Dr Love questions our categorization of RTP as affiliated with a parent company; this information came from several sources. The Lilly Grant Registry lists the "requestor" for 10 of its grants as "NL Communications, Inc. DBA Research to Practice-Research to Practice."[2]

When we Googled RTP's website, we found links to NL Communications. NL Communications sponsors RTP's 401k plan.[3] Its website, http://www.breastcancerupdate.com, links to the RTP website. The 2 companies also share the same address and suite.

Our analysis did not distinguish between individual and aggregate data sharing. Research to Practice declares that it only shares aggregate data with third parties. It will inform a sponsor of "what percentage of our registered users resides in a particular geographical area or their practice specialty."[4] However, RTP uses personal information to "target our advertising or marketing activities based on information we have about users."[4]

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Conflict of Interest Disclosures: The author has completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Rothman reported having served as a consultant to the Office of the Attorney General of the State of Texas in litigation against Johnson & Johnson related to risperidone and receiving travel support from the North American Spine Society to attend the society's board and ethics committee meetings.

1. Accreditation Council for Continuing Medical Education. Joint providership. http://www.accme.org/requirements/accreditation-requirements-cme-providers/policies-and-definitions/joint-sponsorship. Accessed February 4, 2014.

2. Lilly Grant Office. Registry report. www.lillygrantoffice.com/_assets/pdf/q4_10_registry_report.pdf. Accessed February 4, 2014.

3. Find The Best. Research to Practice 401k savings plan. http://401k-plans.findthebest.com/l/661662/Research-to-Practice-401k-Savings-Plan. Accessed February 4, 2014.

4. Institute on Medicine as a Profession. The WebMD health professional network privacy policy. http://imapny.org/File%20Library/JAMA/privacy_policies.pdf. Accessed November 21, 2013.

Strategies to Overcome Medication Nonadherence

To the Editor The suggestions by Dr Zullig and colleagues[1] for improving medication adherence are laudable, but we believe their list of barriers to nonadherence overlooks 2 fundamental features of human behavior, inattention and inertia, while overemphasizing the need for engagement.

Human attention is both scarce and fragile, with most behaviors occurring automatically rather than being deliberate and overt.[2-4] Humans devote their attention to that which is either pleasing or pressing; thus, things that do not immediately demand attention may not receive it. Because many behaviors are important over the long-term but not immediately pressing, inattention often leads to inertia, which creates a gap between good intentions (more exercise, better diet, taking medications as prescribed) and action.

The realization that inattention and inertia are fundamental forces has 2 important implications for managing medication adherence. First, expectations about the effects of educational and financial interventions should be realistic. When nonadherence is the result of a gap between intentions and behaviors, providing more information and reducing costs may have only modest effects; patients already intend to do the right thing.

Second, much nonadherence may be the result of forgetting and procrastinating when it comes to taking medications and refilling or renewing prescriptions. For patients with these problems, reminders (eg, pill bottle timers), automatic scheduling and delivering of refills, and prescription renewal assistance can be especially effective. Devices that eliminate the problem of forgetting can be especially effective as seen in the case of long-acting reversible contraception methods.[5]

Nonadherence is a multifaceted challenge with no clear-cut solution. For some patients, the barriers to adherence are those implied by Zullig et al[1]: lack of clear information, inability to afford medications, and the like. For others, the barriers to adherence are behavioral (ie, they spring from inattention and inertia). In practice, systems and approaches are needed that identify which patients are likely to have problems staying adherent to medication, that quickly and accurately diagnose the barrier at the individual patient level, and then tailor the intervention to the needs of the patient.

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1. Zullig LL, Peterson ED, Bosworth HB. Ingredients of successful interventions to improve medication adherence. *JAMA*. 2013;310(24):2611-2612.

