, Learner Reaction	*Abstract.* A free podcast was developed for preparation for the Royal College of Physicians postgraduate membership examination. Trainees completed a preexam and postexam survey (n = 268). Review materials used included: textbooks (76%), commercial courses (54%), question books (30%), online question material (30%), and vodcasts (20%). 11% planned to use the free podcasts. 26% of respondents had previously used podcasts to study. After the exam, 71% strongly agreed or agreed that the podcasts had been good,

Citation	Outcome level(s)[a]	Data summary
		useful, and novel. Trainees listened at home (68%) and while commuting (58%). On average, users listened to each podcast 3 times. 100% felt the podcasts were helpful for the exam.
Lien et al. (2018)[37]	Learner Reaction, Knowledge Retention	Study of 65 medical students with a pretest/posttest methodology. Students were randomized to either a podcast or a blog on asthma and toxicology. There were statistically significant increases in posttest means ($P < .01$) in both the podcast and blog groups on both topics. There were no significant differences between the podcast and blog groups. When separated into students who completed both topics, greater improvement was seen in the blog post group than the podcast group on the toxicology posttest ($P < .01$). Most students (60%) listened in multiple sessions that were 15-30 minutes in duration. 71% wanted the asthma podcast to be shorter compared to 39% who wanted the toxicology podcast to be shorter. Students suggested future podcasts fully explain acronyms, provide a written handout, and have multiple-choice questions.
Little et al. (2020)[5]	Availability & Accessibility	A Google-based study that looked at the number of podcasts available by specialty and characteristics of each podcast. The specialties with the most podcasts were EM (31), internal medicine (15), OB/GYN (15), pediatrics (13), and family medicine (13). Neurosurgery was the only specialty searched without any active podcasts but did have 3 inactive podcasts. The specialties with the most podcast episodes were EM (2,434), internal medicine (1,374), and family medicine (1,031).
Malecki et al. (2019)[38]	Availability & Accessibility, Learner Reaction, Behavior Change	17 interviews with listeners of *The Rounds Table* (TRT) podcast (medical students, residents, and physicians). The podcast had 160,000 downloads in 141 countries, including North America (80%), Japan (6%), Germany (3%), the United Kingdom (2%), and Australia (2%). The podcast has ~10,000 downloads per month. Four main themes emerged in interviewing listeners: (1) the podcast increases efficiency because listeners can study while doing other activities (e.g., cooking, cleaning); (2) it helps keep listeners up to date; (3) it is "edutainment," meaning listening doesn't feel like a lecture; and (4) it impacts their clinical practice, improves their knowledge, and facilitates their awareness of scientific literature.

Citation	Outcome level(s)[a]	Data summary
Mallin et al. (2014)[3]	Availability & Accessibility, Learner Reaction	Survey of 226 EM residents in 2 EM programs. 98% spent ≥ 1 hour/week on extracurricular education, including using podcasts, textbooks, and Google. 70% felt podcasts were a beneficial use of their time compared to textbooks (54%) and Google (34%). 80% choose topics based on recent clinical encounters, 31% based on the podcast/blog schedule, and 29% based on their residency didactic schedule.
Matava et al. (2013)[39]	Availability & Accessibility	Survey of 169 Canadian anesthesia residents. 60% use podcasts. 98% of those who did not use podcasts reported that they did not know podcasts were available. The podcast users reported using them for routine study (48%), to learn a new topic (38%), to prepare for exams (21%), and before a case (18%). Residents liked podcasts because they can review "whenever I want" (72%) and "wherever I want" (66%) as well as review materials at their own pace (66%) and review materials repeatedly (51%). Content requests varied by training level. Preferred podcast duration varied by content type. The inclusion of multiple-choice questions was perceived as effective for knowledge retention.
McCarthy & Porada (2020)[40]	Availability & Accessibility, Learner Reaction	*Abstract*. Pediatric and medicine-pediatric residents were given access to *Peds Soup*, a free podcast, and surveyed at 1 and 3 months after receiving the podcast. *Peds Soup* has 40 episodes has been downloaded over 80,000 times in 100 countries. 92% reported the podcast made it easier to find time to study, 97% felt it helped them learn new information, 97% thought it helped them apply knowledge clinically, and 100% would recommend it to others. Residents appreciated the level of detail, length of the episodes, and ability to listen when driving or doing other tasks.
Nwosu et al. (2017)[41]	Availability & Accessibility, Learner Reaction	The free palliative care podcast *AmiPal* had 20 episodes which were listened to 3026 times in 68 countries. The podcast was most popular in English-speaking areas, including the United States (45%), United Kingdom (22%), and Canada (7%). Feedback for the podcast included having shorter-length episodes (< 6 minutes) and music to improve the audio flow.
O'Neill et al. (2010)[42]	Knowledge Retention	*Letter to the editor.* Study of 260 Irish medical students with a pretest/posttest methodology. Students were given access to a clinical microbiology podcast. The average score before the podcast was 4.94/10 and the average score after the podcast was 6.0/10 ($P < .01$).

