UCLA
UCLA Previously Published Works

Title
Bolstering diagnostic reasoning skills with adaptive learning

Permalink
https://escholarship.org/uc/item/8293j9tb

Journal
Medical Teacher, 40(8)

ISSN
0142-159X

Authors
Huffman, Miranda
Gustafson, Sarah
Chatterjee, Souvik
et al.

Publication Date
2018-08-03

DOI
10.1080/0142159x.2018.1484561

Peer reviewed

1   Opportunities for mitigating bias in the process and priorities for pediatric chief resident
2   selection
3
4   Sarah Gustafson, MD, Clinical Assistant Professor of Pediatrics, David Geffen School of
5   Medicine at UCLA, Los Angeles County-Harbor UCLA Medical Center, Torrance, CA
6   Address correspondence to: Sarah Gustafson, Department of Pediatrics, Harbor-UCLA Medical
7   Center, 1000 W Carson St, Box 468, Torrance, CA 90509
8   Office phone: (424) 306-7665, Fax: (310) 328-0864
9   Email: sgustafson@mednet.ucla.edu
10
11   Patricia Poitevien, MD, MSc, Assistant Dean Office of Diversity and Multicultural Affairs,
12   Warren Alpert Medical School at Brown University, Providence, RI, Pediatric Residency
13   Program Director, Hasbro Children's Hospital
14   Address: Hasbro Children's Hospital, Brown University Pediatric Residency Program, 593 Eddy
15   Street, Providence, RI 02903
16   Office phone: (401) 444-6072
17   Email: patricia_poitevien@brown.edu
18
19   Rhonda Acholonu, MD, Assistant Professor of Pediatrics, Montefiore Medical Center/Albert
20   Einstein College of Medicine, Bronx, NY, Vice Chair for Education, Co-Director Leadership,
21   Engagement, Advocacy & Diversity Program.
22   Address: The Children's Hospital at Montefiore, 3415 Bainbridge Avenue, Bronx, NY 10467-
23   2403
24   Office phone: (718) 741-2596
25   Email: racholon@montefiore.org
26
27   Rebecca Blankenburg, MD, MPH, Clinical Professor of Pediatrics, Associate Chair of
28   Education, Lucile Packard Children's Hospital, Stanford School of Medicine, Palo Alto, CA
29   Address: Lucile Packard Children's Hospital, 725 Welch Rd, MC 5906, Palo Alto, CA 94304
30   Office phone: (650) 497-8979
31   Email: rblanke@stanford.edu
32
33   H. Barrett Fromme, MD, MHPE, Professor of Pediatrics, Associate Dean for Faculty
34   Development in Medical Education, University of Chicago Pritzker School of Medicine,
35   Chicago, IL
36   Address: University of Chicago School of Medicine, 5841 S. Maryland Avenue, MC6082,
37   Chicago, Illinois 60637
38   Office phone: 773-834-9043
39   Email: hfromme@peds.bsd.uchicago.edu
40
42
43
44   Word Count for abstract: 171   Word Count for manuscript: 2207
45
46

47   Abstract
48
49   Objective
50   To describe the current processes and priorities for pediatric CR selection, to characterize
51   pediatric CR demographics in the past five years nationally, and to identify opportunities for
52   addressing bias in the process of pediatric CR selection.
53
54   Methods
55   We used a cross-sectional study design with an anonymous national survey of pediatric program
56   directors (PDs) through a web-based platform in January 2020.
57
58   Results
59   92 of 200 (46%) of PDs responded. 16% of CR are underrepresented in medicine (UIM) by
60   race/ethnicity. The influential factors most commonly cited in selection were nominations from
61   faculty (84%) and peers (77%), followed by fit with other co-chiefs (68%). Only 17% reported
62   having a specific method to mitigate bias in CR selection, most commonly involving multiple
63   stakeholders in the process.
64
65   Conclusions
66   Current CR selection relies on processes with the potential to introduce bias. Programs have
67   opportunities to address bias in the CR selection process by reevaluating methods vulnerable to
68   bias, including peer/faculty nominations, fit with peers, ITE scores, and assessments through the
69   use of more objective selection tools.
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87

