is likely that progression to type 2 diabetes will be slower with the expanded criteria compared with impaired glucose tolerance. Finally, medicalization of prediabetes may have the unintended consequence of reducing health care access to patients with type 2 diabetes and other chronic conditions. A valid method to examine for prediabetes should avoid unnecessary medicalization by labeling a disease predecessor as a medical condition and seek to concentrate on people at highest risk to allow for efficient distribution of limited health care resources.

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Editor's Note

The Medicalization of Common Conditions

When *JAMA Internal Medicine* launched the Less Is More series 6 years ago, we commented that one area of concern was "medicalization" of common conditions.[1] In this issue, Shahraz et al[2] elegantly demonstrate how common conditions can be "medicalized." Using NHANES data they find that a widely promoted web-based risk test would label more than 73 million Americans, including more than 80% of those older than 60 years, as being at high risk for "prediabetes," a condition never heard of 10 years ago.[2] We suggest a better approach to preventing the epidemic of obesity and its multiple health-related complications is emphasis on healthful diet, weight loss when appropriate, and increased physical activity at all levels—by schools, the medical profession, and public health and governmental agencies.

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Estimating 1-Year Mortality for High-Risk Primary Care Patients Using the "Surprise" Question

Palliative care improves the value of care for seriously ill patients, but resource constraints necessitate targeting palliative care interventions to patients who need them most.[1] The "surprise" question (SQ)—"Would you be surprised if this patient died in the next 12 months?"—has emerged as an attractive, simple solution for identifying patients who might benefit from palliative care.[2,3] Despite optimism about the potential of the SQ to identify primary care patients who would benefit from palliative care,[4] there is no evidence on its performance in this setting.

Methods | We identified patients screened for a high-risk care management program at a large academic primary care practice for whom the primary care physicians answered the SQ between August 30, 2012, and February 27, 2014. We assumed a no answer represented physician prediction of high 1-year mortality risk. Our primary outcome was mortality 1 year after SQ response, determined by linkage to Social Security Administration data. We obtained demographics and comorbidities[5] from electronic health records. We assessed SQ performance for estimating 1-year mortality using area under the receiver operating characteristic curve, sensitivity, positive predictive value, and odds ratio of a no response for 1-year mortality using univariate logistic regression. To quantify incremental benefit of the SQ for predicting 1-year mortality over and above routinely collected administrative data, we calculated the integrated discrimination improvement[6] of adding the SQ response to multivariate logistic regression of mortality on age, sex, and comorbidity score.[5] The institutional review board of Partners HealthCare approved this study with a waiver of informed consent. Analysis is based on patient data from medical records and Social Security Administration data (identified records); tabulations, test characteristics, and regression analyses are deidentified data.

Results | A total of 1737 patients were included in the study. Patients were predominantly female (1041 [60.3%]). Mean age

Table 1. Tabulation of SQ Response and Patient Vital Status After 1 Year

SQ Response	Vital Status After 1 y, No. (%)		Total, No. (%)
	Deceased	Alive	
No	23 (20.2) (Death predicted, accurate)	91 (79.8) (Death predicted, inaccurate)	114 (6.6)
Yes	89 (5.5) (Alive predicted, inaccurate)	1534 (94.5) (Alive predicted, accurate)	1623 (93.4)
Total	112 (6.4)	1625 (93.6)	1737

Abbreviation: SQ, "surprise" question.

Table 2. Multivariate Logistic Regression With an Outcome of Vital Status After 1 Year

Characteristic	Odds Ratio (95% CI)	*P* Value
Age	1.05 (1.03-1.06)	<.001
Male	1.61 (1.08-2.42)	.02
Gagne comorbidity score	1.23 (1.15-1.32)	<.001
SQ response of no	2.52 (1.46-4.34)	.001

Abbreviation: SQ, "surprise" question.

was 65 years, and 750 (43.2%) had 3 or more comorbidities. High-risk patients (SQ answer of no) had 4.36 times higher odds of dying than low-risk patients (SQ answer of yes) (95% CI, 2.63-7.22; $P < .001$; area under the receiver operating curve, 0.57). **Table 1** reports the performance of the SQ as a screening test for 1-year mortality. Sensitivity of the SQ was 20.5% and specificity was 94.4%, giving positive and negative likelihood ratios of 3.66 and 0.84, respectively. Given the 1-year mortality rate of 6.6% in this population, positive and negative predictive values were 20.2% and 94.5%, respectively.

In multivariate analysis, a primary care physician prediction of high risk remained more strongly associated with 1-year mortality (odds ratio, 2.52; 95% CI, 1.46-4.34; $P = .001$; area under the receiver operating curve, 0.79) than age, sex, or comorbidity score (**Table 2**). Predictive performance of the logistic regression model, however, was not significantly improved by SQ response (integrated discrimination improvement, 0.88; 95% CI, −0.14 to 1.90).

Discussion | We found that primary care physician prediction of high mortality risk via the SQ failed to identify most deaths at 1 year, making it a poor screening tool for mortality in a heterogeneous primary care population. Adding the SQ response to a validated 1-year mortality prediction model[5] did not improve the discriminative ability of that model. More important, even if mortality were wholly predictable, short life expectancy is only 1 of many triggers for palliative care interventions. Prognosis alone does not explicitly account for symptoms and other burdens of serious illness that also indicate a need for palliative care.

Although these results suggest caution in using the SQ in isolation to identify patients with poor prognosis in the primary care setting, the SQ contributes to estimating mortality: it was strongly and significantly associated with 1-year mortality, and this effect was noted over and above known correlates, such as age and comorbidities. These findings are mostly consistent with prior studies[2,3] that examined the SQ in renal disease and cancer. Understanding this signal and incorporating it into more advanced predictive algorithms could be useful topics for future research.

