after training compared with before. It is not clear, how-
ticipants reported calling 911 at the scene of an overdose
research involving life-threatening conditions. Leese and Or-
points (eg, ability to respond to an overdose, rescue self-
to be protective.5 Strang J, Manning V, Mayet S, et al. Overdose training and take-home nalox-
one for opiate users: prospective cohort study of impact on knowledge and atti-
titude and subsequent management of overdoses. Addiction. 2008;103(10):
1648-1657.
4. Tobin KE, Sherman SG, Beilenson P, Welsh C, Latkin CA. Evaluation of the Stay-
ing Alive programme: training injection drug users to properly administer nalox-
www.homeoffice.gov.uk/publications/agencies-public-bodies/acmd1

In Reply: The call by Drs Leese and Orkin for more robust
research on community-based naloxone access bolsters our
appeal for urgent scale-up in resources to support the study of
overdose fatality prevention. A long-standing problem among nonmedical drug users, opioid overdose began reach-
ing epidemic proportions in the United States by 2004. Yet it
took until 2009 for the US government to issue its first
research grants to evaluate overdose fatality prevention in-
terventions. This funding is just starting to bear fruit: an epide-
miological study recently concluded that locales that imple-
mented community-based overdose prevention with
naloxone rescue kits experienced reduced opioid overdose
mortality compared with those that did not.1

Extensive evidence of the positive effect of community-
based—as well as health care–based—opioid overdose fa-
tality prevention programs already exists.2,3 Although it is
true that many of the earlier evaluations use surrogate end
points (eg, ability to respond to an overdose, rescue self-
report), surrogate end points are generally appropriate in
research involving life-threatening conditions. Leese and Or-
kin cite one study that found that 16% fewer program par-
icipants reported calling 911 at the scene of an overdose
after training compared with before;4 it is not clear, how-
ever, if the training stressed the importance of calling for
help even if individuals completely recovered. Since the
study was conducted in 2004-2005, this has become a core
element of overdose response training and numerous evalu-
ations have failed to identify any significant reduction in help
seeking (or other adverse effects).2

Leese and Orkin appear to suggest that randomized con-
trolled trial evidence must come before any public health
response to the opioid overdose epidemic, but there is cur-
rently no overdose prevention modality that meets this stan-
dard. Many lifesaving public health interventions have
emerged without randomized controlled trials because the
preponderance of observational and epidemiological re-
search had been sufficient in the face of mounting harm,
calling the ethics of experimental randomization into ques-
tion. Examples include seat belts to prevent traffic fatali-
ties and syringe access to curb human immunodeficiency
virus transmission. We believe that, in view of the rapidly
mounting overdose death toll, there is an imperative for in-
tervention based on best-available evidence while advocat-
ing for additional research.

The principal purpose of our Viewpoint was to highlight a
range of opportunities to prevent opioid overdose fatali-
ties. The public health and cost-effectiveness evidence is now
sufficient to scale-up prehospital naloxone use, but only as
a part of a comprehensive approach that integrates safe opio-
id prescribing education, raising of public awareness, in-
creased access to opioid agonist treatment, and a number of
other underused tools. There is no question that opioid
users deserve the same quality of research, care, and con-
cern as other patients; this is precisely what motivated our
call for a multipronged approach to prevent deaths attrib-
tutable to opioid overdose. Urgent action to address this burge-
oning epidemic is needed.

Leo Beletsky, JD, MPH
Alexander Y. Walley, MD, MSc
Josiah D. Rich, MD, MPH

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Island (Dr Rich).

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Open Society Foundations. Dr Walley reported being a consultant for Social Sci-
ences Innovations Corp and the Massachusetts Department of Public Health; being
employed by the Boston Public Health Commission as the medical director of the
opioid treatment program; and receiving a grant from the National Institute on
Alcohol Abuse and Alcoholism. Dr Rich reported receiving funding from the Na-
tional Institute of Allergy and Infectious Diseases.

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ing Alive programme: training injection drug users to properly administer nalox-

RESEARCH LETTER

Predicting 10-Year Mortality for Older Adults

To The Editor: Preventive interventions, such as cancer
screening, expose patients to immediate risks with delayed
benefits, suggesting that risks outweigh benefits in pa-
tients with limited life expectancy. Recent guidelines rec-
ommend considering patients’ life expectancy when decid-
ing whether to pursue preventive interventions with long
lag times to benefit (≥ 7 years) such as colorectal cancer screening and intensive glycemic control for diabetes. However, most mortality indices have focused on short-term risk (≤ 5 years). We examined whether our previously developed 4-year mortality index accurately predicted 10-year mortality.

Methods. Like our previous analysis, this analysis uses the 1998 wave of the Health and Retirement Study (HRS), a nationally representative cohort of community-dwelling US adults older than 50 years. The HRS cohort was divided geographically into development (East, Central, and West; n = 11,701) and validation (South; n = 8,009) cohorts. Self-report data were collected primarily through telephone interviews (response rate 81%).

