Most medical students and residents have some interaction with the pharmaceutical industry. It is not known if this interaction has changed over time. We determined whether interactions between family medicine residencies and the pharmaceutical industry have changed in the past 5 years.

METHODS: We surveyed program directors of US family medicine residencies with questions addressing industry-sponsored gifts, drug samples, access of industry representatives to trainees, and industry-sponsored residency activities. The questions were part of a larger 2013 survey administered by the Council of Academic Family Medicine Educational Research Alliance (CERA). The authors compared results from 2008 and 2013.

RESULTS: The response rate to the 2013 CERA program director survey was 56% (251/445); 47% (208/445) of surveyed directors viewed and answered all survey questions. Between 2008 and 2013, residency programs that accept no gifts or industry-sponsored food increased from 48% (137/286) to 73% (151/208). Residencies refusing samples increased from 52% (148/286) to 78% (166/212), and residencies that do not allow industry representatives to have access to learners increased from 43% (124/286) to 74% (157/212). Residency programs that forbade industry-sponsored activities remained stable (67% versus 73%). About half (49%) (101/208) of programs in 2013 qualified as “pharma-free,” compared to 26% (75/286) in 2008.

CONCLUSIONS: In 2013, one of two family medicine residencies disallow gifts, drug samples, interactions between residents and pharmaceutical sales representatives, and pharmaceutical industry-sponsored activities. This proportion is twice what was observed in 2008. Restrictions increased in all categories except industry-sponsored activities.

From the Banner Good Samaritan Family Medicine Residency and Department of Family and Community Medicine, University of Arizona-Phoenix (Dr Brown); Department of Family Medicine, University of Washington (Dr Evans); and Department of Pharmacology and Physiology and Department of Family Medicine, Georgetown University Medical Center, Washington, DC (Dr Fugh-Berman).
the pharmaceutical industry may be changing. In 2008, we surveyed US family medicine residencies and found that 74% allowed some interaction with the industry (interactions included gifts, food, samples, visits from pharmaceutical representatives, and industry-sponsored residency activities). Qualitative findings suggested that many residency programs expected change in subsequent years. In 2013, we surveyed family medicine residencies again to determine whether industry interactions had changed.

**Methods**

We surveyed program directors at all Accreditation Council for Graduate Medical Education (ACGME)-accredited family medicine residencies in August and September 2013. The questions were rolled into a larger omnibus survey conducted by the Council of Academic Family Medicine Educational Research Alliance (CERA). Pretesting of the survey was done on family medicine educators who were not part of the target population to assure question clarity. The Institutional Review Board of the American Academy of Family Physicians approved the project. The sampling frame for the survey was all US family medicine residency program directors as identified by the Association of Family Medicine Residency Directors (AFMRD). Email invitations to participate were delivered with the survey utilizing the online program Survey Monkey. Two reminder emails were sent to nonrespondents after the initial email invitation.

The CERA survey included five questions that are the subject of our analysis: (1) Does your medical school/residency have any interaction with pharmaceutical companies? (2) Does your residency allow gifts from industry or industry-supported food? (3) Are drug samples accepted at the residency? (4) Are industry representatives allowed access to medical students and/or residents at the family medicine center? (5) Are any industry-sponsored residency activities allowed? Question 1 was new; questions 2–5 were the exact same questions we asked previously for a prior publication.

US family medicine residencies are categorized by program type: university based, community based university affiliated, community based nonaffiliated, and military. In this survey, programs self-reported their program type.

All statistical analyses were performed using Fisher’s exact test to determine significant differences in proportions or program type between 2008 and 2013. As described in our original 2008 study, we designated family medicine residencies that answered “No” to questions 2 through 5 as “pharma-free;” these programs allowed no industry gifts, food, samples, interaction with students or residents, or sponsorship of residency activities.

**Results**

The response rate to the 2013 CERA program director survey was 56% (251/445), similar to the 62% (286/460) of programs that responded to our freestanding 2008 survey. In the 2013 CERA survey, six respondents did not complete the section of the questionnaire that contained our questions. Due to a programming error in skip logic that affected early responses, some early respondents never viewed questions 2–5, so 245 respondents answered question 1 (“Does your medical school/residency have any interaction with pharmaceutical companies?”) but, between 208 and 212 respondents viewed and answered questions 2–5. In other words, 98% of respondents began our survey section, but due to the programming error, 83% of respondents (47% [208/445] of the entire sample) answered all questions.

In 2013, 62% (152/245) of responding programs responded “no” to the question: “Does your medical school/residency have any interaction with pharmaceutical companies?” This question was not asked in 2008. See Figure 1 comparing the answers between 2008 and 2013 in regard to gifts, samples, exposure to representatives, and industry-sponsored residency activities. Forty-nine percent (101/208) of programs responding to all four questions in 2013 were pharma-free, compared to 26% (75/286) in 2008 ($P < .001$).

