## New Triage Method Considers Available Resources

**By Jeffrey Lindsey, PhD, EMT-P**

If you've ever been involved in a mass casualty incident (MCI), you know that a lot of questions need to be answered, such as: What do you do if you have eight red-tagged victims (i.e., immediates) and only two ambulances on scene? Who do you send first? What if you only have one ambulance? How do you know who will make it to the hospital?

In the past, we've had to rely on



The Sacco method has extensive resource management capabilities, allowing for "on the fly" updates.

our experience for answers, but how do we address the fact that experiences and opinions may differ widely when it comes to making these judgment calls?

A recent EMS conference was drawing to a close when Bob Waddell from ThinkSharp asked if I had a few minutes. He wanted to show me a new product, the Sacco Triage Method, that helps effectively triage patients during MCIs. Of course, I'm always looking for innovative new products, so it was a no-brainer. We ducked behind a closed door, and he handed me a small card with some information. I later found out this was the "secret recipe" for the whole process. In the next few minutes, Waddell took me through the pro-

gram, demonstrating an innovative tool for scientifically calculating the best way to triage patients at an MCI.

Named after its creator, Bill Sacco, PhD, the Sacco method is evidence-based and outcome-driven. According to Waddell, Sacco analyzed more than 100,000 patients to create his triaging method.

The Sacco method bases triage decisions on both victim conditions and available resources. The program uses a simple physiological score that predicts survival and deterioration rates of patients. The goal of the program is to maximize the number of survivors.

*The rationale:* Most treatment protocols don't change (or change very little) regardless of whether 20 or 20,000 victims are involved. Likewise, most current protocols remain the same regardless of available resources. A community with two ambulances (or emergency department beds, physicians, nurses, ORs, etc.) uses the exact same protocol as one with 10 ambulances or 100 ambulances. This lack of resource consideration leads to poor triage decisions and could potentially cost lives.

The Sacco method begins with front-end planning and the entry of available resources into a database. On scene, EMS crews compute a simple physiological score for each victim, who is tagged at that point with the proper triage status. Victims are then organized into three score groups, with similar prognoses:
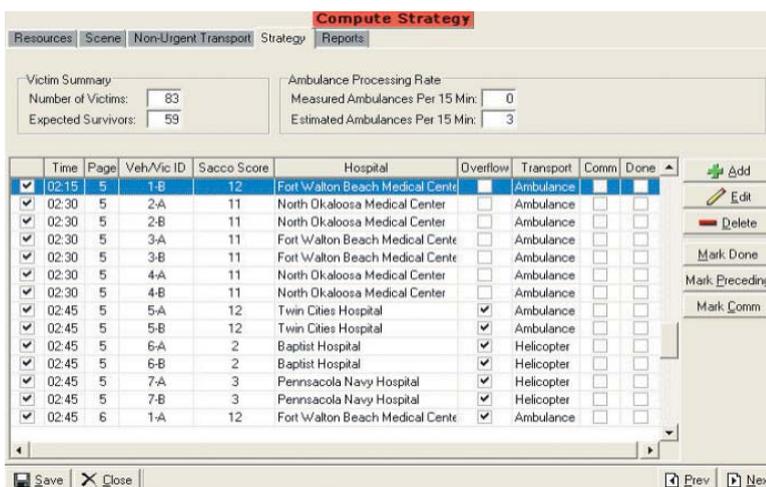
- Group 1: Low probability of survival (<35%) and high rate of deterioration.
- Group 2: Savable, but transitional with accelerating deterioration.
- Group 3: High survival probability (>90%); slow deterioration.

On-scene personnel transmit the scores to their dispatch center verbally or via PDA/wireless device, where data are combined with the pre-planned resource information. We'll look at this aspect more closely in a moment.

For blunt and penetrating trauma, the Sacco method assigns a triage score to each victim on the basis of respirations (RR), pulse (PR) and best motor response (BMR). Each measurement receives a coded value, and the scores are combined to arrive at the Sacco method-coded RPM. (See Table 1, p. 94.) Victims can be manually scored in an average of 40 seconds.

*Note:* Once the "secret recipe" (Sacco's predictive formula for survival) is applied, the above examples will each have exact survival percentages assigned. In the example, >60% would specifically be 63%. In an actual event, exact percentages are calculated for all scores.

Let's look at how this works in more detail. The total cumulative score can range from 0 to 12. As one might expect, the probability of survival declines with lower scores. Thus, patient #2 (RPM 2) is the most critical, and patient

#3 (RPM 9) is the least.

If you have adequate resources—two or more ALS ambulances on scene—the Sacco method indicates that patient #2 is the highest priority patient to be treated and transported first. If you have limited resources (one ambulance available) *and* are concerned about saving the maximum number of lives, patients #1 and #3 would be your priorities. Patient #2 would receive on-scene treatment but would be transported only when another ambulance became available. This strategy maximizes the number of survivors by having the computer consider the resources available to manage the incident, as well as patient needs.

Okaloosa (Fla.) EMS was one of the first to use the new system, and Chief Al Herndon was impressed with the trial run.

A group of individuals, including firefighter/EMTs, first responders, paramedics and nurses conducted a pre-Sacco training exercise that triaged patients using Okaloosa's current triage system. *The results:* Everyone's list of what priority to triage each patient and the order in which to transport them varied widely, according to Chief Herndon.

When the same group used common descriptors and then triaged the patients according to the Sacco method, the results were identical for each patient. When have you ever seen a group of EMS folks agree on something? Never, says Herndon. He claims that the Sacco method takes subjectivity out of the triaging process.

Okaloosa County EMS now uses the Sacco method on every trauma call they respond to, keeping crews familiar with the method. Herndon said that his crews have always done an excellent job with triage, but now they do a better, faster job using the Sacco method.

## Implementation

According to Herndon, the necessary data entry setup is quick and easy. You need a list of your hospitals, the ambulance providers in your region and helicopters available to your area. In addition, you need to list the capacities and surge capacities (e.g., how many patients they can handle during an MCI) for each hospital.

When an MCI occurs, the total communication time for determining the most effective strategy for the incident is typically less than one minute. The triage officer on scene conveys scene information to the dispatch center. In a high-tech system, this would be via computer or PDA; in a low- or no-tech system, it's accomplished via simple radio communications. The dispatcher can query the computer and quickly relay the triage strategy back to the triage officer.

The strategy presents the entire utilization and schedule of resources, including the distribution of victims by severity and hospital. You can also view a detailed list of patients arriving at each facility, plus the number of ambulances and helicopters available to support the incident.

In situations in which verbal communication is compromised or undesirable or computer technology is unavailable, a "rule-based" method can be used. This provides *rules* for triage that broadly consider patient priorities by characterizing the size of the incident. This may not be the optimal solution, but it does provide a good triage strategy.

I like how the Sacco method takes the guesswork out of triage by using a scientifically developed process to do the job. Herndon says that the consideration of resources by the Sacco method has worked well in Okaloosa County. JEMS

| TABLE 1: | Sacco Triage Method Example |
| --- | --- |

| | RR | Pulse | BMR | RPM* | Survival Rate |
| --- | --- | --- | --- | --- | --- |
| Patient 1 | 36 | 44 | WD | 6 | >60% |
| Patient 2 | 8 | 40 | None | 2 | <20% |
| Patient 3 | 28 | 48 | Obeys | 9 | >90% |

*RPM = Sum of the coded values of RR, PR, BMR*

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