2. Duhigg C. *The Power of Habit: Why We Do What We Do in Life and Business.* New York, NY: Random House; 2012.

3. Kahneman D. *Thinking, Fast and Slow.* New York, NY: Farrar, Straus and Giroux; 2011.

4. Simon HA. Rational choice and the structure of the environment. *Psychol Rev*. 1956;63(2):129-138.

5. Winner B, Peipert JF, Zhao Q, et al. Effectiveness of long-acting reversible contraception. *N Engl J Med*. 2012;366(21):1998-2007.

In Reply As stated in our Viewpoint, the problem of medication nonadherence is often multifactorial, and there is no universal formula that will resolve adherence issues for every patient in every situation. The key is to identify characteristics and situations making patients vulnerable for medication nonadherence and subsequently provide a personalized program to address specific needs in the mode and time that will be most effective to motivate adherence.

We fully agree with Dr Frazee and colleagues that providing enabling strategies to patients so that they can better take ownership of their health, specifically by taking their medications as prescribed, is important to establishing long-term

healthy adherence behaviors. Our Viewpoint identified ingredients of interventions that have successfully improved medication adherence (eg, increasing patient knowledge, providing counseling and accountability, enabling patient self-monitoring, and decreasing cost, among others). Although these strategies can be effective in motivating medication adherence, they will not prove unanimously successful. We also acknowledge that other methods (eg, renewal reminders, automated renewals, etc) suggested by Frazee and colleagues could also facilitate improved adherence.

We agree that inertia is a reality. A patient's behaviors, readiness to change, and ability and interest to sustain proper medication adherence practices are not static. Therefore, strategies and approaches must not only adapt to meet an individual patient's changing needs but also evolve. We assert that the barriers listed in our Viewpoint complement those laid out by Frazee and colleagues. We fully agree with their assertion that humans devote their attention to items that are either pleasurable or urgent and those that do not demand immediate attention may not receive it. It is precisely for this reason that successful medication adherence interventions must engage patients. In other words, interventions must grab the attention of patients and become more pressing than the other issues competing for their attention. To help patients fill the gap between good intentions and action, participation by patients in the unnatural act of engaging in their health and health care must be facilitated.

We recognize that no lone intervention will effectively capture the attention of patients indefinitely. However, incorporating a constellation of approaches and adapting these approaches to meet patients' ever-changing barriers to medication adherence can be effective. A multifaceted intervention may overcome inattention in part because it presents patients with several components (eg, educational information, prescription refill assistance, and telephone-based counseling). One element of a multifaceted intervention (eg, telephone-based counseling) may be the critical factor for a specific patient, yet be futile for another.

Similarly, the effective strategy to improve medication adherence may change within the same patient over time. That humans tend toward inattention and that there is no clear-cut solution to promote medication adherence should not be used as rationales mitigating the importance of patient engagement. On the contrary, those are the very reasons that patient engagement is fundamental.

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CORRECTION

Incorrect Language: In the Editorial entitled "Medical Communication Companies and Continuing Medical Education: Clouding the Sunshine?" published in the December 18, 2013, issue of *JAMA* (2013;310[23]2507-2508. doi:10.1001/JAMA.2013.281640), there was incorrect language. In the fifth paragraph from the end, the sentence that begins "Nevertheless" should have read "Nevertheless, close to half of medical school CME revenue in 2012 was commercial, ranging from 50%, if advertising and exhibits are counted as commercial revenue, to 41% if only 'total commercial' revenue is counted." This article was corrected online.

Incorrect Author Affiliation: In the Original Investigation entitled "Age-Adjusted D-Dimer Cutoff Levels to Rule Out Pulmonary Embolism: The ADJUST-PE Study" published in the March 19, 2014, issue of *JAMA* (2014;311[11]:1117-1124. doi:10.1001/jama.2014.2135), an author's institutional information was incorrect. Dr Le Gal is affiliated with Ottawa Health Research Institute, Ottawa, Ontario, Canada and Centre d'Investigations Cliniques, Université de Brest, Brest, France. This article was corrected online.

Guidelines for Letters

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