Chronic Alert Fatigue Syndrome: An In-Your-Face Dilemma

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INTRODUCTION

Clinicians suffering from chronic alert fatigue syndrome (CAFS) are coming out of the closet these days—in droves. Perhaps you are one of them, or maybe you consider yourself vulnerable to acquiring the syndrome. This article briefly describes the prevalence and epidemiology of CAFS, reviews the diagnostic criteria that must be satisfied in order to hang the label on a given individual, and proposes ways of combating this modern-day medical scourge.

First, allow me to provide the requisite background paragraph, establishing this as an important topic, worthy of your attention: CAFS is an insidious disorder, characterized by mental exhaustion and exasperation secondary to frequent, involuntary exposure to displays of alerts and reminders in computerized clinical information systems. The subject matter of said alerts can address everything from possible drug–drug interactions to drug contraindications to information regarding authorization requirements, formulary changes, and costs.

SCOPE OF THE PROBLEM

CAFS is present, to some extent, in approximately 73.6% of computer-using adults who are working in health care institutions worldwide and who are simultaneously exposed to alerts (anecdotal communication). The available evidence suggests that etiologic factors setting the stage for the development of CAFS include commercial “pop-ups” that appear regularly on the information superhighway and software programs that feature unsolicited “tips of the day,” especially from the infamous “office assistant” (also known as “The Paper Clip” on personal computers [PCs]).

CAFS comes on stealthily, resulting from the intermittent interruption of the clinical workflow, manifested by flashing messages and reminders. The severity of the syndrome is directly proportional to the number of alerts being displayed and the irrelevance of the alerts, as perceived by the victims.

DIAGNOSIS

Now, to be eligible for a diagnosis of CAFS, one must have had at least three distasteful encounters with alerts or reminders in an electronic medical record system over a period of 24 hours, recurring at least three times per week over an interval of one month, such as the following:

- **a duplicate drug therapy warning**
  - Example: You are an in-hospital pharmacist. A physician has just ordered milk of magnesia (MOM) suspension for a constipated patient who is already receiving oral docusate sodium (Colace®, Purdue Pharma) capsules; the database system sends you a warning indicating that MOM and Colace® are from the same class, “laxatives,” a one-two punch that the physician intended to order.

- **a reminder to counsel a patient about smoking cessation**
  - Example: You are a nurse. You have already documented that you counseled the patient about quitting smoking, but the system can’t see your note, which is still on paper. As a result, the system keeps prompting you to address smoking cessation with your patient.

- **an alert to be cautious about using vancomycin therapy**
  - Example: You are an infectious-disease specialist. You need to order vancomycin frequently for your seriously ill patients with infections caused by beta-lactam–resistant, gram-positive organisms. Each time you place an order for vancomycin, an educational warning is displayed about the fact that vancomycin use is a risk factor for infection and colonization with vancomycin-resistant enterococcus (VRE). You are asked to document your reason for ordering this product.

To be given the diagnosis of CAFS, one also must have experienced a certain constellation of symptoms, satisfying three major criteria or two major plus two (or more) minor criteria, as follows:

- **major criteria**
  - **fatigue**

*Editor’s Note: In the field of medical publishing, we don’t have many opportunities to be humorous. We at P&T are fortunate to have Nancy Greengold, a.k.a. the female Dave Barry of the P&T universe, as an active member of our editorial board. All seriousness aside, Dr. Greengold takes a lighter-than-usual look at the growing problem of computer-inspired “alert fatigue”—and then offers some plausible solutions. Consider yourselves alerted.—S.S.*

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Commentary: Chronic Alert Fatigue

○ furor
○ computer rage (leading to physical abuse of the monitor and/or keyboard)
○ a burning desire to jump out of one’s skin
○ major annoyance
• minor criteria
  ○ dizziness
  ○ distraction
  ○ sadness
  ○ flatulence
  ○ minor annoyance
• exacerbating factors
  ○ volatile disposition
  ○ physician training
• mitigating factors
  ○ an innate ability to “chill”
  ○ pharmacist training

PROLIFERATION
It should be acknowledged that clinicians from all disciplines are susceptible to this syndrome, but some are more vocal than others when it comes to expressing their distress. Many pharmacists have become accustomed to being the arbiters of alerts in computerized pharmacy systems (where most drug alerts originated), having to decide which ones are important (and require action) and which ones are unimportant (either not relevant to the patient scenario or based on weak evidence that doesn’t justify any change in patient management). Yet over time, alerts just seem to proliferate for a variety of reasons:

1. Drug database companies that write alerts create new ones, often in response to manufacturer reports of risks (no matter how rare) and newly available medications.
2. Medication regimens become more complex, leading to more potential drug interactions.
3. Institutions and medical groups embrace alerts as an implementation tool for a wide spectrum of performance improvement, patient safety, and regulatory initiatives.