88   Abbreviations: PD (program director), APD (associate program director), CR (chief resident),
89   APPD (Association of Pediatric Program Directors), UIM (underrepresented in medicine),
90   AAMC (Association of American Medical Colleges), LOR (letter of recommendation)
91

Introduction

It is known that multiple forms of bias affect both the selection of residents and faculty[1], but little data exists on chief resident (CR) selection. There is limited information on the priorities of pediatric PDs or other stakeholders in the selection process. Strategies used to select CRs are also unknown, including whether processes or priorities in CR selection examine the potential introduction of bias.

The lack of diversity in the physician workforce is an injustice for both patients and physicians-in-training. Physician diversity is important as it has been associated with improved patient care outcomes, increased likelihood to serve the medically underserved, and enhanced educational experiences[2–4]. Despite valuing diversity, there remains a low level of underrepresented in medicine (UIM) representation at advanced levels of training or academic appointments, with only 8.6% of academic pediatric faculty identifying as UIM[5].

Chief residency can be an entrée into academic medicine due to the intense mentorship and sponsorship of chief residents. Chief residents in pediatrics are most commonly selected to serve an additional year beyond the completion of their training, in an administrative and educational leadership capacity with the training program. Due to the importance of their role, the selection process can be competitive, and the position is often a springboard for future involvement in academic medicine and medical education. Yet little is known about the demographics of CR and the processes that are used in CR selection. Understanding these processes better could lead to diversifying the CR workforce and ultimately the academic workforce.

115   In the pursuit of representation that better matches the diversity of the communities that we

116   serve, there have been efforts within medical school and residency recruitment to identify

117   potential sources of bias in the selection process. The AAMC recommends holistic review of

118   applicants as a method to remedy the systemic factors that lead to discrimination[6]. Consistent

119   evaluation methods with holistic review can help deemphasize or remove items that may

120   introduce more bias, such as Alpha Omega Alpha (AOA) status[7] or USMLE scores.

121   Standardized test scores are known to introduce bias, and it has been shown that they do not

122   predict clinical performance during residency[8]. It is unknown whether efforts to remove bias

123   have been utilized in the process of CR selection.

124

125   The aims of this study are to explore pediatric PD priorities for and process of CR selection, to

126   assess the current diversity of the pediatric CR workforce, and to identify opportunities for

127   addressing bias in the process of pediatric CR selection.

128

129   **Methods**

130   A survey was developed by the authors, including current pediatric PDs and APDs with expertise

131   and collectively over 40 years of experience in residency recruitment and leadership. It was

132   initially developed through an iterative process, utilizing prior studies and experience to inform

133   the questions. For demographics questions, PDs were asked to report demographics for chief

134   residents and residents over the last five years to provide a longer lookback period and account

135   for the possibility that any single year might not be representative of general demographics. We

136   defined underrepresented in medicine by the AAMC definition: racial and ethnic populations that

137   are underrepresented in the medical profession relative to their numbers in the general

138   population. The survey was then pilot tested with cognitive think-aloud at 3 institutions and

139   questions were refined with expert consensus of APDs and PDs. The APPD Research and

140   Scholarship Learning Community reviewed and approved the survey for dissemination to the

141   APPD listserv of pediatric program directors. The survey was built on LimeSurvey Professional[9]

142   and was distributed to 200 pediatric US PDs in January 2020 via email with 3 subsequent

143   reminder emails.

144   Additional demographic data were obtained through APPD survey administrators and were fully

145   deidentified prior to the team's review. Non-responder demographic data, including program size

146   and region, were obtained in order to compare the sample of responders to non-responders using

147   Fisher's exact tests for analysis.

148   Descriptive statistics were used to describe demographic items. Content analysis of free

149   responses was performed to identify common methods for mitigating bias in chief resident

150   selection. Data analysis was performed in MS Excel version 16.37 and R version 3.6.3.

