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by a medical student within an hour of the respective ward nurses' recordings. Compared with one of us (RPW), the student's recording of the respiratory rate (± 1) for a convenience sample of 10 patients was 100% accurate. The student's recorded rates were compared with the nurses' values reported on the flow charts. All 3 shifts—morning, afternoon, and evening—were analyzed for a 5-day period ($N = 467$ recordings).

A Wilcoxon rank sum test was used to compare the paired recordings. In addition, the number and percentage of times that nurses noted a respiratory rate of 20 breaths per minute was compared with the information the student recorded. With the student value as the control, the nurses' recordings were determined to be correct if ± 2 of the student value. The percentage of correct and incorrect reporting for various respiratory rate ranges was calculated.

The distributions of the paired recordings by the student and the nurses were not statistically different, but a trend was observed ($P = .105$). Importantly, the nurses reported a value of 20 for the respiratory rate 234 (50%) of 467 times (Fig. 1). The student reported a value of 20 only 13 (3%) of 469 times. The accuracy of the nurses' recording of 20 (± 2) was 76%. For respiratory rate values of no more than 12, the nurses were correct 3% of the time. For values between 13 and 17, the nurses were correct 33% of the time, and for values between 18 and 22 (values for which 20 would be an acceptable value), the nurses were correct 76% of the time. For respiratory rate values of more than 23, the nurses were correct 15% of the time. Of all those who had a true value of more than 20/min (SIRS criterion), the nurses recorded a value of more than 20/min 25% of the time. For the respiratory component of the SIRS criteria ($R > 20$), the rates of false positives and false negatives were 6% and 77%, respectively.

From discussions with colleagues at many institutions in the United States, we suspect that there is widespread bias in recording respiratory rates. At our own institution, although the distributions of recordings were not statistically significant ($P = .105$), a P value approaching significance is a clinically relevant finding. From calculating the number of times nurses reported a value of 20 breaths per minute, it became evident that the nurses erred in reporting values that were not within the 20 ± 2 range. The false negative recording of SIRS criteria can delay early recognition of sepsis. Nurses should be educated on the value of true respiratory rate recording, and clinicians must count the rate themselves.

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The physician and mass medical event response: emergency preparedness implications

To the Editor,

Disaster planning has become a popular media topic in light of some of the national and world events of late including the severe acute respiratory syndrome epidemic, the events of September 11, Hurricane Katrina, and the threat of the H5N1 avian flu. Although much of the literature has focused on strategies for governmental and regional preparedness, very little information is available regarding the local preparedness of the primary care physician and his or her role in the medical management of such a disaster. Most preparedness planning up until this point has centered on hospital emergency departments (EDs) [1]. A recent report focused on emergency health care providers including emergency medical services, ED nurses, and emergency physicians and their intention to work during an infectious pandemic. In this study, the investigators noted that 80% of respondents would report for work if the infectious agent was unknown; less than half, however, would plan on reporting for work if the infectious agent was identified and known to be transmissible. The addition of treatment for the provider and family would, however, increase the number of providers who would report for work [2].

Although the primary care physician has been somewhat overlooked in the literature, it is clear that he or she is not overlooked by the patients who will be affected by such a medical disaster. A 2003 survey from Israel found that only 30% of patients in that nation would choose the hospital ED as their first choice for information in the event of an anthrax attack. Instead, two thirds of those surveyed preferred to seek help and information from their family physician or the health authorities [1]. In the US health care system where EDs are already overcrowded and the primary care physician plays a central role in accessing care, emergency planning must take account of these vital players and their impact on the delivery of care in a mass medical response.

We conducted a cross-sectional survey of 2238 physicians within the northwest hospital region of Virginia

Characteristics of Respondents	Number of respondents	Percentage
Clinical Practice Independent of the hospital		
Yes	137	58
No	98	42
Willingness to assist in managing influenza pandemic within the community		
Willing	165	71
Unwilling due to family priorities	20	9
Unwilling because my own patients come first	45	19
Unwilling because the personal risk is too great	3	1
Capacity to assist community if individual clinic were closed		
Allow building space to be used as medical triage site	63	
Staff a community pandemic triage site	121	
Staff a phone triage site	115	
Other	21	
None of the above	44	
Emergency plan in place at clinic for large infectious disease outbreak		
Yes, there is a written plan and staff have been informed of this plan	45	20
Yes, staff know what to expect but we have no plan in writing	34	15
No, we would need help to develop a plan	105	46
No, not interested	43	19
Perceived adequacy of educational material received on how to respond to a possible influenza pandemic		
Adequate	87	37
Not adequate	147	63
Source of educational material regarding pandemic influenza		
Media coverage	65	
Local health department	113	
Local hospital	101	
Individual research and reading	98	
None of the above - I have no information	34	
Other	22	
Interest in participating in the disaster planning process at the local level		
Interested	58	24
Not interested	178	76