Pharmacists might be more compliant than other health care professionals in reviewing alerts, but they, too, are growing weary of having to cope with a lot of messages, especially because they believe that many of these are unnecessary. However, even though most of them have developed some form of CAFS, they are concerned about harming patients and attracting lawsuits; consequently, they continue to read the alerts meticulously—and grumble.

THERAPY FOR CAFS
Let’s see whether there is a happily-ever-after ending that can treat this insidious fatigue syndrome. Unfortunately, as with many maladies, there are no easy answers or ones that will satisfy all who are afflicted.

The uninhibited might boldly ask: What about just getting rid of alerts altogether? Well, there is evidence to indicate that many alerts are good for clinicians—or, better stated, good for their patients. Studies have shown that alerts lead to increased ordering of important regimens, such as deep-vein thrombosis prophylaxis and vaccination, as well as cost-containment and key safety interventions.

I’m a frequent business traveler, so I like the airline analogy. I appreciate the thought that the pilot of my aircraft is aboard the airplane before I arrive, systematically running through checklists and heeding alerts to fill an empty gas tank, to kick the tires, and to ensure that the wing flaps flap. Similarly, from a 30,000-foot perspective, anyway, patients like the idea that physicians are prompted to consider the potentially dangerous interactions of drugs, are cajoled to remember surgical antibiotic prophylaxis, and are encouraged to mark the skin on the correct surgical side where paired organs are concerned.

Yet in the health care field, we know that we may have a false sense of security. Merely displaying an alert or a reminder does not guarantee that it will be read and “processed.” There is the danger of inappropriate “overrides” of important messages by clinicians who are frustrated with the overabundance of alerts and reminders infiltrating their computer screens and progress notes—and who are unwilling to read through the “junk” to get to the “gold.” (Of course, “junk” and “gold” may be in the eye of the beholder.) There is a very real concern that inappropriate overrides may lead to patient harm; ironically enough, the profusion of alerts, intended to prevent adverse outcomes, takes some clinicians off their guard and puts them, their patients, and their institutions at greater risk.

DIFFERENT STROKES
So what do we do? It would perhaps seem desirable for drug content vendors, when creating alerts, to help their customers by defining a universe of “critical” messages that should be deployed all the time and a universe of “less important” ones that should be left to the discretion of the user. But getting even two people to agree on which alerts fall within each of these buckets would be difficult and potentially naive.

I submit that there is no reliable or scientific way to stratify alerts into categories that would fulfill the needs of so many different users, not to mention the complex, disparate populations of patients that they serve. Moreover, some people will find some alerts to be extremely useful, whereas others may react to the same alerts by saying, “Duh!”

For instance, as an internist, I might think that everybody should be reminded about the importance of administering aspirin to eligible patients who have just sustained a myocardial infarction. On the other hand, cardiologists might believe that they already know this and do not want to be bothered (or insulted) by such a trivial alert, which might distract them from the important task of ordering for patients.

Because creators of alerts cannot “get into the heads” of all of their unique users and cannot know prospectively the variable patient-care situation, they are challenged to write alerts that represent reasonable possibilities of interactions, contraindications, and drug–laboratory warnings. At the local level, however, organizations are best able to understand the demographic or other factors that may affect the desire for one alert versus another. Also, as indicated previously, institutions might want to set alerts according to user profiles, giving appropriate overrides may lead to patient harm; ironically enough, the profusion of alerts, intended to prevent adverse outcomes, takes some clinicians off their guard and puts them, their patients, and their institutions at greater risk.

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THE VALUE OF EVIDENCE

To avoid driving clinicians to distraction and to help organizations choose which alerts should and should not be displayed (or at what frequency), the content developers of alerts might consider providing additional information that will give organizations some basis for their decisions. For example, giving users a sense of the strength of the evidence supporting an alert would potentially be very helpful. If only a single case report of an adverse event has resulted from the use of two medications simultaneously, clinicians might question the importance of providing an alert about this. They might feel differently, however, knowing that the interaction was seen in hundreds of patients participating in a randomized, controlled trial. Understanding the origin of an alert recommendation, such as a manufacturer’s product insert versus a published peer-reviewed study, can be beneficial.