Citation	Outcome level(s)[a]	Data summary
Purdy et al. (2015)[44]	Availability & Accessibility, Behavior Change	An online survey was distributed to Canadian residents and program directors. Residents used wikis (95%), e-textbooks (93%), file-sharing sites (91%), and podcasts (90%) at least monthly. Textbooks (86%), subscription-based resources (65%), and podcasts/vodcasts (40%) were the top 3 resources that contributed most to a resident's education (over primary literature, e-textbooks, medical blogs, and wikis). Residents used podcasts, wikis, online file-sharing sites, and vodcasts more frequently than program directors ($P < .01$). Residents and program directors felt they read more studies in full due to using online educational resources (including podcasts).
Qian et al. (2020)[45]	Availability & Accessibility, Learner Reaction, Behavior Change	An internal medicine residency program created a podcast to disseminate learning points from teaching conferences. Residents were surveyed after years 1 and 2 of the podcast. 52%-79% of residents (n = 38-56) listened to at least 1 podcast episode. Of those who listened to at least 1 episode, 91% reported the podcast helped disseminate information from conferences, and 95% said it was useful for reinforcing conference information. 55% of listeners reported changing their practice habits due to the podcast. 43% reported further researching topics presented in the podcast.
Reid Burks et al. (2016)[46]	Learner Reaction	50 pediatric residents listened to a podcast on urinary tract infections (UTI) and completed a survey. 78% listened to the entire podcast, 14% listened to some part of the podcast. 52% listened on the phone, and 38% listened on the computer. Residents listened at home (39%), while driving (27%), in the hospital/clinic (20%), while working out (8%), and while traveling (6%). 93% enjoyed listening, and 98% found it educational. 58% felt the podcast was at the appropriate level, but 2% thought it was too basic. 14% felt the podcast was too long. 96% felt the podcast was a good alternative method for the delivery of the primary care curriculum. Residents requested future podcasts list key points and include content quizzes and handouts. 74% felt more confident identifying and managing UTI after listening.
Reynolds & Marshall (2019)[47]	Learner Reaction	*Abstract.* U.K. undergraduate medical students and rheumatology teachers were surveyed about their preferred teaching methods. Small-group tutorials, bedside teaching, and outpatient clinics were felt to be the best learning opportunities. Large group lectures, textbooks, and listening to podcasts were the lowest-rated activities.
Riddell et al. (2017)[48]	Availability & Accessibility,	Survey of 356 EM residents. 95% of respondents listen to podcasts. Residents subscribed to 2.69 podcasts on average. 91% listened to podcasts on smartphones. 78% listen at normal

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	Behavior Change	(1x) speed. 89% find podcasts by word of mouth. 39% of residents felt the ideal podcast length is 11-20 minutes compared to 35% who felt the ideal length is 21-30 minutes. 86% prefer podcasts over other educational resources. Reasons they preferred podcasts were because they are portable (67%), easy to use (66%), and can be listened to while doing something else (66%). Residents listen to podcasts to keep up with current literature (89%) and learn core EM content (70%). Residents stop listening to podcasts if the podcast is too dull, not of high quality, or too long. 72% of residents felt podcasts change their clinical practice somewhat or very much.
Riddell et al. (2020)[6]	Availability & Accessibility, Learner Reaction	Semi-structured interviews were conducted with 16 residents about podcasts. All of the residents used podcasts for learning. Residents liked podcasts because they are easy to use and entertaining. Residents also liked that they can listen while doing other things and that podcasts take less mental energy than textbooks. Podcasts were felt to be a more relaxing and engaging way to study. Podcasts were also liked because they are flexible and efficient. In addition, listeners valued that they can pause or truncate an episode. Residents felt listening to podcasts creates a sense of connection with peers and the larger community and broadens their exposure. Residents are selective about what podcasts they listen to and select them based on recent clinical experiences. Residents felt podcasts are a more passive learning process and note that their attention wanders during podcasts, their retention is "not great," and they can get distracted when listening. Residents unsubscribe to podcasts when they are not engaging.
Rodenberg & Brewer (2015)[49]	Availability & Accessibility	*Abstract only.* 118 EM residents and attendings were surveyed. 97% reported their residency program provides information about FOAM. 62% said their program gives funds to purchase tablets/computers. On a weekly basis, 81% of residents read textbooks, 88% read blogs, and 94% listen to podcasts. Attendings reported more hours reading journals than residents. 62% of all surveyed prefer to listen to podcasts instead of reading textbooks.
Rosen et al. (2011)[50]	Availability & Accessibility	Survey of 56 Canadian anesthesiology residents. 68% used medical podcasts, most commonly to introduce new topics and for routine study. 73% of podcast users were very likely to access podcasts of practice oral exams.
Roth et al. (2020)[51]	Learner Reaction, Knowledge Retention	60 residents and fellows were randomized to a podcast or written curriculum with a pretest/posttest methodology. All groups had an increase in posttest scores ($P < .05$), with podcast and written groups performing equally well. Podcasts were