Fig. 1 Characteristics of physician responders.

from August to November 2006 to determine the anticipated level of local primary care response in the event of a medical disaster. Internists (25%), family practitioners (18%), and pediatricians (14%) comprised a significant proportion of respondents, whereas the category of “other,” including radiologists, anesthesiologists, emergency medicine physicians, as well as a myriad of other specialists, comprised an additional 35% of respondents. More than half of those responding had a clinical practice independent of the hospital. Fig. 1 summarizes other characteristics of the responding physicians, including their

capacity and willingness to assist in the community during a medical disaster (this survey used the example of an influenza pandemic), as well as their perceived state of preparedness. In the event of a large-scale, high-mortality influenza pandemic (similar to the 1918 pandemic [3,4]), only 18% predicted that they would close completely. Thirty-three percent predicted that their clinic would remain open for any patient within the community, whereas 27% said they would remain open for established patients only (Fig. 2). Answers regarding a small-scale, low-mortality pandemic (similar to the 1957 or 1968

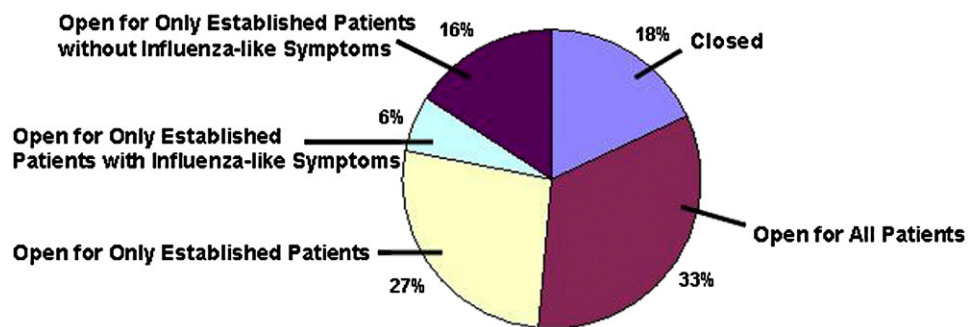


Fig. 2 Predicted status of independent clinical practices in a large-scale pandemic.

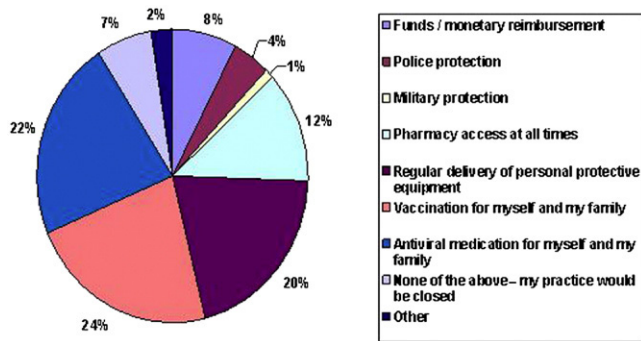


Fig. 3 Physicians' predicted requirements for maintaining clinic in an open status during a pandemic.

influenza pandemic [4]) followed the same trend with only 7.3% saying they would close completely, 48% remaining open for all patients, and 29% remaining open for established patients only. The physicians' predicted material requirements for maintenance of clinical operations during a pandemic are summarized in Fig. 3.

There has been much discussion in the ethics literature on infectious disease outbreaks regarding the physician's "duty to treat" in such circumstances [5-7]. Historical accounts of past epidemics and pandemics reveal the complexity of this issue and the evolving view of the physician's obligations during an infectious disease outbreak. Ethicists describe a peak acceptance of this duty between 1847 and the 1950s and a more recent "professional retrenchment" against it over the past 40 years [5]. The results of our survey, however, reveal that most physicians do accept a certain duty to treat during a medical disaster such as the one described in our study. Only 9% of physicians surveyed said they would turn away patients with influenza (ie, answered that they would either close their clinic or remain open only for established patients without influenza-like symptoms) during a small-scale pandemic and 34% would do so during a large-scale pandemic.