151   Our study received an exempt determination through the University of Chicago IRB.

152

153   **Results**

154   Nearly half of all PDs responded, 92 of 200 (46.0%). Table 1 shows a comparison of those

155   residency programs in our sample with all residency programs, which we found to be similar in

156   region and program type compared to the population.

157   Based on a lookback period of five years, chief resident demographic information showed that

158   CRs are largely female and not from underrepresented groups in terms of race/ethnicity. Data

159   was not available for resident and CR representation for 3 programs and program leadership

160   representation for 4 programs. It was found that 16.2% of residents, 16.1% of CRs, and 15.5% of

161   program leadership (as defined by PDs and APDs at each program) were UIM in terms of

162   race/ethnicity (Table 2). Few CRs were identified as part of other underrepresented groups, such

163   as LGBTQIA (4.2%), transgender or nonbinary (0.1%), or with disability (0.5%). Some of the 89

164   programs who responded with their UIM representation responded "I don't know" for other

165   representation: nine with respect to LGBTQIA, eight with respect to transgender or nonbinary,

166   and six with respect disability representation.

167   Questions about the logistical considerations for the CR year revealed that recruitment season

168   mirrors resident recruitment with 83.1% of programs completing CR recruitment between

169   October and February. 90.2% of programs complete selection during the second year (or third

170   year for medicine-pediatrics residents), and 84.3% of CR years are after completion of residency

171   rather than embedded in the third year. 68.5% of CR continue in academic medicine, with

172   fellowship being the most frequent destination for graduating CRs (48.5%), while 20.0% go on

173   directly to university-based jobs.

174   For CR selection, responding programs reported that the people who were influential in CR

175   selection include PDs (98.9%), APDs (87.0%), current chiefs (66.3%), coordinators (63.0%), and

176   the chair (38.0%), with other faculty, resident, and nursing representatives less commonly having

177   influence (Table 3). Nominations from faculty (83.7%), nominations from peers (77.2%), and fit

178   with other co-chiefs (68.5%) were the most commonly cited influential factors in CR selection.

179   25.0% of PDs reported that in-service training exams (ITEs) played a role in CR selection.

180   However, Step 1 and Step 2 scores were not considered, and only one program named Step 3

181   scores as influential. When asked what word would best describe a chief resident, leader or

182   leadership (36.8%) were most common, followed by organized (11.5%).

183   Only 17.4% of PDs reported having a specific method to mitigate bias in CR selection, with the

184   most common method being involvement of multiple stakeholders in the process. Tied for

185   second most common were having an interview or a standardized process. Responses varied

186   widely, including one program with a formal bias checklist and one program citing that the PD

187   being the sole decider was their method to mitigate bias.

188

189   **Discussion**

190   This study is the first to our knowledge that identifies the diversity of pediatric CR, processes for

191   CR selection, and potential sources of bias in selection. The finding that less than 1 in 5

192   residency programs in this representative sample have a method to mitigate bias in CR selection

193   suggests that there is an opportunity to implement a more equitable and inclusive selection

194   process. There are multiple findings from our study that could be considered in the development

195   of a standardized process such as to consider exclusion of standardized testing, address the issue

196   of in-group bias, and address use of any behavioral descriptors vulnerable to bias. PDs who are

197   not already including others in the process of CR selection could consider the development of a

198   selection committee to minimize the magnitude of any individual's in-group bias.

199   The three most common influential selection factors of faculty nominations, peer nominations,

200   and "fit" with other co-chiefs expose the selection process to potential vulnerability to the issue

201   of in-group bias. Those with power to select candidates for a position may have pleasant feelings

202   when they encounter candidates who mirror their own traits, including ethnicity and gender[10],

203   and unconsciously choose candidates in ways that unfairly disadvantages UIM candidates. With

204   only 15.5% of our responding program leadership identifying as UIM, an individual's in-group

205   bias will rarely favor UIM nominees. Without a standardized rubric to identify competency-

206   based criteria for a position, leaders in the selection process may discriminate against applicants

207   who are most qualified, instead choosing what is comfortable or familiar.

