



Innovative Approaches to Worker Health Protection Among Shrimp Fishermen of the Gulf Coast Competitive Renewal 2006 – 2011

Update provided to CFIVSAC
by Jeffrey Levin, M.D, M.S.P.H.
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Collaborators:

Karen Gilmore, M.P.H.
Amanda Wickman, B.S.
Sara Shepherd, M.A.M.S.
Ann Carruth, D.N.S., R.N.
Matthew Nonnenmann, Ph.D., C.I.H.

Other Partners:

U.S. Coast Guard
Marine Safety Unit, 8th District
Area Health Education Centers
Cooperative Extension Service
Sea Grant
Other stakeholders/
volunteers

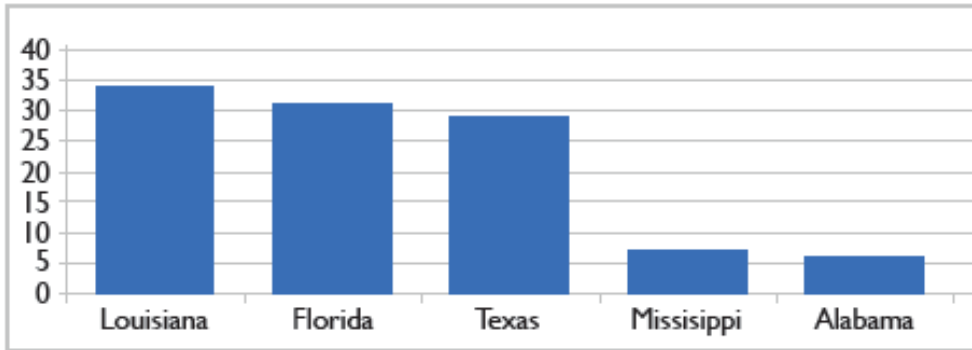


Risk Factors

- Machinery and work hazards
- Human factors
- Environment at sea

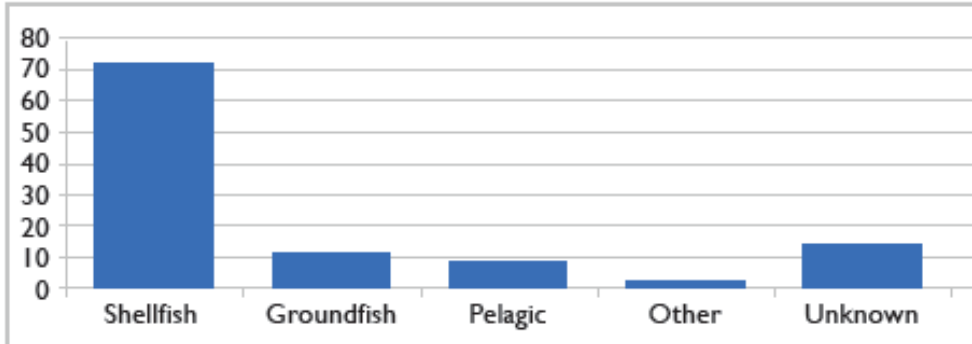


Gulf of Mexico Commercial Fishing Fatalities by State,
2000-2008 (n=107)



46% of fatalities due to
falls overboard

Gulf of Mexico Commercial Fishing Fatalities by Fishery,
2000-2008 (n=107)



Source: Lucas D, Lincoln J. U.S. commercial fishing fatalities regional summary: Gulf of Mexico. CDC/NIOSH Alaska Pacific Regional Office. Presented at NIOSH Invitational Intra/Extramural Agriculture, Forestry, and Fishing Safety and Health Workshop, Cincinnati, Ohio, August 11-12, 2009.