It has been proposed by some authors that the physician's duty to treat contagious patients should be reciprocated by certain societal social obligations, namely, (1) to take all reasonable precautions to prevent illness among health care workers and their families; (2) to provide for the care of those who do become ill; (3) to reduce or eliminate malpractice threats for those working in high-risk emergency situations; and (4) to provide reliable compensation for the families of those who die while fulfilling this duty [5,6]. With these points in mind, it is interesting to note which requirements for keeping their clinics open ranked most highly among the physicians surveyed: (1) vaccination for self and family (24%); (2) antiviral medications for self and family (22%); and (3) regular delivery of personal protective equipment (20%). Notably, financial reimbursement ranked much lower at only 8%. These findings reinforce the argument that special

efforts should be made as part of disaster planning to ensure that health care professionals receive all reasonable preventive and treatment measures in the event of an outbreak [6].

Although the most frequently chosen response in both scenarios of our survey (large-scale and small-scale pandemic) was to "remain open for all patients, established and new, regardless of illness" (33% and 48%, respectively), it must be noted that this leaves a large group of uninsured patients and patients without an established primary care physician with no recourse except the hospital ED. In the event of a small-scale pandemic, 45% of physicians said that they would see established patients only (whether ill with influenza or not) and this number grew to 49% during a large-scale pandemic. This means that nearly half of independent clinics would close their doors to new patients seeking medical treatment during a pandemic, leaving a large number to seek care elsewhere.

A national random-sample physician survey in 2002 showed that 80% of US physicians were willing to care for patients in the event of an outbreak of "an unknown but potentially deadly illness," but that only about 20% felt prepared to do so [7]. Likewise, a 2001 national survey of family physicians showed similar results with only a quarter of family physicians feeling prepared to respond to a bioterrorist event [8]. The results of our local survey nearly 5 years later were remarkably similar with 71% of physicians reporting a willingness to assist in managing a pandemic but only 20% having a written plan in place. Of the 80% of physicians without a written plan in place, 36.8% said they would need help to develop a plan.

Although small in scope, this regional study has important implications for future disaster preparedness planning. It shows that today's primary care physicians do believe in a duty to treat during a medical disaster and that most would keep their clinics open during such a crisis. The study also shows that despite attempts at continuing medical education on the subject of disaster preparedness, 63% of physicians still do not feel adequately informed and that they desire outside help in developing a specific written emergency plan for their clinic. Further research must be done to determine which methods will be most successful in achieving a higher rate of perceived physician preparedness. In addition, future disaster planning must take into account those factors which are most important to physicians being able to maintain their clinics during a medical disaster, such as vaccination and antiviral medication for self and family and adequate availability of personal protective equipment.

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Onset of symptoms after methadone overdose

We observed that the brief report "Onset of symptoms after methadone overdose" by LoVecchio et al [1] has some dramatic shortcomings that severely limit the applicability of their findings.

In an attempt to support short observation periods following methadone overdose, LoVecchio et al reported that only 32 of 44 cases of isolated methadone overdose received naloxone therapy. Unfortunately, the lack of clarity—such as the vital signs of patients who did or did not receive naloxone—makes this finding nearly meaningless. Considering that methadone intoxication can persist for days, information such as the number of times naloxone was administered, the use of a continuous naloxone infusion, the cumulative dose of naloxone, or the number of patients who were intubated (another highly effective therapy for opioid intoxication) would be highly useful to clinicians. In addition, the authors stated that symptoms, presumably from opioid intoxication, developed within 9 hours, but did not state whether this was 9 hours from ingestion or presentation. Although unable to

ascertain the total amount of naloxone needed, LoVecchio et al were capable of determining a mean estimated overdose of 109 mg of methadone. Unfortunately, the authors provide no dosage range. Did any of these overdose cases entail just twice the daily dose? How many of the patients were naive to methadone? Was comprehensive toxicology screening performed to verify that methadone was present and/or that other substances were not? In what percentage of cases was the overdose intentional versus accidental? What percentage were suicide attempts?

Significantly, the authors found that there were no deaths in the 32 patients who received any naloxone. However, no confidence intervals were listed for any of their findings. At best, the 95% confidence interval around zero events of 32 observations is 0% to 9% [2]. We doubt that any clinician would suggest that a 9% death rate is insignificant, and therefore, attempting to derive a "standard of care" as the authors suggest is misguided.

We feel that the limited sample size and lack of case or summary details leave clinicians with marginally more knowledge than before reading the article.

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Additional causes of electrocardiographic changes in lead aVR

To the Editor,

We have read with great interest the article recently published by Williamson et al entitled "Electrocardiographic applications of lead aVR" [1], which addressed the findings of lead aVR regarding 4 important conditions, including acute coronary syndrome with left main coronary artery occlusion, acute pericarditis, significant tricyclic antidepressant poisoning, and Wolff-Parkinson-White syndrome. From medical literature review and our experience, we would like to mention 3 additional conditions that