Of the 50 patients without visual representation of their attending physician’s name on a dry erase board, only 5 (10%; 95% CI, 3%-22%) were able to correctly identify the name of their attending physician. There was very strong evidence that this proportion was higher for patients with visual representation of their attending physician’s name (P < .001), of whom 94 of 96 patients (98%; 95% CI, 93%-100%) were able to correctly identify their attending physician’s name. This indicates that compared with patients with no visual representation, the proportion of patients who were correctly able to identify the name of their attending physician was 88% higher (95% CI, 76%-94%) for patients with visual representation of their attending physician’s name in their room. Of note, of the 4 excluded patients for whom the attending physician’s name was not written on the dry erase board, none were able to correctly identify the name of that physician.

Comment. Our results confirm that patient knowledge of their attending physician is poor, since only 10% of our control group was able to identify the name of their attending physician correctly. This is consistent with previous findings. With a simple modification of having the name reliably visualized in front of them, we improved this knowledge in virtually all patients interviewed (98%). Although this may have been expected, as the name was written for patient reference, previous studies have found that repeated visualization of medical information improved recall significantly even after the information was no longer visualized. One limitation of our study is that although the patients showed improved name recognition, we are unsure if this process would improve face recognition. Francis et al found that the use of photographs helped patients identify hospital team members, and this led to higher overall patient satisfaction. A similar study using physician photographs posted on a patient room display would be an interesting next step. On the basis on our findings, we conclude that a simple system that includes visual representation of all of the health care team’s names and responsibilities can help improve the awareness of patients’ identification of their medical providers.

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Reasons for Discontinuation of Medication During Hospitalization and Documentation Thereof: A Descriptive Study of 400 Geriatric and Internal Medicine Patients

Medication is often changed or discontinued during hospital admission, and this is especially true for medications prescribed to elderly patients. However, after discharge further changes to medication regimens are not always intentional and may be due to poor communication. For example, in an earlier study, we found that adverse drug reactions detected during hospitalization and requiring cessation of the causative drug were poorly communicated to primary care professionals (general practitioners and pharmacists), leading to a rate of re prescription of withdrawn medication of 27% during the first 6 months after discharge. The study highlighted the need for better communication of reasons for discontinuation of medication. Adequate communication of these reasons can only exist on the condition that these reasons are well documented. Our experience in daily practice is that such documentation is often inadequate. The objectives of the present study were to evaluate the frequency of reasons for discontinuation of medication and the documentation thereof in hospitalized patients.

Methods. We studied the medical records (paper and/or electronic) of consecutive patients admitted to the geriatric and internal medicine wards of the University Medical Center Utrecht (n = 200) and the Catharina Hospital in Eindhoven (n = 200), the Netherlands, to determine which medications were used before hospitalization. Discontinuation was defined as stopping or switching to another drug within the same therapeutic range. Prescribed and discontinued medications and dates of discontinuation were extracted from electronic prescription programs, and then patient records were reviewed to determine whether the reasons for discontinuation of these medications at these dates had been recorded. Reasons for discontinuation were categorized as “adverse drug reaction,” “contraindication,” “no longer indicated,” “interaction,” “palliation,” “ineffective,” “no reason mentioned,” “at request of patient,” or “other.” Discontinuation of antibiotics after completion of a course and of potassium supplementation after nor-

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Author Contributions: Study concept and design: Maniaci. Acquisition of data: Maniaci. Analysis and interpretation of data: Maniaci, Heckman, and Dawson. Drafting of the manuscript: Maniaci, Heckman, and Dawson. Critical revision of the manuscript for important intellectual content: Maniaci and Dawson. Statistical analysis: Heckman. Administrative, technical, and material support: Maniaci. Study supervision: Dawson.
malization of serum potassium level was interpreted as "no longer indicated."

**Results.** The mean age of the 200 geriatric patients was 82 years, and of the 200 internal medicine patients, 57 years. The geriatric patients used a mean of 7.3 (range, 0-24) medications at admission, and the internal medicine patients used a mean of 4.8 (range, 0-20). The mean number of discontinued medications was 4.9 (range, 0-22) in geriatric patients and 2.8 (range, 0-26) in internal medicine patients. Of all the discontinued medications used in geriatric patients, 50% were prescribed before admission and 50% had been started during hospitalization. Among internal medicine patients, 33% of discontinued medications were prescribed before and 65% during hospitalization. The most frequently discontinued medications were cardiovascular drugs, antibiotics, and supplements (vitamins and minerals). In 39.8% of discontinued medications, no reason for discontinuation was documented (Table). Most frequently documented reasons for discontinuation were “no longer indicated” (27.5%), “palliation” (9.8%), “contraindication” (9.1%), and “adverse drug reactions” (5.2%). In geriatric patients “palliation” occurred more frequently as reason for discontinuation: 12.3% vs 5.5% in internal medicine patients. “No longer indicated” occurred more often in internal medicine patients (32.5% vs 24.5%). Frequencies of other reasons for discontinuation were not different between geriatric and internal medicine patients.