Background

- Less is known about non-fatal injuries and illnesses
- Behavioral factors may contribute to fatal and non-fatal outcomes



Phase I Methods

- Develop community based collaborations
- Characterize the population through survey
- Conduct focus groups to identify factors that may deter participation in training; propose solutions
- Adapt currently available educational methods and tools to design culturally responsive safety training program
- Provide community feedback



Phase I

Cultural Considerations and Training “Best Practices”

- Important cultural considerations – language, views of compulsory requirements/authority figures
- Didactic and “hands-on” exercises
 - experienced mariners as trainers
 - bi-lingual tip cards produced, may-day
 - instruction delivered in Vietnamese



Summary

- Barriers are reduced when training addresses cultural considerations (particularly language) and the expressed needs of the audience.
- Hands on training by experienced individuals appears to be effective in adult populations in cross-cultural settings.



Liên lạc bằng máy truyền tin (Radio)



- Luật truyền tin bắt buộc tài công phải lắng nghe radio khi tàu tách bến:
 - Bạn phải lắng nghe VHF radio trên đài 13 và đài 16.
 - Nếu không liên lạc được bằng radio thì phải dùng còi (kèn). Bạn bắt buộc phải biết nghĩa của còi, đặc biệt là còi báo cáo nguy hiểm



Long-term Objectives for 5 year study

- to characterize selective workplace factors and lifestyle behaviors which may contribute to morbidity and mortality among Gulf Coast shrimp fishermen (shrimpers) and
- to utilize a community-based approach to planning, implementing, and evaluating prevention and education measures directed at priority workplace factors and lifestyle behaviors as identified by stakeholders.



Aims

- Describe selected workplace factors and beliefs which may contribute to morbidity and mortality among convenience samples of Gulf Coast shrimpers in TX, LA.
- Utilize the data collected to conduct formative assessment of risk factors and develop possible strategies for prevention and education.
- Utilize a focus group, participatory approach in each of three community groups to prioritize strategies for implementation and to select a single focus strategy for each of the three geographic target areas.
- Develop and implement a culturally appropriate program plan for each of the three focus strategies.

Tools:

- Survey of work and related behavioral factors
- Noise level monitoring and audiometry
- Spirometry (and blood pressure)
- Focus groups to prioritize and select intervention strategies



Survey Question Development

Linked to Possible Intervention Strategies

(using existent tools/Theory of Planned Behavior)

- Traumatic injury (many of these questions exist from prior survey)
- Eye injuries and UV exposure
- Hearing loss
- Respiratory complaints (including smoking history and other exposures)
- Extended work/fatigue
- Use of PPE/safety equipment
- Other influences (e.g., alcohol use, fatalism, leadership)



Important Considerations

- Content validity
- Literacy level
- Translation
- Administered by trained individuals – answer questions in the primary language as necessary
- Length (number of questions, duration)
- Participation
- Consent





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Preliminary Findings

Survey (n=227) and Noise Level Monitoring



| Variable | Prevalence |
|---|------------|
| Vietnamese as primary language | >95% |
| Work perceived as somewhat to very risky | >70% |
| Working > 22 days/mo | 61% |
| Working > 12 hrs/day | 64% |
| Estimated exposures in engine range | 95-105 dBA |
| Moderate or more severe speech frequency hearing loss | 32% |
| Elevated single BP measurement | 59% |
| Mild obstruction on spirometry | 11% |

