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## Non-Fatal Injuries among Commercial Fishermen — Dutch Harbor, 2007–2008

### Background

Commercial fishermen experience the highest number of occupational fatalities and the second highest number of non-fatal occupational injuries compared to all other occupations in Alaska.<sup>1</sup> While targeted interventions have reduced fatalities among commercial fishermen, little is known about non-fatal occupational injury patterns in this population.<sup>2</sup> This *Bulletin* describes non-fatal injury patterns in fishermen seen at the Iliuliuk Family Health Center (IFHC), which is the primary health care facility serving workers in Dutch Harbor, Alaska.

### Methods

In 2010, the National Institute for Occupational Safety and Health conducted a manual chart review of work-related injuries among commercial fishermen seen at the IFHC during 2007–2008. Data on cases designated as occupational were extracted into a database and coded according to the Occupational Injury and Illness Classification System. Results were analyzed using SAS version 9.2.

### Results

During 2007–2008, 366 fishermen were seen at IFHC for traumatic injury. The mean age of the fishermen was 36 years (range: 17–61); additional selected characteristics of the fishermen and the non-fatal injuries they sustained are presented below (Table).

**Table. Characteristics of Non-fatal Injuries among Fishermen Seen at Iliuliuk Family Health Center — Dutch Harbor, 2007–2008 (n=366)**

Demographics Characteristics	No. (%)
Male	364 (99)
Caucasian	204 (56)
Mexican American/Hispanic	62 (17)
<b>Job Class</b>	
Processors	176 (48)
Deckhands	148 (40)
<b>Location on Vessel</b>	
On deck	106 (29)
Freezer	55 (15)
Processing areas	21 (5)
<b>Vessel Type</b>	
Catcher processor	270 (74)
Catcher only	96 (26)
<b>Gear Type</b>	
Trawler	220 (60)
Long liner	76 (21)
Pot gear	42 (11)
<b>Injury Location</b>	
Sea	239 (65)
Land (in port)	61 (17)
<b>Primary Diagnosis</b>	
Sprain/strain	82 (22)
Contusion with intact skin	71 (19)
Fracture of upper limb	35 (10)
Superficial injury unspecified	30 (8)
Open wound upper limb	21 (6)
<b>Mechanism</b>	
Contact with objects or equipment	212 (58)
Falls and slips	75 (20)
<b>Specific Agent</b>	
Frozen fish	84 (23)
Deck	26 (7)
Knife	11 (3)

Of the 366 injured fishermen seen in the clinic, 70 (19%) presented on the same day as their injury, 174 (48%) presented within 1 week, 45 (12%) presented within 8–14 days, and 29 (8%) presented within 15–30 days (time between injury and presentation was missing for 48 cases). Of the 101 (28%) fishermen who were referred to a specialist, 50 (50%) were referred to a general orthopaedist, and 18 (18%) were referred to a hand surgeon. Of the 101 fishermen who were referred to a specialist, 20 (20%) were initially seen at IFHC  $\geq 7$  days after their injury occurred.

### Discussion

The injuries sustained by the fishermen in this review were predominantly sprains/strains, contusions, or fractures of an upper limb. In the case of a severe or life-threatening injury, fishing vessels typically request a medical evacuation or cooperate with each other to transport an injured worker to treatment facilities. However, 20% of fishermen who required specialty referral for their injury were initially evaluated at IFHC  $\geq 7$  days after their injury occurred, indicating that appropriate care might have been delayed in some cases.

It is not surprising that the majority of the non-fatal injuries occurred on catcher processors, as they employ the largest number of workers and process the largest volumes of seafood relative to other vessel types. Furthermore, it is not unexpected that the largest number of injuries involved contact with objects or equipment, as fishermen on catcher processors must handle heavy frozen seafood packages once when they are initially placed into storage at sea and again when the seafood is unloaded in port. Slips and falls are also a well-known safety challenge for fishermen because they work on a moving platform that is often wet.<sup>3</sup> Fall prevention is a national priority in the United States, and it is a safety target area for most large fishing companies in Alaska.

Finally, this review is limited as it only provides basic descriptive information pertaining to non-fatal injuries among commercial fishermen seen at one clinic over a 2-year period. As such, a multi-year retrospective cohort study that examines incidence rates and risk factor comparisons would further help to improve our understanding of the epidemiology of non-fatal injuries in this occupational setting. In addition, a focused study of the seafood storage and unloading process on catcher processors and other vessel types would be helpful to better understand how to prevent contact injuries.

### Recommendations

1. Employers should conduct job safety analyses of the frozen seafood storage and unloading protocols on catcher processor vessels and other vessel types.
2. Employers should also review existing fall prevention strategies for fishermen while working on deck.
3. Vessel medical officers should receive updated specialized training in evaluation and treatment of orthopedic and soft tissue injuries in settings where definitive medical care is not available.
4. Health care providers should routinely record ample information about the circumstances that surround workplace injuries in their patients' medical charts.

### References

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2. CDC. Commercial Fishing Deaths – United States, 2000–2009. *MMWR* 2010;59:842-5.
3. Jensen OC. Non-fatal occupational fall and slip injuries among commercial fishermen analyzed by use of the NOMESCO injury registration system. *Am J Ind Med* 2000;37:637–44.