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Concept and design: Lakin, Bernacki, Powers, Block, Cunningham, Obermeyer.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Lakin, Robinson, Powers, Cunningham, Obermeyer.
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Pokémon GO—A New Distraction for Drivers and Pedestrians

Pokémon GO, an augmented reality game, has swept the nation. As players move, their avatar moves within the game, and players are then rewarded for collecting Pokémon placed in real-world locations. By rewarding movement, the game incentivizes physical activity. However, if players use their cars to search for Pokémon they negate any health benefit and incur serious risk.

Motor vehicle crashes are the leading cause of death among 16- to 24-year-olds, whom the game targets.[1] Moreover, according to the American Automobile Association, 59% of all crashes among young drivers involve distractions within 6 seconds of the accident.[2] We report on an assessment of drivers and pedestrians distracted by Pokémon GO and crashes potentially caused by Pokémon GO by mining social and news media reports.[3]

Methods | Twitter (https://twitter.com/) postings containing the terms "Pokémon" and "driving," "drives," "drive," or "car" (N = 345 433) were obtained for July 10 through 19, 2016. A random sample of 4000 tweets was generated, and estimates from this sample were used to create population-level estimates. Each tweet was reviewed by 4 investigators (J.W.A., E.C.L., J.-P.A., and L.H.) and characterized as to whether (1) a driver was playing, (2) a passenger was playing, or (3) a pedestrian interacted with traffic while playing Pokémon GO. Tweets with driving and/or pedestrian safety messages were also noted. Interreliability on 100 tweets yielded a $\kappa = 0.68$.

Google News (https://news.google.com/) reports published from July 10 to 20, 2016, that included "Pokémon" and "driving" were obtained, yielding 321 story clusters. Reports of crashes caused by Pokémon GO were identified; duplicate coverage was eliminated.

All analyses relied on public, anonymized data and adhere to the terms and conditions, terms of use, and privacy policies of Google and Twitter, and were performed under an institutional board exemption from Johns Hopkins University. No exact news reports or tweets are included in this report.

Results | Thirty-three percent (95% CI, 31%-34%) of tweets indicated that a driver, passenger, or pedestrian was distracted by Pokémon GO, suggesting there were 113 993 (95% CI, 107 084-117 447) total incidences reported on Twitter in just 10 days. In contrast, safety messages were less common (13%; 95% CI, 12%-16%). The remainder of postings (54%) were hypothetical, unclear, or unrelated (**Figure**).

Eighteen percent (95% CI, 17%-19%) of tweets indicated a person was playing and driving ("omg I'm catching Pokémon and driving") and 11% (95% CI, 10%-11%) indicated a passenger was playing ("just made sis drive me around to find Pokémon"). Four percent (95%, CI, 3%-4%) indicated a pedestrian was distracted ("almost got hit by a car playing Pokémon GO").

There were 14 unique crashes—1 player drove his car into a tree[4]—attributed to Pokémon GO in news reports during the same period.

Discussion | Pokémon GO is a new distraction for drivers and pedestrians, and safety messages are scarce. Delayed reaction to mobile phone distractions has hampered public safety[5]; however, by relying on public and real-time data (as given herein) public health can stay ahead of emerging problems.[6]

Our findings can help develop strategies for game developers, legislators, and the public to limit the potential dangers of Pokémon GO and other augmented reality games. For instance, passengers using mobile devices are typically not considered a driving risk, but given its augmented reality features, gaming passengers may implore drivers to take risks to aid their play.

Pokémon GO's makers can also voluntarily make their game safer. Game play is already restricted at speeds greater than 10 miles per hour. Making the game inaccessible for a period after any driving speed has been achieved may be necessary given our observations that players are driving or riding in cars. At the same time augmented reality games might be disabled near roadways or parking lots to protect pedestrians and drivers alike, given reports of distractions herein. Games might also include clear warnings about driving and pedestrian safety.

Traditional surveillance is needed to clarify our findings. Still, even with a limited scope covering just 10 days there were more than 110 000 discrete instances where drivers or pedestrians were distracted by Pokémon GO and some crashed.

Figure. Pokémon GO Tweets

Drivers	Passengers	Pedestrians	Uncategorized	Safety Messages
"A normal drive home = 5 min. Stopping every block to catch Pokémon GO = 20 min."	"Just made sis drive me around to find Pokémon."	"Just saw a kid get clipped by a car trying to catch a Pokémon…"	"From my view, Pokémon GO is not dangerous. Proves that some people are just really stupid."	"Pokémon GO prompts warnings about distracted driving."
"My mom just legit stopped the car in the middle of the road to catch a Pokémon…"	"Spent the drive back with my bros phone in one hand and my phone in the other, him yelling for me to catch Pokémon for him."	"Almost got hit by a car playing Pokémon GO."	"Pokémon GO is driving insane amounts of sales."	"Just passed sign saying 'Drive now catch Pokémon later.'"
"omg I'm catching Pokémon and driving."	"My mom is driving me around to help me find Pokémon lmao."	"Just had my first experience with a kid walking in front of my car while absorbed in playing Pokémon GO."	"Slept the whole drive do u know how many Pokémon i missed?"	"If you catch Pokémon while you drive, you're a jerk. I don't care how 'good' a driver you are."

Examples of Twitter postings within each of the labeled categories. Tweets were modified to protect individuals from being identified by or linked to this report.