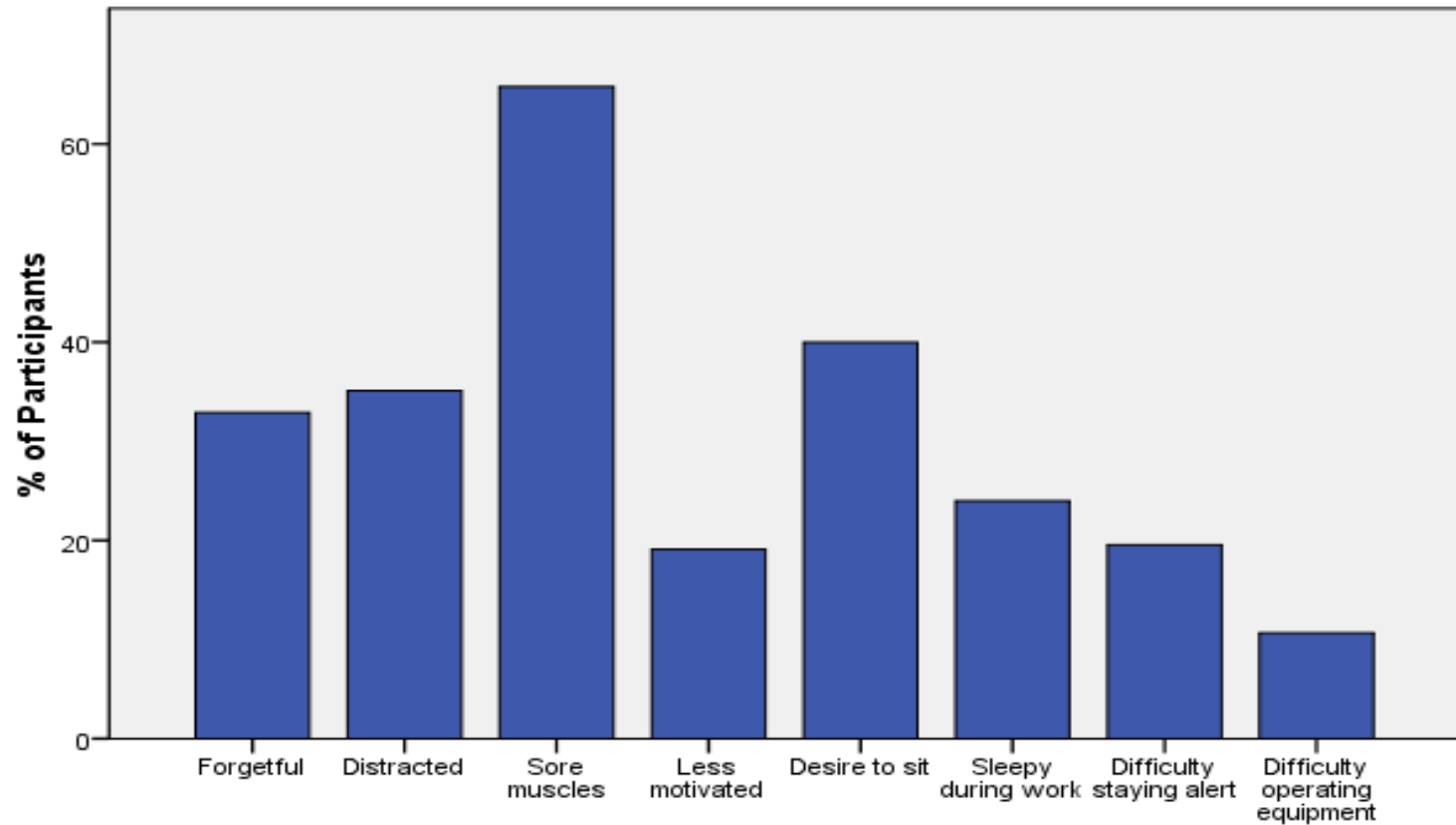
Observations from Survey and Testing

- Noise exposure is real, hearing loss is present in speech range
- Work is considered risky
- Long hours/days, inadequate sleep
- >50% with Stage 1 or greater hypertension



Work Performance Related to Sleep

During the active fishing season, have symptoms:



Elevated Perception of Risk

- Machinery equipment hazard
- Eye injury
- Fatigue
- Noise/hearing loss
- Breathing hazard
- Skin cancer



Focus Group Selected Intervention Areas

- Houston/Palacios – noise/hearing
- Belle Chase – winch safety awareness
- Abbeville – fatigue



Advisory Group Input

- Focus group summaries and selected interventions
- Hierarchy of safety controls – engineering, administrative/work practice, PPE
- Discuss intervention materials for each location and strategies for dissemination/community promotion
- Methods – training, visual aids, checklists, messages

