

workers. We applaud *Public Health Reports* for providing a forum for sharing these important results. We also thank PACE for conducting this innovative research. Results such as those presented in this article highlight the need for further research in this area.

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## Survivors of Torture

I salute the authors of "A Comprehensive Refugee Health Screening Program" [Public Health Rep 1999; 114:469-77] for adding mental health to the list of components in medical assessments of new refugees. At the same time, I have misgivings about recommending a symptom checklist that apparently only has "face validity" and is not familiar to a substantial number of practitioners. Are there other diagnostic surveys or questionnaires that might serve better? While I appreciate that it is difficult to identify mental disorders in new refugees clinically, I do not agree with the authors that "psychiatric diagnosis at the time of resettlement is most often inappropriate." Accurate diagnosis is useful at any stage of assessment of refugees, especially if it leads to treatment.

The authors report that during one three-month period, 14% of refugees had symptoms of mental health problems, most commonly due to torture. We know that the most prevalent psychiatric condition associated with torture survivors is post-traumatic stress disorder, with major depression second. As in screening for other medical conditions—for example, hypothyroidism and syphilis—the screener is obligated to ensure treatment. However, if the lack of cross-cultural mental health care for refugees is as severe in Colorado as it is in Minnesota, it seems likely that referral capacity will soon be exhausted. The Center for Victims of Torture in Minneapolis is strapped providing care to just 50 complicated new patients per year, roughly the number of torture survivors identified in Colorado among new refugees. With its current waiting list, the Center is working to increase options for psychiatric assessment and treatment of torture survivors in existing health and mental health organizations through its Minnesota Mainstream training project.

I believe that mental health screening which leads to early diagnosis and treatment is better than screening which identifies symptoms for which action is not clear. Refugees might be traumatized again if they tell their stories of torture but there is no place where their experience can be addressed. Therefore, the decision to question every adult refugee about torture and trauma assumes an intention to refer survivors for psychiatric assessment and treatment rather quickly.

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## The authors reply:

We appreciate and agree with Dr. Holtan's comments about the

urgency and importance of diagnosing post-traumatic stress disorder and depression in newly arrived refugees. In fact, our program was designed to be able to do just that, via a stepwise process of detection. Family physicians and registered nurses screen for psychiatric symptoms during the initial two visits in a relatively short allotment of time. We do not make diagnoses at this phase due to time limitations. However, the screening process does allow us to identify "mental health concerns." All of those who are identified as having mental health concerns are referred for diagnostic evaluation and treatment by mental health providers. At present, three mental health clinicians provide in-house services, and our primary site for referral of torture survivors is the Rocky Mountain Survivors Center. Thank you for giving us the opportunity to clarify this issue.

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## Involving a Community in a Marine Safety Investigation

In public health research, the use of a community-based methodology is becoming more common. In the ultimate form of this methodology, researchers become equal partners with members of the affected community and together they design and implement a study. Among the benefits of this approach is that having been equal partners, community members are more likely to take action on the research outcomes.

In 1997, the Marine Safety Office of the US Coast Guard in Portland, Maine, modified the community-based model for use with inshore scallop fishers in northern Maine. The components

of what became known as the Community-Based Investigation Model (CBIM) are: (a) Note an excess of a particular safety or health problem. (b) Suspect one or more causes. (c) Classify suspected causes into categories. (d) Link problems to categories of suspected causes. (e) Involve the affected community in a dialogue that builds on local knowledge to offer a wider perspective and suggest solutions to the problem.

In the case of regulatory and enforcement agencies such as the US Coast Guard, the approach to safety problems has been a top-down, unidimensional, feed-forward (linear), open-loop approach. CBIM offers an opportunity for inclusion of the community in a multidimensional, iterative, closed-loop approach. The ultimate goal is recognition by the community that taking action will reduce accidents and injuries.

The following is a brief description of the use of CBIM in the context of the inshore scallop fishery in Maine.

*Noting an excess.* Two years of data from the inshore scallop fishery in Maine revealed patterns of serious accidents ranging widely from vessel capsizes to limb amputation and a "struck-by" fatality. Historically, each safety incident was investigated by the Coast Guard on a case-by-case basis and recommendations for prevention of recurrences were made to the operator of the involved vessel. This "one vessel at a time" approach did not encourage risk reduction at the industry level.

*Suspect a cause(s).* We looked broadly for behavioral, operational, environmental, or mechanical causes. Through this search, we noted a diversity of equipment handling systems that was unique to this fishery. The suspected causes of accidents and injuries were imbedded in behavioral, operational, and mechanical aspects of handling and hauling.

*Classify suspected causes.* During the 1997–1998 inshore scallop season, safety personnel were deployed on Coast Guard vessels and commercial scallop fishing vessels to identify the different types of vessel equipment systems in use. This effort resulted in the identification of nine distinct designs, all of which were photographed and videotaped for analysis. An engineering analysis of these equipment designs resulted in their characterization into three basic types.

*Link accident/injury to design type.* Three basic types of accidents were evident: dynamic capsize, in which the energy of the vessel is a factor in the accident; static accident, in which the energy of the vessel is not a factor, such as hauling up over the side of the vessel; and injury to a crew member in what are best described as classic industrial/occupational accidents. We developed a matrix to link our accident and injury data to equipment type.

This process resulted in the evolution of scallop fishery-specific terminology that allowed safety personnel to describe acci-

dent sequences. To further improve communication with scallop fishers, we developed working tabletop models of the nine distinct equipment designs and a 30-minute video showing on-board working conditions for each equipment design.

*Involve the affected community.* A series of town meetings were held to which scallop fishers were invited. After a presentation by safety personnel that included demonstrations of accident scenarios using the nine table-top models, the scallop fishers were invited to discuss the advantages and disadvantages of each equipment design. These discussions provided extremely valuable information on how fishers perceived risks, on historical accidents and injuries remembered by meeting participants, on potential solutions to the problem at hand, and on the economic and efficiency impact of potential solutions.

Thus, through an investigative process that relies on involvement of the affected population in the formulation of prevention strategies, local knowledge can be coupled with the knowledge of safety (or public health) professionals to ensure that economic and efficiency concerns are considered early in the process of developing preventive measures. This interactive process should result in the adoption of preventive strategies that are acceptable to the affected population.

Equipment design	Dynamic capsize	Static capsize	Serious acute injury
One-wire system	3	1	0
Two-wire system	1	3	2
Two-wire/one wire on gear	0	1	1

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