Alerts may become more useful (and less detected) by clinicians if they contain links to the scientific evidence (abstracts or full-text articles), when available—a rare occurrence with today’s commonly used drug resources. So, just as literature for medical therapy guidelines is often shared among physicians in conjunction with the guidelines themselves, available evidence supporting drug therapy recommendations should be shared with pharmacists and other clinicians. This enables interested users to read the “meat” of an article and to make reasoned assessments for themselves rather than rely on superficial “bottom-line” messages.

An added incentive for clinicians might be to offer Continuing Education credits for accessing and reviewing evidence; there is a growing belief in the health care community that “in context” education (reviewing relevant literature while seeing patients) is much more powerful than activities such as passive (can you say “snooze”?!) grand-rounds lectures.

THE ROLE OF CLINICAL DECISION SUPPORT

It should be acknowledged that much valuable clinical information is not necessarily best deployed in an “alert” format. Instead of just displaying warning messages that can be easily ignored, it might be possible to weave, into systems, important information that serves more of a clinical decision support function. For example, algorithms or stepwise ordering logic can facilitate decision-making and guide clinicians toward selecting appropriate medication doses or away from choosing drugs that are not recommended.

Similarly, clinical guidance can be offered in a narrative, unobtrusive manner that resides close to other tools or resources within an information system. Some groups have placed diagnosis-specific messages near a list of possible prescriptions without actually interfering with the workflow or requiring a response from physicians. A few groups have even rotated messages for a period of weeks so that users do not tire of certain messages but, instead, see fresh information appearing periodically.

Organizations will have varying levels of sophistication in their computerized systems; some will be able to offer useful decision support, and others will not be able to do so. Furthermore, some groups might be able to “filter” alerts according to certain features like sex, pregnancy status, and age, whereas other groups will not be able to do this and may end up displaying inappropriate (and annoying) alerts, such as pregnancy and lactation risks with gentamicin (Garamycin®, Schering) for an 80-year-old man.

With regard to noncritical alerts for various health care professionals, there may be ways of aggregating the alerts to be read by clinicians in a single proverbial bolus, without alerts being sprinkled all over the place. Here are a few examples:

1. In the outpatient setting, physicians might be given a single place on their desktops where they can review reminders in advance of seeing patients.
2. An alert might say, “Do you want to check the cholesterol in this patient with multiple cardiac risk factors?” or “Do you want to check the glycosylated hemoglobin in a patient with diabetes who hasn’t had it checked in a while?”
3. When nurses log into the discharge planning section of their notes, they might go over a list of reminders (in either a “pull” or “push” fashion, chosen by the clinician or organization) to give vaccinations, arrange for social work, and review medication lists with patients.

With these approaches, clinicians wouldn’t get pummeled with alerts “during the workflow”; they could set aside the time to review alerts, and then they would be able to deal with them. This might not be as effective a strategy as receiving context-sensitive alerts (i.e., while in the workflow), but it might be something to consider for times when clinicians simply automatically override all alerts that interrupt them.

Finally, a “divide and conquer” strategy for reviewing alerts might have some merit. Perhaps if we make nurses, physicians, pharmacists, and others responsible for different alerts (with “critical” ones going out to multiple-clinician types), we can avoid some of the alert fatigue, yet still receive the positive (patient safety) responses we seek.

CONCLUSION

The chronic alert fatigue syndrome is something that is unlikely to go away quickly, precisely because Alert the Enemy can also be Alert the Friend. Setting the alert to display only when it is needed (and at the “proper” frequency) can be a subjective decision at best.

But the syndrome, its causes, and its consequences should be addressed. After both the benefits and the harms of alerts have been acknowledged, an “alerts-in-moderation” strategy should be emphasized so that we can appreciate the occasional presence of the messages but not become overwhelmed and desensitized by them, thus losing our inhibitions with regard to caution in patient care. In an ideal world, we will find a Goldilocks solution, leading to fewer grouchy, miserable clinicians, happier patients, and safer prescribing.

Disclaimer: The views expressed in this article are those of the author and do not necessarily reflect those of P&T. (We had to say that.)

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