Citation	Outcome level(s)[a]	Data summary
		rated higher for maintaining interest, enjoyability, entertainment, and wanting to listen to them more often in medical education. Podcasts and written curriculum were rated the same for sparking interest and satisfaction. There was no difference in self-assessed improvement in skills and knowledge between the groups.
Sandars & Schroter (2007)[52]	Availability & Accessibility	Survey of 1,239 medical students and physicians. Approximately 50% of those surveyed had never used a podcast. 60% felt podcasts had no role in professional development compared to 10% who felt podcasts could be very or extremely useful.
Shekarchi et al. (2018)[53]	Availability & Accessibility, Learner Reaction, Knowledge Retention	*Abstract*. 18 pediatric residents were surveyed. 72% of residents used podcasts for entertainment, education, or both. 67% felt graduate medical education podcasts could be helpful. Residents were separated into clinic talk or podcast groups and compared test scores. The clinic talk group (n = 9) had an average score of 25%, and the podcast group (n = 9) had an average score of 40% (*P* = .07). The podcast group listened to podcasts at home, while driving, and in downtime at work.
Sherbino et al. (2009)[55]	Availability & Accessibility	Survey of 37 EM physicians. 30% (n = 11) of respondents subscribed to an audio journal or podcast that provided original research reviews.
Tamas et al. (2013)[56]	Availability & Accessibility	*Abstract.* A review of evaluation data from meetings on the clinical management of diabetes for physicians. Preference for electronic formats such as podcasts was low.
Tarchichi & Szymusiak (2019)[57]	Availability & Accessibility, Learner Reaction	A study of a pediatric hospital medicine podcast. There was an average of 1,000–3,000 downloads per episode, with a total of 44,000 downloads in 67 countries. To ensure accuracy, discussions were based on existing literature, and articles were referenced. Dialogue and humor were used to keep listeners engaged. Listeners feel the podcast helps keep them in touch with the field.
Thurtle et al. (2016)[58]	Availability & Accessibility	Survey of 44 EM trainees in four countries (United Kingdom, Australia, Botswana, and Papua New Guinea [PNG]). 75% were aware of free podcasts for medical education. None of the PNG trainees reported using podcasts in their learning. Reasons for not listening to podcasts included: lack of regular access to the internet (1 trainee), podcasts are not easy to navigate (1 trainee), and not trusting the content (4 trainees).
Twigg et al. (2016)[59]	Availability & Accessibility	*Abstract.* A survey of 152 U.K. otolaryngologists CME participants. 12% used podcasts.

Citation	Outcome level(s)[a]	Data summary
Verma et al. (2015)[60]	Availability & Accessibility, Learner Reaction, Behavior Change	*Abstract.* Data from *The Rounds Table* podcast showed it was downloaded 4,000 times per month, with 55% of downloads in Canada and 38% in the United States. In CME feedback, 92% of listeners felt the podcast met learning objectives, and 100% felt they learned something new and that the material was of clinical importance. 61% felt their practice would be improved, and 74% were motivated to learn more.
Vogelsang et al. (2018)[61]	Availability & Accessibility	Survey of 92 medical student teachers in internal medicine, surgery, anesthesiology, gynecology, pediatrics, and psychiatry in German-speaking countries. Educators viewed podcasts as useful for teaching and learning.
Walkinshaw (2011)[62]	Availability & Accessibility	58 episodes of *Surgery 101* have been downloaded in 116 countries. The podcast uses humor and sound effects to engage listeners.
Weinstock et al. (2020)[63]	Knowledge Retention	Survey of 137 EM residents with an immediate posttest and retention posttest several weeks later. Residents were randomized to a hypertension podcast either with or without interpolated questions. There were no significant differences in immediate posttest scores, but the interpolated question group had higher retention posttest scores. In addition, for the material covered by the interpolated questions, the interpolated question group had significantly higher scores on both the immediate posttest and the retention test.
White et al. (2011)[64]	Learner Reaction	Survey of 93 medical students who had access to a general surgery podcast. 68% listened to at least 1 podcast. Of those who listened to a podcast, 84% of respondents found the podcasts helpful in learning. 81% felt the podcasts were interesting and engaging. 100% thought the length (10-15 minutes) and level of detail of the podcasts were "about right". 40% listened while traveling. 87% were interested in more podcasts on surgical topics. Comments included that the podcast was a good overview, quick and concise, got straight to the point, and a nice change from reading. Students appreciated the ability to repeat the podcasts.
Young et al. (2011)[66]	Availability & Accessibility	Focus groups about CME were held with 9 physicians in academic and community practices as well as trainees. Physicians valued the ability to quickly find information in the format that best suits their learning needs or preferences at the time. Podcasts were the preferred content format for listening while driving or exercising.

[a]Includes both descriptive outcomes as well as educational outcomes (classified using Kirkpatrick's 4 levels of evaluation of training programs).[12]