The primary predictor was a 12-item mortality index (ages 60-64 years: 1 point, ages 65-69 years: 2 points, ages 70-74 years: 3 points, ages 75-79 years: 4 points, ages 80-84 years: 5 points, ages 85 years: 7 points; male sex: 2 points; current tobacco use: 2 points; body mass index < 25: 1 point; diabetes: 1 point; nonskin cancers: 2 points; chronic lung disease: 2 points; heart failure: 2 points; difficulty bathing: 2 points; difficulty managing finances: 2 points; difficulty walking several blocks: 2 points; and difficulty pushing/pulling large objects: 1 point). Our outcome was death through 2008 (10-year mortality), confirmed with the National Death Index.

A risk score was calculated for each participant by summing the points for each risk factor present. We calculated the 10-year mortality rates across point scores. Kaplan-Meier methods were used to display the validation cohort survival experience, and logistic regression with bootstrapping was used to determine the C statistic, 95% confidence intervals, and 2-sided P values. A P value of less than .05 was considered statistically significant. Cox proportional hazards analyses yielded similar results.

The committee on human research of the University of California, San Francisco, approved this study with a waiver for informed consent. The statistical software used was STATA version 12.0 (StataCorp).

Results. Baseline characteristics of the cohort were described in detail previously. Briefly, in the validation cohort, the mean (SD) age of participants was 67 (10) years; 56% (n = 4,516) were women, 11% (n = 826) reported a history of cancer, 16% (n = 1,141) reported diabetes mellitus, 18% (n = 1,414) reported difficulty in at least 1 activity of daily living, and 32% (n = 2,527) died during the 10 years of follow-up. The development cohort had similar characteristics.

In the development cohort, 10-year mortality rates ranged from 2.5% (95% CI, 1.1%-3.9%; n = 12/486) for participants with 0 points to 96% (95% CI: 94%-98%; n = 298/310) for participants with 14 or more points. In the validation cohort, 10-year mortality rates ranged from 2.3% (95% CI, 0.7%-3.8%; n = 8/354) to 93% (95% CI, 90%-96%; n = 239/257) (Table). The C statistic for the index was 0.838 (95% CI, 0.830-0.846) in the development cohort and 0.834 (95% CI, 0.824-0.843) in the validation cohort. There was no evidence of poor calibration (validation cohort, Hosmer-Lemeshow P = .38).

Table. Validation of the Lee Index for 10-Year Mortality

<table>
<thead>
<tr>
<th>Point score</th>
<th>Predicted Mortality (95% CI), %</th>
<th>Development Cohort (n = 11,701)</th>
<th>Validation Cohort (n = 8,009)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Died/No. at Risk</td>
<td>Mortality (95% CI), %</td>
<td>No. Died/No. at Risk</td>
</tr>
<tr>
<td>0</td>
<td>2.8 (1.3-4.2)</td>
<td>12/486</td>
<td>2.5 (1.1-3.9)</td>
</tr>
<tr>
<td>1</td>
<td>4.0 (2.6-5.4)</td>
<td>22/739</td>
<td>3.0 (1.8-4.2)</td>
</tr>
<tr>
<td>2</td>
<td>6.0 (4.8-7.3)</td>
<td>67/1366</td>
<td>4.9 (3.8-6.1)</td>
</tr>
<tr>
<td>3</td>
<td>9.1 (7.6-11)</td>
<td>151/1474</td>
<td>10 (8.7-12)</td>
</tr>
<tr>
<td>4</td>
<td>14 (12-16)</td>
<td>214/1445</td>
<td>15 (13-17)</td>
</tr>
<tr>
<td>5</td>
<td>21 (19-23)</td>
<td>275/1330</td>
<td>21 (19-23)</td>
</tr>
<tr>
<td>6</td>
<td>30 (27-33)</td>
<td>368/1162</td>
<td>32 (29-34)</td>
</tr>
<tr>
<td>7</td>
<td>40 (36-43)</td>
<td>346/886</td>
<td>39 (36-42)</td>
</tr>
<tr>
<td>8</td>
<td>52 (48-55)</td>
<td>387/758</td>
<td>51 (48-55)</td>
</tr>
<tr>
<td>9</td>
<td>62 (58-66)</td>
<td>334/551</td>
<td>61 (57-66)</td>
</tr>
<tr>
<td>10</td>
<td>71 (67-76)</td>
<td>286/407</td>
<td>70 (66-75)</td>
</tr>
<tr>
<td>11</td>
<td>81 (76-85)</td>
<td>268/320</td>
<td>80 (77-87)</td>
</tr>
<tr>
<td>12</td>
<td>85 (81-90)</td>
<td>206/244</td>
<td>84 (80-89)</td>
</tr>
<tr>
<td>13</td>
<td>89 (85-94)</td>
<td>150/174</td>
<td>86 (81-91)</td>
</tr>
<tr>
<td>≥ 14</td>
<td>93 (93-98)</td>
<td>298/310</td>
<td>96 (94-98)</td>
</tr>
</tbody>
</table>

C statistic | 0.847 (0.839-0.854) | 0.838 (0.830-0.846) | 0.834 (0.824-0.843)

*aCalculated from the model with 12 risk factors.