208   Though the majority of residency programs reported that standardized testing was not an

209   influential factor in their selection process, 25.0% of PDs still report in-training exams (ITEs) as

210   influential. It is important to note that the first-year or second-year ITE results available at the

211   time of CR selection would not be as predictive of performance on the Pediatric Board Exams[11].

212   Given the bias introduced by including standardized testing, excluding it as a selection factor

213   entirely would be beneficial.

214   For programs who use written comments or letters of recommendation (LOR) in their selection

215   process, it would be important to evaluate for sources of bias in the text. The most common

216   words to describe the defining characteristic of a chief resident were competency-based terms:

217   "leader," "leadership," and "organized." Studies have found racial and gender bias in the use of

218   competency-based descriptors within LOR for residency[12,13]. If other assessment criteria such as

219   ITE scores are removed from the decision-making process, it is possible that LOR or written

220   assessments may become more influential in the process and therefore need to be critically

221   appraised for bias.

222   Since multiple methods of selection can be flawed, PDs may consider using a holistic review

223   process for chief resident selection, which has been successfully used in residency recruitment[14].

224   One of the programs in our study mentioned using a bias checklist, which could be incorporated

225   into a holistic review process. Other frameworks[15] that have been used for addressing bias in

226   medical school and residency recruitment may also be useful.

227   The representation of UIM residents, CRs, and residency program leadership (PDs and APDs)

228   was very similar across the three levels of training, without the decrease between residents and

229   program leadership that was previously reported by Mendoza et al[16]. The representation for UIM

230   pediatric residents matches the cross-sectional study by Montez et al, which found 16.5% to be

231   UIM in 2019[17]. This indicates that the UIM representation in pediatric PD and APDs is better

232   relative to the population of academic pediatric faculty[18], although it still falls short of being

233   representative of the general population of the United States. Based on our study, it is

234   encouraging that there is a retention of UIM residents as CR. Further study of UIM CR

235   recruitment and retention may provide valuable insight into the promising practices of these

236   programs. In addition, in our study, LGBTQIA and those with disabilities were also poorly

237   represented in CRs, indicating a need for further studies on these groups and additional reflection

238   on what sources of bias may contribute to this decreased representation. Since some programs

239   reported that they were not sure about the representation at their program, gathering data

240   consistently at a program level would be a good first step.

241   Our results suggest that CRs are important in the pipeline of academic pediatric leadership, with

242   more than half of CRs remaining in academic pediatrics after their chief year. This reaffirms the

243   necessity for addressing bias in CR selection, to do further work to implement the processes to

244   mitigate bias, and to study the selection process of CRs in other specialties.

245   Our study finds that the timing of the selection process for CR mirrors that of the residency

246   selection cycle. Given that PDs are also devoting time to prioritizing a thoughtful, holistic

247   recruitment process, it could be a consideration to move the timing of CR recruitment to before

248   or after the residency recruitment season to avoiding competing priorities.

249   Our study has several limitations. The response rate was slightly less than half, although the

250   responders and non-responders were not significantly different in terms of program type and

251   geographic location. In addition, the response rate is comparable to other APPD surveys.

252   Although we addressed validity through expert review, the survey instrument was not validated

253   through other methods, and respondents may have interpreted questions in a different manner

254   than intended. Another important limitation is that we relied on the PD's report of resident and

255   CR demographics. It is possible that PDs overestimated their UIM representation, given that the

256   representation was higher than expected. Due to selection bias, it is possible that PDs who

257   responded to the survey could be more likely to have methods of addressing bias in chief resident

258   selection. Although PDs will know their CRs well and are familiar with their initial ERAS

259   application with demographic characteristics, it is possible that they would not know some CR

260   characteristics, including sexual orientation and abilities.