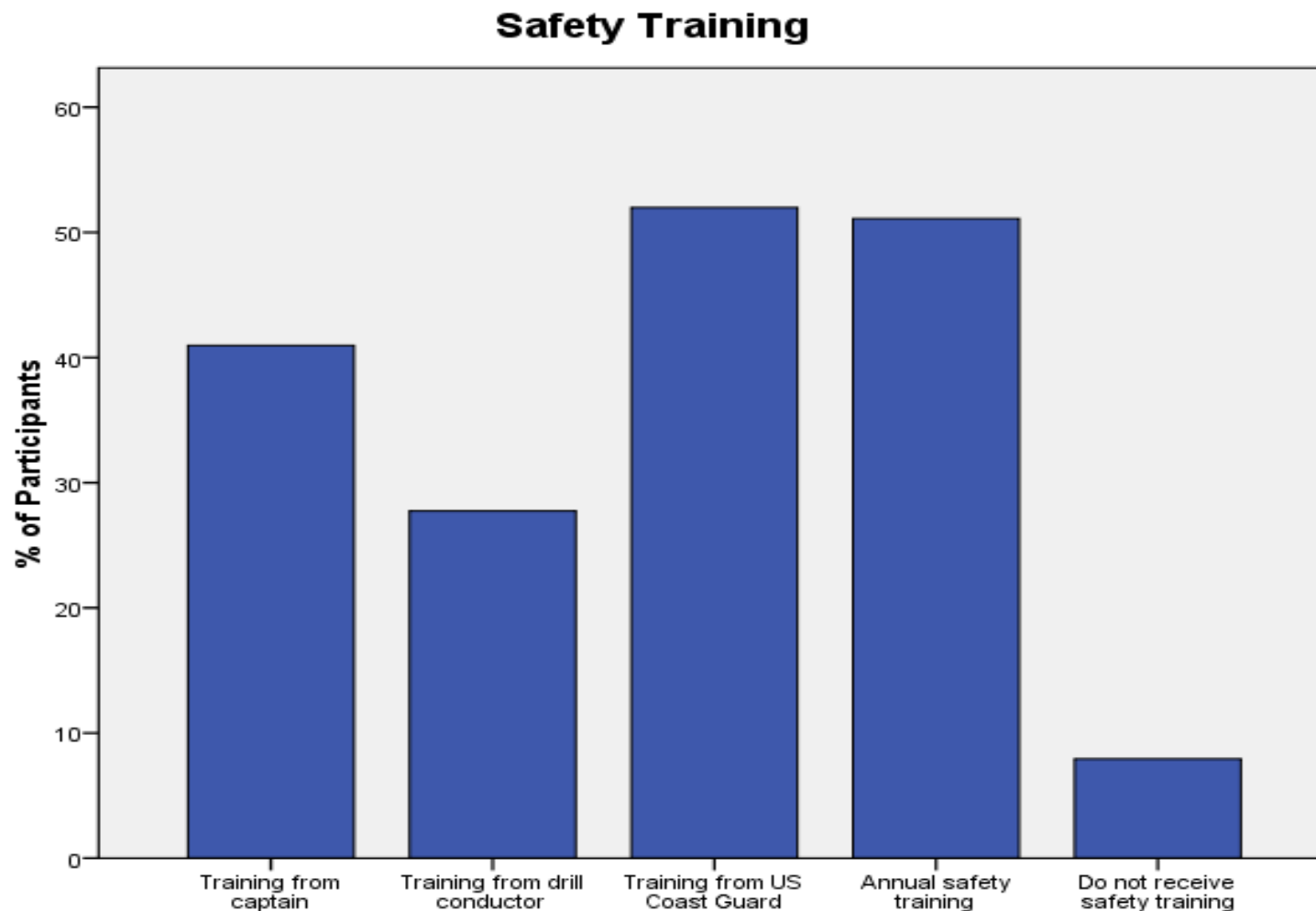


Training as a Recruitment Tool

- Encouraged by opinion leaders
- Recognized as necessary and perceived as important - desire to emphasize prevention of work-related injuries/fatalities
- Value added, low/no cost
- More effective (recruitment) if delivered to meet the “needs” of the community in the primary language of the audience



Desired Safety Training













Community Training Meetings Spring, 2010

- Focus on group specific intervention
- Ship-to-ship communication/MayDay simulation
- Damage control kit
- Blood pressure information
- First aid – choking, CPR, bleeding, fractures, etc.



