

# Trial Study of the XCollar

David Sprague, Lieutenant, Berkeley Fire Department

Last year Berkeley Fire Department (BFD) approached Alameda County EMS for a trial study on a new cervical stabilization device called the XCollar. The XCollar immobilizes the cervical spine by creating a system of stabilization between the thoracic cavity and the head (anterior and posterior). Simply stated, it provides splinting above and below a suspected c-spine injury.



cervical spine stabilization

The XCollar was designed by a former Santa Barbara County firefighter/paramedic following a vehicle accident in which a patient was extricated using conventional cervical stabilization techniques and products. Unfortunately, the patient's injuries resulted in paraplegia. The incident prompted research into different methods of

With the assistance of Dr. Kidane from Alameda County EMS, BFD created a data collection form using an online collection tool. BFD captured data for 50 uses of the XCollar. Trial study findings indicated that the XCollar did appear to provide superior immobilization of the patient's spine while providing first responders a greater degree of flexibility allowing a patient's head to be immobilized in the position of comfort.

The greatest challenge Berkeley paramedics encountered during the trial study was the increased steps required to apply the XCollar. It requires a more thoughtful and engaged application than other immobilization devices. To inexperienced users, the XCollar can appear intimidating, however, an experienced user can apply the device in less than 30 seconds. The department found that investing in a robust initial and on-going training program is critical to ensure that first responders are comfortable with the application of the XCollar.

## Berkeley Fire Trial Study Results

- 50 patients (33 male/17 female)
- Ages from 10 to 94 years old
- Weights from approximately 55 to 300 pounds
- Position found: 17 seated, 18 supine, 1 prone, 4 "in position" or non-neutral, 10 other

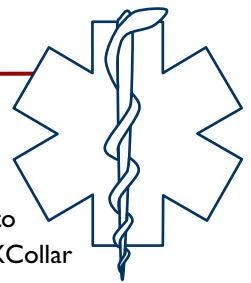
Upon analyzing the data, the department found that 90% of paramedics felt the XCollar provided a greater degree of immobilization than current products. A series of questions were asked to compare the traditional method of c-spine immobilization with the XCollar. The responses collected

from field providers are shown in the table below. Responders were asked: Compared to the current "C" Spine equipment, did the XCollar provide:

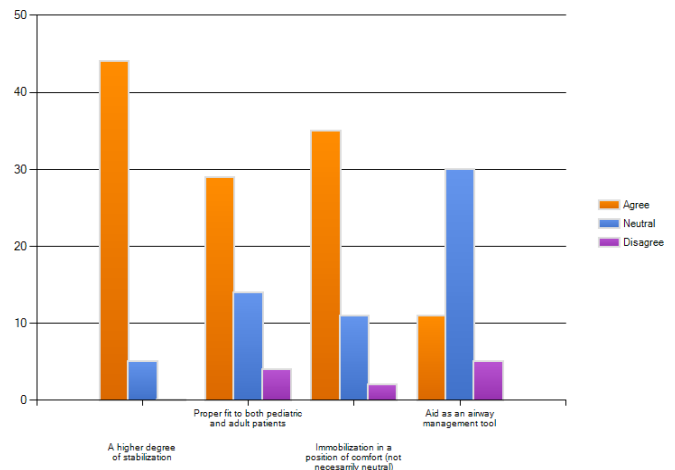
- A higher degree of stabilization?
- Proper fit to both pediatric and adult patients?
- Immobilization in a position of comfort (not necessarily neutral)?
- Aid as an airway management tool?

Based on field feedback, the department has elected to switch to the XCollar as our primary cervical stabilization device. Some of the key points in the decision to make the switch were that the XCollar:

- Immobilizes patients with less movement of the head and cervical spine.
- Replaces the pediatric and adult collars with one adjustable collar.
- Provides our paramedics the ability to splint a patient in a non-neutral position of comfort as opposed to manipulating a patient to a neutral position.
- Will soon have a head restraint system built in to the device which we hope will eliminate the need to carry a separate head bed/restraint system.



Compared to the current C-Spine equipment, did the XCollar provide:



Various other EMS agencies within Alameda County have also expressed interest in testing the XCollar, with collaborative trials planned involving Hayward, Piedmont and Camp Parks Fire Departments, and AMR. The aim is to see if Berkeley's results can be duplicated in other parts of the county, while addressing some of the concerns brought up in the initial trial survey. Assuming buy-in from a broader audience, the XCollar may be approved for county-wide use in early 2011.