University-based programs were no more likely to meet the pharma-free criteria than other programs. Fifty-one percent (18/35) of responding university-based programs were pharma-free compared to 49% (67/137) of community-based, university-affiliated programs, and 45% (13/29) of community-based, nonaffiliated programs; differences among groups were not significant. Forty-three percent (3/7) of the responding military programs met pharma-free criteria.

**Discussion**

Interactions between family medicine residencies and the pharmaceutical industry have decreased dramatically in recent years. In 1992, only 10% of family medicine residencies had no interaction with industry. This percentage increased to 26% in 2008 and 49% in 2013. Half of family medicine residencies now have no interaction with the pharmaceutical industry. If our sample is representative of all 445 family medicine residencies, this means approximately 100 family medicine residencies have ended pharmaceutical interaction in the past 5 years.

Community residency programs are just as likely to limit interactions as family medicine residencies at university centers, a consistent finding in both 2008 and 2013. This finding is particularly relevant because 88% of family medicine residencies are located in a community setting, not at a university.

Family medicine residencies have less interaction than residencies in other specialties. Recent surveys show 56% of internal medicine residencies accept “some kind of support” from industry, more than half of surgical residencies report industry support for academic events, and...
87% of ophthalmology residencies report visits from industry representatives. Our findings match a pattern in the literature that shows industry interaction with physicians is decreasing. A 2009 survey showed that the percentage of physicians with any relationship with industry decreased from 94% in 2004 to 84% in 2009. Additionally, the number of physicians that receive drug samples decreased from 78% to 64%, and the number of physicians receiving any gifts, including food, decreased from 83% to 71%. However, a 2011 survey of medical students and residents in diverse specialties found that industry interactions are still common; half (49%) of residents had met with pharmaceutical representatives, and 36% had attended industry-sponsored lectures.

Programs are limiting industry interactions at an accelerating pace. The reasons for this are likely multifactorial. Interactions between medical schools and pharmaceutical companies have been under scrutiny, and more than two thirds (70%) of medical schools now earn an “A” or “B” grade on the American Medical Student Association scorecard for their interaction policies. However, in 2013, only four medical schools banned pharmaceutical representatives from campus.

While there is substantial evidence that interaction with the pharmaceutical industry leads to non-rational prescribing, and many view these interactions as negative, there are some that argue that interaction with industry in a teaching context can be beneficial. Qualitative data from our 2008 survey indicate that some program directors feel residents benefit from industry interaction to learn this skill for practice, and some curricula are built around this concept.

Our study has several limitations. While the same survey questions were asked in both the initial and follow-up study, the 2008 study was a stand-alone study, while the 2013 survey was folded into the CERA program director survey. Although the response rates to both surveys were robust, 43 programs never viewed questions 2–5, and it is unknown what their answers may have been. However, the fact that 62% (152/245) of responding programs responded “no” to the question “Does your medical school/residency have any interaction with pharmaceutical companies?” implies that the missing answers to the remaining questions may have qualified more programs as pharma-free, so our results may have been even more dramatic had those responses been completed and analyzed.

It is also possible that the responding programs were not representative of all programs. While it is possible that those who responded to the 2008 stand-alone survey viewed industry interactions more negatively, the CERA omnibus survey covered five different topics ranging from hospitalist trends to maternity care, so there is little reason to
suspect that only those concerned about industry interactions would complete this survey. In this way, the 2013 survey is likely more representative of family medicine residencies as a whole. Additionally, the difference between the 2008 and 2013 sample could explain the decrease in interaction seen. However, even with a lower response rate in 2013, the absolute number of programs reporting less interaction is increased. This makes a non-representative sample less likely to explain the difference.

Our questions addressed the daily learning environment of residents but did not cover many influences (for example, direct payments to faculty physicians, sponsored research, or involvement in ghost-written articles) that could expose learners to industry bias and thus be relevant to a training program. Program directors may also not be aware of resident interaction in other learning sites, such as a rotation with a community provider. We did not ask about institutional policies and did not compare policies of medical schools and academic medical centers to community programs. We also did not survey pharmaceutical industry support for research in academic medical centers and this influence as a possible conflict of interest. These questions are possible areas for further research.

In summary, an increasing number of family medicine residencies restrict interaction with industry. Despite mounting evidence that pharmaceutical interaction is harmful to rational prescribing, about half of family medicine residencies still allow some interaction in the form or gifts, samples, meetings with representatives, or industry-sponsored activities.

ACKNOWLEDGMENTS: This paper was a poster presentation at the 2014 Scholarly Teaching Symposium, University of Arizona-Phoenix.

The authors thank Rachel Trippett, MD, Jay Siwek, MD, Alicia M. Bell, MS; Paige Clark, MD; and Anthony Fleg, MD for designing and implementing the original survey, Richard Gerkin, MD, and Cara Olsen for statistical assistance, and CERA advisor Mark Stephens, MD.

CORRESPONDING AUTHOR: Address correspondence to Dr Brown, University of Arizona-Phoenix, Department of Family and Community Medicine, 1300 N. 12th Street, Suite 605, Phoenix, AZ 85006. 602-839-2868; steven.brown@bannerhealth.com.

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