Intervention Theory

- Diffusion of Innovations by Everett Rogers
 - innovative idea or concept is communicated through certain channels over time among the members of a social group and its penetration is dependent upon decisions of other members of the group, often in a leadership role



Definition*

Opinion leadership – “the degree to which an individual is able to influence other individual’s attitudes or overt behavior informally in a desired way with relative frequency.”

*Rogers EM. Diffusion of Innovations, 5th ed. New York: Free Press, 2003.



DANGER

**USE HEARING
PROTECTION
IN ENGINE
ROOM**



Hearing/Noise

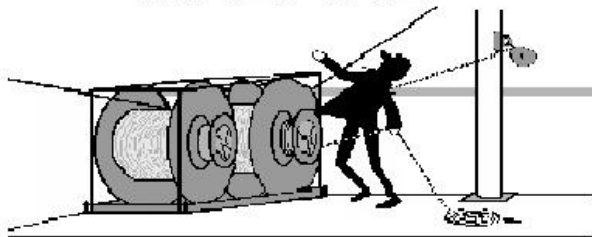
WORK-RELATED HEARING LOSS



1. Noise-induced hearing loss is 100% preventable.
2. Hearing loss can be permanent and irreversible.
3. It's important to protect the hearing that you have left.
4. Hearing protectors lower the noise level of your equipment & of verbal communication; it won't eliminate it.
5. If you have to raise your voice to talk to someone who is an arm's length away; the noise is likely hazardous.

! DANGER

**ENTANGLEMENT
HAZARD**



PINCH POINT

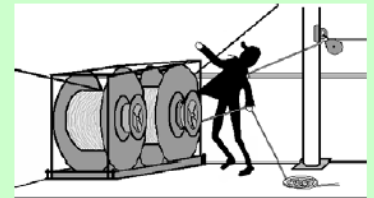


Winch Safety Awareness

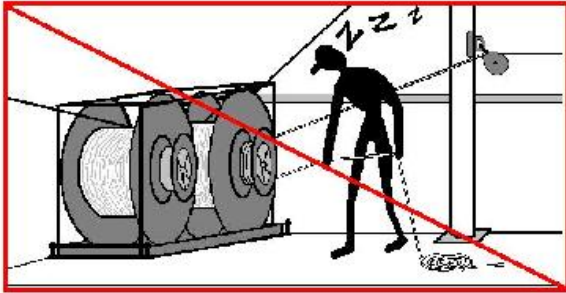
DECK WINCH SAFETY TIPS



1. Keep your eyes on the winch.
2. Operate with caution when alone.
3. Agree on a key word to shout out if in trouble.
4. Run regular safety drills.
5. Remove loose fitting clothing before operating winch.
6. Turn the winch off before untangling line.