*bCalculated from a model with only risk points, with the 12 risk factors contributing to the risk point total.
The Kaplan-Meier survival curves showed that the differences in survival by point score seen at 4 years were magnified at 10 years (Figure).

Comment. We validated a mortality index that accurately stratified older adults into groups at varying risk for 10-year mortality. Extending the index from 4 to 10 years did not diminish the model discrimination (validation c statistics 0.817 vs 0.834; P = .35), suggesting that the risk factors important for 4-year mortality prediction are also important for 10-year mortality prediction. The model compares favorably with other mortality indexes that predict mortality after 65 and older. J Am Geriatr Soc 2011;59(8):1444-1451.


CORRECTION

Incomplete Conflicts of Interest Disclosures: In the Original Contribution entitled "Fish Oil and Postoperative Atrial Fibrillation: The Omega-3 Fatty Acids for Prevention of Post-operative Atrial Fibrillation (OPERA) Randomized Trial" published in the November 21, 2012, issue of JAMA (2012;308[19]:2001-2011), information reported by the authors for the Conflicts of Interest Disclosures section was inadvertently omitted. The text in that section should have read as follows: “All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Mozaffarian reported receiving a grant from GlaxoSmithKline, Sigma Tau, the National Institutes of Health, and Pronova for a not-for-profit randomized clinical trial of fish oil supplements for prevention of post-surgical complications; serving on the Unilever North America Scientific Advisory Board; serving as a consultant for FoodMinds and McKinsey Health Systems Institute; receiving royalties from UpToDate; and receiving payment for development and educational presentations from the International Life Sciences Institute, Bunge, SPRIM, Pollack Institute, and Nutrition Impact. Dr Marchioli reported receiving grants from GlaxoSmithKline, Pronova Biopharma, and Sigma Tau; serving as a consultant for Catabasis; receiving grants or grants pending from Sigma Tau, SPA, GlaxoSmithKline, Novartis, Amgen SpA, the Myeloproliferative Disorders Research Consortium, AIFA, Ospedali Riuniti di Bergamo, Associazione Italiana Linformi, Pronova, Menarini, and General Electric; and receiving payment for lectures from Ferrer, Pronova, and Sigma Tau. Dr Macchia reported receiving a grant for study coordination in Argentina, reimbursement for steering committee meetings, and a grant or grant pending from SPA and Sigma Tau for conducting the FORWARD clinical trial. Ms Silletta reported receiving a grant from GlaxoSmithKline, Sigma Tau, the National Institutes of Health, and Pronova. Dr Ferrazzi reported receiving a grant, consulting fees, and travel support from GlaxoSmithKline, Sigma Tau, the National Institutes of Health, and Pronova. Dr Latini reported receiving a grant from Partners Association; receiving travel support from Roche Diagnostics; serving as a board member for Alera; serving as a consultant for Fisiopharma and Farmatex; receiving payment for lectures from Novartis; and receiving travel/accommodations/meeting expenses from Roche Diagnostics. Dr Libby reported receiving a grant and travel support from GlaxoSmithKline, Sigma Tau, the National Institutes of Health, and Pronova; serving as a consultant for AstraZeneca, Novartis, and Pfizer. Dr Lombardi reported receiving travel support and participation fees for review activities from Istituto Mario Negri Sud. Dr Page reported receiving a grant and travel support from Partners. Dr Tavazzi reported receiving travel support from GlaxoSmithKline, Sigma Tau, the National Institutes of Health, and Pronova; serving as a board member for Servier, St Jude Medical, Boston Scientific, Medtronic, ViVo Pharma, and Cardiolorentis; and receiving payment for lectures from Servier. Dr Tognoni reported receiving a grant from GlaxoSmithKline, Sigma Tau, the National Institutes of Health, and Pronova; receiving grants or grants pending from Sigma Tau; and receiving payment for lectures from Ferrer, Pronova, SPA (Societè Prodotti Antibiotici), and Sigma Tau. No other authors reported disclosures.” This article has been corrected online.

LETTERS

Figure. Kaplan-Meier Survival in Validation Cohort by Selected Risk Points

<table>
<thead>
<tr>
<th>Risk points</th>
<th>Time Since Baseline Interview, y</th>
<th>Adult Survival Rate, %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>60</td>
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<td>3</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
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<td>8</td>
<td>8</td>
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Study supervision: Widera, Lee.

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