261   **Conclusions**

262   The selection of chief residents relies on processes with the potential to introduce bias. Programs

263   have opportunities to address bias in the CR selection process by using holistic review, having

264   multiple diverse representatives in the process, open discussions of potential sources of bias, and

265   review for evidence of bias in prior selection. Future studies should measure the effect of

266   implementation of these bias mitigation strategies on the percentage of UIM residents selected

267   for chief residency.

268 Table 1. Demographic characteristics of pediatric residency programs.

269

Characteristic	Our sample	Population of pediatric programs	P
N (%)	92 (46.0%)	200 (100.0%)	
Program type N (%)			
University-based	43 (46.7%)	84 (42.0%)	
Community-based, university-affiliated	39 (42.4%)	89 (44.5%)	
Community-based	6 (6.5%)	16 (8.0%)	
Military	2 (2.2%)	6 (3.0%)	
Non-profit	0 (0%)	1 (0.5%)	
Hospital-based	1 (1.1%)	2 (1.0%)	
Teaching hospital	1 (1.1%)	1 (0.5%)	
			0.94
Program location N (%)			
Western	16 (17.4%)	29 (15%)	
Mid-Atlantic	15 (16.3%)	31 (16%)	
Southeast	15 (16.3%)	39 (20%)	
Midwest	14 (15.2%)	28 (14%)	
New York	12 (13.0%)	29 (15%)	
Mid-America	12 (13,0%)	24 (12%)	
New England	6 (6.5%)	9 (5%)	
Southwest	2 (2.2%)	11 (6%)	
			0.89
Program size, mean			
Total residents	50.8	45.7	
Categorical residents	47.3	42.9	

270

271 Table 2. Resident, Chief Resident and Program Leadership Diversity. The proportion of residents
272 and chief residents UIM was reported from 2016-2020. Current demographics for program
273 leadership was reported.

UIM representation	
Residents (%)	(16.2%)
Chief residents N (%)*	176 (16.1%)
Program leadership N (%)*	51 (15.5%)
Chief residents over the last 5 years N (%)	
Female	740 (69.2%)
UIM (race/ethnicity)	176 (16.1%)
LGBTQIA	45 (4.2%)
Disability	5 (0.5%)
Transgender or non-binary	1 (0.1%)

274

275

276

277 Table 3. Influential factors in CR selection.

Program report of people who have the most influence on CR selection N (%)	
PD	91 (98.9%)
APD	80 (87.0%)
Current chiefs	61 (66.3%)
Coordinators	58 (63.0%)
Chair	35 (38.0%)
Core faculty	18 (19.6%)
Other	10 (10.9%)
Resident representatives	5 (5.4%)
Nursing	1 (1.1%)
Influential factors in CR selection N (%)	
Nomination from faculty	77 (83.7%)
Nomination of peers	71 (77.2%)
Fit with other co-chiefs	63 (68.5%)
Progress in CCC/milestones	59 (64.1%)
Strength of interview for position	56 (60.9%)
Activities such as councils	56 (60.9%)
Strength of essay for position	38 (41.3%)
Life experiences	35 (38.0%)
Career goal of entering into academic medicine	27 (29.3%)
Involvement with efforts to promote recruitment	24 (26.1%)
ITE scores	23 (25%)
Step 3	1 (1.1%)
Step 1 or 2	0 (0.0%)

278

279

280

281

282

283

284

285

286

287

288   References

289   1.   Lewis D, Paulson E. AAMC Proceedings of the Diversity and Inclusion Innovation

290   Forum: Unconscious Bias in Academic Medicine. *Fac Bookshelf*. February 2017.

291   https://hsrc.himmelfarb.gwu.edu/books/132. Accessed June 10, 2020.

292   2.   Marrast LM, Zallman L, Woolhandler S, Bor DH, McCormick D. Minority physicians'

293   role in the care of underserved patients: Diversifying the physician workforce may be key

294   in addressing health disparities. *JAMA Intern Med*. 2014;174(2):289-291.