! DANGER



**DON'T WORK WHILE
FATIGUED
GET ADEQUATE REST**

Fatigue

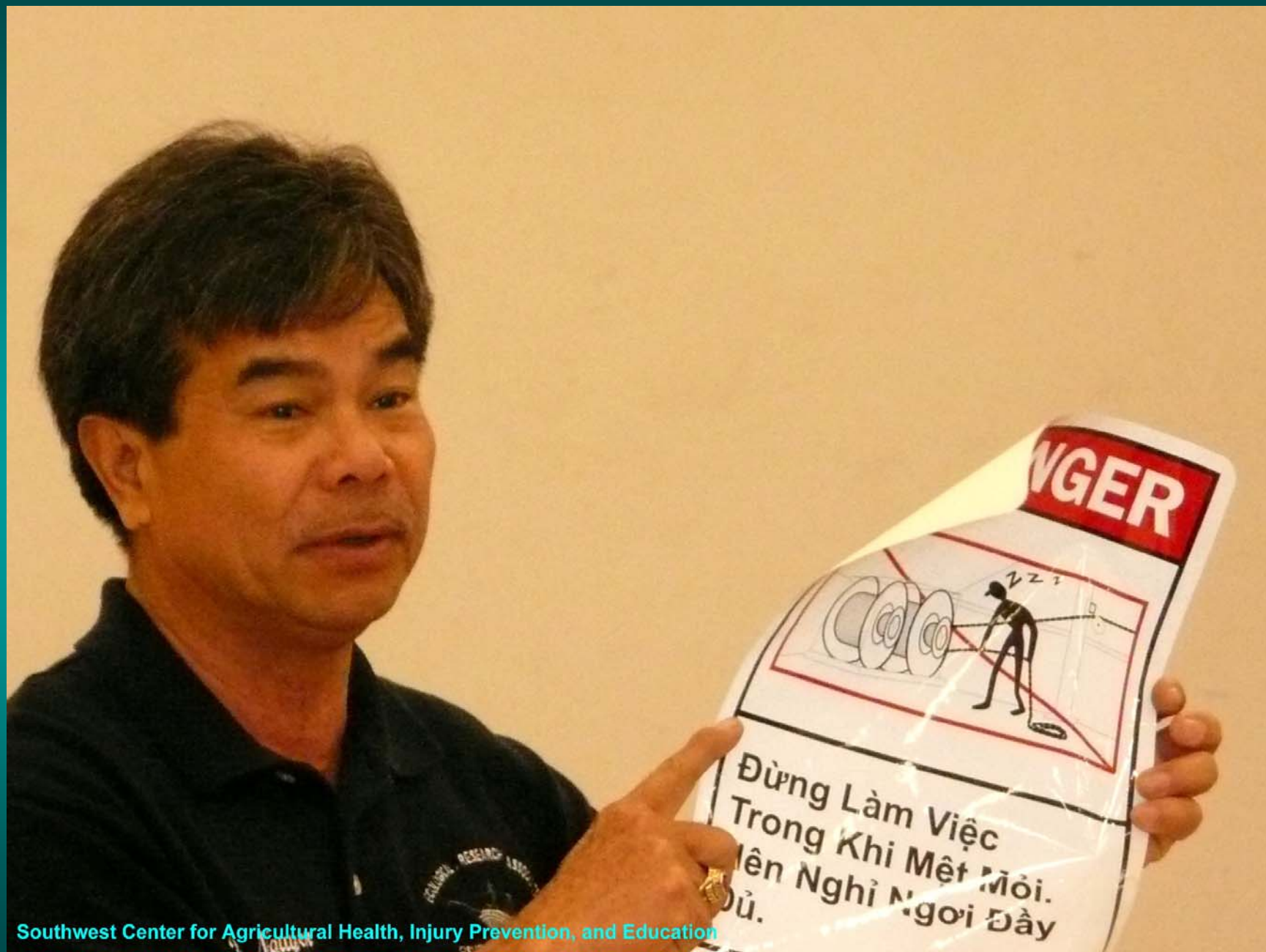
TIPS TO FIGHT FATIGUE



1. Get moving.
2. Vary your routine.
3. Avoid simple carbohydrates. (soft drinks, chips, candy)
4. Eat complex carbohydrates. (healthy granola bars, bagels)
5. Check your iron levels. (Eat fish, eggs, chicken, fortified cereals, and beans)
6. Maintain a healthy weight.
7. Drink plenty of water.
8. Improve your sleeping conditions.
9. Check for other medical problems.