**Comment.** To our knowledge, this is the first study of reasons for medication discontinuation during hospitalization. We found that in more than a third of the discontinued medications the reason was not documented in the patient records. Poor documentation and communication of reasons for discontinuing medication may result in the represcription of withdrawn medications, which could have adverse repercussions on the patients’ health. Egual et al reported that reasons for discontinuation can be accurately recorded in an electronic prescription program in primary care. We propose that reasons for discontinuation of medication should be recorded in electronic patient files, which are currently being introduced in the Netherlands and other countries. To facilitate this, we are developing an electronic clinical decision support module that forces physicians to document these reasons. In addition, this module will make the information available to other relevant health care providers, for example, general practitioners and pharmacies. A limitation of the present study is its small number of studied departments (internal medicine and geriatric wards) and hospitals (n = 2).

We believe that using an electronic prescription program with a clinical decision support module that incorporates reasons for discontinuation will improve documentation and communication of reasons why medication is withdrawn, leading to better pharmacovigilance at a patient level.

**Table. Reasons for Discontinuation of Medication**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Patients, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medication Used on Admission</td>
</tr>
<tr>
<td>No reason mentioned</td>
<td>373 (54.4)</td>
</tr>
<tr>
<td>No longer indicated</td>
<td>52 (7.6)</td>
</tr>
<tr>
<td>Palliation</td>
<td>45 (6.6)</td>
</tr>
<tr>
<td>Contraindication</td>
<td>93 (13.6)</td>
</tr>
<tr>
<td>Adverse drug reaction</td>
<td>58 (8.5)</td>
</tr>
<tr>
<td>Ineffective</td>
<td>26 (3.8)</td>
</tr>
<tr>
<td>At request of patient</td>
<td>2 (0.3)</td>
</tr>
<tr>
<td>Interaction</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td>(drug-drug)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>36 (5.2)</td>
</tr>
<tr>
<td>All</td>
<td>686 (100)</td>
</tr>
</tbody>
</table>

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COMMENTS AND OPINIONS

A Possible Epigenetic Explanation for the Relationship Between Physical Activity and Exceptional Health Among Older Women

Sun et al1 found an association between midlife physical activity and exceptional health among older women. It reminded me of some other articles that I have read recently that may be relevant to it.

The epigenetic drift theory of aging holds that epimutations that develop over the course of a lifetime, resulting in the deterioration of the genome, contribute to the degenerative diseases of aging.2,3 For example, epigenetic drift leading to hypomethylation of repeat elements and the hypermethylation of the promoters of tumor-suppressor genes is believed to play a role in cancer. Epigenetic mechanisms have also been proposed as a factor in Alzheimer disease, type 2 diabetes mellitus, atherosclerosis, and osteoarthritis.3

Could exercise slow the decline of the body and mind by slowing the deterioration of the genome? Some research hints at the possibility that the benefits of exercise are derived in part from epigenetic mechanisms. For example, cancer researchers have found a possible inverse relationship between CACNA2D3 methylation and physical activity.4 In an animal model, exercise influences histone H3 phosphoacetylation in the brain.5

Much more research needs to be done to study whether the epigenetic drift component of aging is influenced by exercise.

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CRISIS MANAGEMENT

Exercise improves cognitive responses to psychological stress through enhancement of epigenetic mechanisms and gene expression in the dentate gyrus.6

Appropriate Discard of “Best” Practice Guidelines for Acute Low Back Pain

Evidence-based guidelines for acute low back pain (LBP)3 are clearly appropriately viewed by clinicians as recommendations as opposed to rigid mandates. Practitioners use training, wisdom, experience, and logic to accurately redefine “best practice care” by occasionally rejecting “expert” guidelines.

Precedent is exemplified by authors in JAMA2 and the Cleveland Clinic Journal of Medicine3 recommending that mammograms remain encouraged at age 40 years, despite US Preventive Services Task Force November 2009 guidelines recommending initial breast cancer screenings at age 50 years.

International recommendations may include acetaminophen as first choice for acute LBP followed by nonsteroidal anti-inflammatory drugs (NSAIDs) if additional analgesia is required with opioids as tertiary options, but fortunately clinicians in the published study primarily prescribed NSAIDs and opioids.3

Despite the assertion that the recommended acetaminophen dose is 4 g/d,1 because of acute hepatotoxicity, paracetamol dose was downsized to 3250 mg in healthy persons, with a maximum dose of 2000 mg for patients with damaged livers.2 Given that viral hepatitis is common and world prevalence of occult alcoholism ranges up to 25%, 2000 mg may be liberal rather than cautious. The active metabolite of acetaminophen is so toxic that ingestion of two 500-mg tablets 3 times daily rapidly transforms some non–life-threatening acute LBP presentations to preterminal events.

Rather than delaying NSAIDs to secondary treatment, NSAIDs should immediately be initiated, since acute musculoskeletal LBP is characteristically inflammatory, characterized by profound amplification of prostaglandins and other mediators, some of which effect tissue damage. With NSAIDs, clinicians have an opportunity to “put water on campfires before becoming forest fires,” enor-mously mitigating morbidity and lost days of work.

Fortunately, clinicians in the study by Williams et al1 primarily prescribed NSAIDs as the most common pharmaceutical, contrary to guideline recommendations, presumably recognizing that it is erroneous to suggest that acetaminophen is “equally effective” as NSAIDs, since paracetamol does not alter the inflammatory cascade.

With proven safety and efficacy, opioids have treated acute pain for over 90 centuries. Unlike NSAIDs and acetaminophen, the ceiling of analgesia is not fixed such that dose escalation diminishes pain to the point where patients return earlier to work, affecting cost savings. Opioids may also prevent transformation of acute to chronic lifelong pain3 and perceived disability such that sampled practitioners appropriately did not delay offering opioids.