295   doi:10.1001/jamainternmed.2013.12756

296   3.   Whitla DK, Orfield G, Silen W, Teperow C, Howard C, Reede J. Educational benefits of

297   diversity in medical school: A survey of students. In: *Academic Medicine*. Vol 78. Hanley

298   and Belfus Inc.; 2003:460-466. doi:10.1097/00001888-200305000-00007

299   4.   Price EG, Gozu A, Kern DE, et al. The role of cultural diversity climate in recruitment,

300   promotion, and retention of faculty in academic medicine. *J Gen Intern Med*.

301   2005;20(7):565-571. doi:10.1111/j.1525-1497.2005.0127.x

302   5.   Association of American Medical Colleges. *Association of American Medical Colleges:*

303   *U.S. Medical School Faculty by Rank and Race/Ethnicity*.

304   https://www.aamc.org/download/475546/data/16table3.pdf. Accessed April 21, 2019.

305   6.   Association of American Medical Colleges. Holistic Review | AAMC.

306   https://www.aamc.org/services/member-capacity-building/holistic-review. Accessed

307   September 19, 2021.

308   7.   Boatright D, Ross D, O'Connor P, Moore E, Nunez-Smith M. Racial disparities in

309   medical student membership in the alpha omega alpha honor society. *JAMA Intern Med*.

310   2017;177(5):659-665. doi:10.1001/jamainternmed.2016.9623

311   8.   Burkhardt JC, Parekh KP, Gallahue FE, et al. A Critical Disconnect: Residency Selection

312   Factors Lack Correlation With Intern Performance. *J Grad Med Educ*. 2020;12(6):696-

313   704. doi:10.4300/JGME-D-20-00013.1

314   9.   Limesurvey GmbH. LimeSurvey: An Open Source survey tool. *LimeSurvey GmbH*.

315   http://www.limesurvey.org. Accessed October 10, 2020.

316   10.   Shellenbarger S. The Dangers of Hiring for Cultural Fit. *Wall Street Journal*.

317   https://www.wsj.com/articles/the-dangers-of-hiring-for-cultural-fit-11569231000.

318   Published September 23, 2019. Accessed July 24, 2020.

319   11.   Althouse LA, McGuinness GA. The In-Training Examination: An Analysis of Its

320   Predictive Value on Performance on the General Pediatrics Certification Examination. *J*

321   *Pediatr*. 2008;153(3):425-428. doi:10.1016/j.jpeds.2008.03.012

322   12.   Powers A, Gerull KM, Rothman R, Klein SA, Wright RW, Dy CJ. Race- and Gender-

323   Based Differences in Descriptions of Applicants in the Letters of Recommendation for

324   Orthopaedic Surgery Residency. *JBJS Open Access*. 2020;5(3):e20.00023-e20.00023.

325   doi:10.2106/jbjs.oa.20.00023

326   13.   Grimm LJ, Redmond RA, Campbell JC, Rosette AS. Gender and Racial Bias in Radiology

327   Residency Letters of Recommendation. *J Am Coll Radiol*. 2020;17(1):64-71.

328   doi:10.1016/j.jacr.2019.08.008

329   14.   NE B, S S, CR W, et al. Reimagining Merit and Representation: Promoting Equity and

330   Reducing Bias in GME Through Holistic Review. *Acad Psychiatry*. 2021;45(1):34-42.

331   doi:10.1007/S40596-020-01327-5

332   15.   Capers Q, McDougle L, Clinchot DM. Strategies for achieving diversity through medical

333   school admissions. *J Health Care Poor Underserved*. 2018;29(1):9-18.