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Year 4-5 Activities/Challenges

- Continued dissemination of messages – dockside, PSAs, community training meetings
- Community trust and key partnerships
- Continued language barriers/cultural factors
- Economic and other influences limiting participation – diesel costs, hurricanes, oil spills?
- Repeat survey Year 5



Survey/Training at Port Isabel, TX

February/April 2010

- 39 surveys, 100% Latino males
- 50% speak little or no English
- Consider job risky or very risky = 82%
- Favor a dockside exam at time of license renewal = 85%
- Prefer hands-on training = 67%
- Fish more than 200 days per year = 76%; fish 12 or more hours per day = 37%
- Training conducted in Spanish (n>40)
- Hands-on
- Pre-/post-test, literacy appropriate (select the proper image), Spanish/English
- End of session evaluation





FISHING VESSEL SAFETY SURVEY



Southwest Agricultural Center
UT Health Center at Tyler



Cómo usar un extinguidor de incendios



Es fácil recordarse de cómo usar un extinguidor de incendios si usted se acuerda de la siguiente abreviatura: P A S S

Jalar
Apuntar
Apretar
Barrer

- Pull
- Aim
- Squeeze
- Sweep

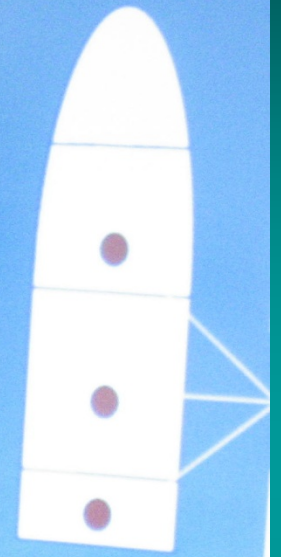


ALARMAS PARA EMERGENCIAS

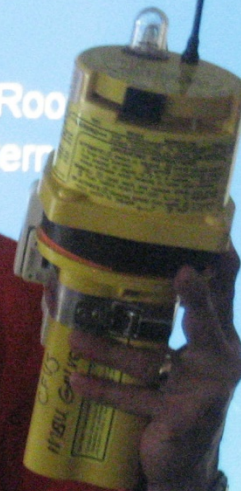
ALARMAS



Altavoz y Luz Roja
en el Cuarto de Motor



- **Importante:** Las alertas de socorro no registradas pueden tardar hasta 2 horas más de tiempo en llegar a la Guardia Costas (Coast Guard) e innecesariamente le puede costar la vida a varios pescadores.
- Regístrese con la Oficina de NOAA, FB4, Room 5200 Auth Road, Suitland, Maryland por internet www.beaconregistration.noaa.gov
- ¡Aviso! La activación de emergencia sea de emergencia







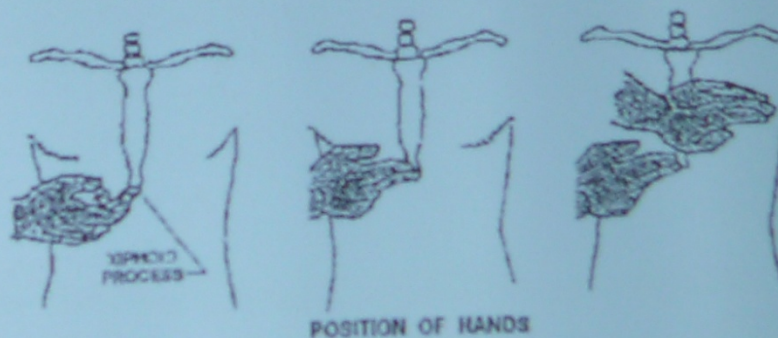
Signo Universal de Ahogo



Compresiones Abdominales



Respiración de boca a boca



**Posición de Manos para las
Compresiones en el Pecho**























Total Trained to Date

2004 – March 2010

$n = 535$

(including repeats,
not including Port Isabel)

Questions and Discussion