334   doi:10.1353/hpu.2018.0002

335 16. Mendoza FS, Walker LR, Stoll BJ, et al. Diversity and inclusion training in pediatric

336   departments. *Pediatrics*. 2015;135(4):707-713. doi:10.1542/peds.2014-1653

337 17. K M, EA O, K M-T, et al. Trends in Race/Ethnicity of Pediatric Residents and Fellows:

338   2007-2019. *Pediatrics*. 2021;148(1). doi:10.1542/PEDS.2020-026666

339 18. Association of American Medical Colleges. *US Medical School Faculty Be Sex,*

340   *Race/Ethnicity, Rank, and Department, 2018*.; 2020.

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356   Supplemental File (Survey)

357   Dear APPD community,
358
359   We are conducting a research study to understand the process and priorities for chief
360   resident selection in Pediatrics. We know that chief residents can play a large role in residency
361   programs and would like to understand better how they are selected. The survey has been
362   approved by the University of Chicago IRB and the APPD Research and Scholarship Learning
363   Community and will take approximately 5-8 minutes. We have a few questions that will request
364   demographic information about your program and chiefs. Please ask your program coordinators
365   for help to verify information if needed.
366
367   Thank you,
368   Sarah Gustafson, Barrett Fromme, Rhonda Acholonu, Patricia Poitevien, and Becky
369   Blankenburg
370
371   Your participation is completely voluntary, and you will not receive any direct benefit from the
372   study, though the knowledge obtained could positively impact your program's practice in the
373   future. By completing the survey, you are consenting to participate, and you can stop
374   participating at any time by stopping the survey. All responses will be anonymous.
375
376   1. How many chief residents do you have each year? (Choose one of the following answers)
377   a. 1
378   b. 2
379   c. 3
380   d. 4
381   e. 5
382   2. Is your chief position embedded in the 3rd year, or is it an additional year? (Choose one of
383   the following answers)
384   a. Embedded in the 3rd year

385   b. Additional year

386   3. Is your chief resident ever recruited from another institution? (Choose one of the
387   following answers)
388   a. Yes
389   b. No
390   4. How are chief residents paid? (Choose one of the following answers)
391   a. Full junior faculty salary
392   b. More than PGY-4 salary, but less than a full junior faculty salary
393   c. PGY-4
394   d. PGY-3
395   e. Other:
396   5. In their first position post-chief residency, please estimate the PERCENT of chief
397   residents over the last 5 years have gone on to: (Only numbers may be entered in these
398   fields. The sum must equal 100.)
399   a. university-based job (%)

400   b. community-based practice (%)
401   c. fellowship (%)
402   d. other (%)

403   6. Use one word to describe the defining characteristic for a chief resident. [free response]

404   7. Briefly explain how you assess the defining characteristic of a chief resident. [free
405   response]

406   8. What time of year do you recruit and select chief residents? (Choose one of the following
407   answers)
408   a. July through September
409   b. October through December
410   c. December through February
411   d. March through June

412   9. In which year of residency do you recruit and select chief residents? (Choose one of the
413   following answers)
414   a. During intern year (or second year for Med-Peds)
415   b. During second year (or third year for Med-Peds)
416   c. During third year (or for fourth year for Med-Peds)

417 10. What factors are influential in evaluating and selecting candidates for chief residency?
418   (check all that apply)
419   a. Nominations from peers (interns and other residents)

420   b. Nominations from faculty members

421   c. Step 1 or Step 2 USMLE board scores

422   d. Step 3 scores

423   e. ITE scores

424   f. Participation in extracurricular activities during residency, such as councils

425   g. Progress in milestones or CCC discussions

426   h. Involvement with efforts to promote recruitment and retention of
427   underrepresented groups

428   i. Life experiences and background, including identification of the resident as a
429   protected group

430   j. Strength of interview for chief residency position

431   k. Strength of application essay for chief residency position

432   l. Candidate career goal of entering into academic medicine

433   m. Fit with the other co-chiefs selected

434   n. Other: [free response]

435   11. Of the factors you have selected [in question 10], please list the top three most influential
436   factors in evaluating and selecting candidates for chief residency in order of importance.
437   (ranking)
438   12. Who is involved in the final decision about which resident(s) will be offered the chief
439   resident position? (Check all that apply)
440   a. PD

441   b. APDs

442   c. Coordinators

443   d. Current Chiefs

444   e. Resident representatives

445   f. Core faculty

446   g. Chair

447   h. Nursing

448   i. Other: [free response]

449   13. Do you have specific methods or approaches you use to mitigate bias in chief resident
450   selection? (Choose one of the following answers)
451   a. Yes

452   b. No

453   14. If you do have methods to mitigate bias in chief resident selection, what are the specific
454   methods? [free response]
455   15. Over the last 5 years, what NUMBER of chief residents have identified as
456   female? (Choose one of the following answers) [drop-down]
457   a. 0

458   b. 1

459   c. 2

460   d. 3

461   e. 4

462   f. 5

463   g. 6

464   h. 7

465   i. 8

466	j.	9
467	k.	10
468	l.	11
469	m.	12
470	n.	13
471	o.	14
472	p.	15
473	q.	16
474	r.	I don't know

475 16. Over the last 5 years, what NUMBER of chief residents have identified as
476 underrepresented in medicine (by the AAMC definition*)? *Underrepresented in
477 Medicine by AAMC definition: Underrepresented in medicine means those racial and
478 ethnic populations that are underrepresented in the medical profession relative to their
479 numbers in the general population. (Choose one of the following answers)

480	a.	0
481	b.	1
482	c.	2
483	d.	3
484	e.	4
485	f.	5
486	g.	6
487	h.	7
488	i.	8
489	j.	9
490	k.	10
491	l.	11
492	m.	12
493	n.	13
494	o.	14
495	p.	15
496	q.	16
497	r.	I don't know

498   17. Over the past 5 years, what NUMBER of chief residents have identified as LGBTQIA?
499   (Choose one of the following answers)

500   a. 0

501   b. 1

502   c. 2

503   d. 3

504   e. 4

505   f. 5

506   g. 6

507   h. 7

508   i. 8

509   j. 9

510   k. 10

511   l. 11

512   m. 12

513   n. 13

514   o. 14

515   p. 15

516   q. 16

517   r. I don't know
518   18. Over the last 5 years, what NUMBER of chief residents have identified as third gender or
519   non-binary? (Choose one of the following answers)

520   a. 0

521   b. 1

522   c. 2

523   d. 3

524   e. 4

525   f. 5

526   g. 6

527   h. 7

528   i. 8

529   j. 9

530   k. 10

531   l. 11

532   m. 12

533   n. 13

534   o. 14

535   p. 15

536   q. 16

537   r. I don't know
538 19. Over the last 5 years, what NUMBER of chief residents were first generation in their
539   family to attend college? (Choose one of the following answers)

540   a. 0

541   b. 1

542   c. 2

543   d. 3

544   e. 4

545   f. 5

546   g. 6

547   h. 7

548   i. 8

549   j. 9

550   k. 10

551   l. 11

552   m. 12

553   n. 13

554   o. 14

555   p. 15

556   q. 16

557   r. I don't know
558 20. Over the last 5 years, what NUMBER of chief residents were disabled? (Choose one of
559   the following answers)

560   a. 0

561   b. 1

562   c. 2

563   d. 3

564   e. 4

565   f. 5

566   g. 6

567   h. 7

568   i. 8

569   j. 9

570   k. 10

571   l. 11

572   m. 12

573   n. 13

574   o. 14

575   p. 15

576   q. 16

577   r. I don't know

578 21. How many total residents per year are in your categorical pediatric and categorical
579   medicine-pediatrics (if applicable) residency programs at your institution? (Only numbers
580   may be entered in this field.)

581 22. What PERCENT of residents in your program identify as underrepresented in medicine*?
582   (Only numbers may be entered in this field.)
583 23. How many leadership members are there in your program? (include only PD and APDs)
584   (Only numbers may be entered in this field.)
585 24. How many in this group of program leadership identify as underrepresented in
586   medicine*? (Only numbers may be entered in this field.)
587