

# Safety in Home Care

Promoting safety and health in the  
home care industry

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# Acknowledgements

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# Safe Home Care Research Team

**INS NIT 2015**  
National Academy of Infusion Therapy  
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# Learning objectives

- To identify safety challenges in home health care (HHC)
  - Real-life scenarios faced by HHC nurses
  - Other relevant safety situations in HHC
- To demonstrate tools to support safety assessments and training

# Why safety and health in home care?

- Home care (HC) jobs are among fastest growing occupations in the United States
- Advances in technology making complex care possible at home
- Safety and health promotion increases recruitment & retention
- The Joint Commission and other reports show that HC worker safety is closely linked to patient/client safety & ability to deliver high quality care

# Recent 2015 peer-reviewed publications

OEM Online First, published on July 24, 2015 as 10.1136/oemed-2015-103031

Workplace



ORIGINAL ARTICLE

## Occupational health of home care aides: results of the safe home care survey

Margaret M Quinn,<sup>1</sup> Pia K Markkanen,<sup>1</sup> Catherine J Galligan,<sup>1</sup> Susan R Sama,<sup>1</sup> David Kriebel,<sup>1</sup> Rebecca J Gore,<sup>1</sup> Natalie M Brouillette,<sup>1</sup> Daniel Okyere,<sup>1</sup> Chuan Sun,<sup>1</sup> Laura Punnett,<sup>1</sup> Angela K Laramie,<sup>2</sup> Letitia Davis<sup>2</sup>

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### ABSTRACT

**Objectives** In countries with ageing populations, home care (HC) aides are among the fastest growing jobs. There are few quantitative studies of HC occupational safety and health (OSH) conditions. The objectives of this study were to: (1) assess quantitatively the OSH hazards and benefits for a wide range of HC working conditions, and (2) compare OSH experiences of HC aides who are employed via different medical and social services systems in Massachusetts, USA.

**Methods** HC aides were recruited for a survey via agencies that employ aides and schedule their visits with

### What this paper adds

- Home care (HC) aides are a largely invisible and yet essential workforce needed to meet the care demands of an ageing population. Although this is one of the fastest growing occupations, there are limited quantitative data describing its occupational safety and health (OSH) experiences to provide an evidence base for policy-setting.

NEW SOLUTIONS, Vol. 24(4) 535-554, 2015

### Features

## A GROWING FIRE HAZARD CONCERN IN COMMUNITIES: HOME OXYGEN THERAPY AND CONTINUED SMOKING HABITS

CATHERINE J. GALLIGAN  
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### ABSTRACT

The Safe Home Care Project investigated both qualitatively and quantitatively a range of occupational safety and health hazards, as well as injury and illness prevention practices, among home care aides in Massachusetts. This article reports on a hazard identified by aides during the study's initial focus groups: smoking by home care clients on long-term oxygen therapy. Following the qualitative phase we conducted a cross-sectional survey among 1,249 aides and found that medical oxygen was present in 9 percent of aide visits (314 of aides' 3,484 recent client visits) and that 25 percent of clients on oxygen therapy were described as smokers. Based on our findings, the Board of Health in a local town conducted a pilot study to address fire hazards related to medical oxygen. Medical oxygen combined with smoking or other sources of ignition is a serious fire and explosion hazard that threatens not only workers who visit homes but also communities.

Markkanen et al. BMC Public Health (2015) 15:359  
 DOI 10.1186/s12889-015-1673-9



RESEARCH ARTICLE

Open Access

## Understanding sharps injuries in home healthcare: The Safe Home Care qualitative methods study to identify pathways for injury prevention

Pia Markkanen<sup>1</sup>, Catherine Galligan<sup>1</sup>, Angela Laramie<sup>2</sup>, June Fisher<sup>3</sup>, Susan Sama<sup>1</sup> and Margaret Quinn<sup>1</sup>

### Abstract

**Background:** Home healthcare is one of the fastest growing sectors in the United States. Percutaneous injuries from sharp medical devices (sharps) are a source of bloodborne pathogen infections among home healthcare workers and community members. Sharps use and disposal practices in the home are highly variable and there is no comprehensive analysis of the system of sharps procurement, use and disposal in home healthcare. This gap is a barrier to effective public health interventions. The objectives of this study were to i) identify the full range of pathways by which sharps enter and exit the home, stakeholders involved, and barriers for using sharps with injury prevention features; and ii) assess the leverage points for preventive interventions.

**Methods:** This study employed qualitative research methods to develop two systems maps of the use of sharps and prevention of sharps injuries in home healthcare. Twenty-six in-depth interview sessions were conducted including home healthcare agency clinicians, public health practitioners, sharps device manufacturers, injury prevention advocates, pharmacists and others. Interview transcripts were audio-recorded and analyzed thematically using NVIVO qualitative research analysis software. Analysis of supporting archival material also was conducted. All findings guided development of the two maps.

**Results:** Sharps enter the home via multiple complex pathways involving home healthcare providers and home users. The providers reported using sharps with injury prevention features. However, home users' sharps selection had injury prevention features and sharps were commonly re-used for convenience and cost-savings. Improperly discarded sharps present hazards to caregivers, waste handlers, and community members. The most effective intervention potential exists at the beginning of the sharps systems maps where interventions can eliminate or minimize sharps injuries, in particular with needleless treatment methods and sharps with injury prevention features. Manufacturers and insurance providers can improve safety with more affordable and accessible sharps with injury prevention features for home users. Sharps disposal campaigns, free-of-charge disposal containers, and convenient disposal options remain essential.

**Conclusions:** Sharps injuries are preventable through public health actions that promote needleless treatment methods, sharps with injury prevention features, and safe disposal practices. Communication about hazards regarding sharps is needed for all home healthcare stakeholders.

# Source of scenarios: UMASS Lowell NIOSH-funded HHC Projects

- **Project SHARRP, 2004-2009**  
(Safe Home Care and Risk Reduction for Providers)  
Sharps injuries and blood exposures in HHC in Massachusetts
- **Safe Home Care Project, 2010-2014**  
OSH hazards & promising practices in HHC
- **Safe Cleaning and Disinfection Project, 2014** (on-going)  
Assessing and improving cleaning & disinfection in HHC

Visit our website: [www.uml.edu/safehc](http://www.uml.edu/safehc)



# Background: Project SHARRP's Survey (2008)

Annual incidence rate  
Injuries/exposures during the past 12 months, per 100 FTE

∴

	<b>Nurses (n=787)</b>	<b>Aides (n=282)</b>
Sharps injuries	5.1	1.0
Other blood/body fluid exposures	6.3	6.4

Source: Quinn, Markkanen, Galligan et al. (2009).  
Am J Pub Health, Vol 99 (S3):S710-S717

# HHC injuries in workers' compensation reports among HHC providers

- Back injuries, back pain, other musculoskeletal disorders
- Slips, trips, and falls
- Driving incidents
- Sharps injuries

# Being a HHC nurse: Rewarding but grueling

*“It’s a very rewarding job, but it is, as one of my friends said to me early on . . . that’s a grueling kind of job. . . . It’s tough because there are so many demands. . . . if you run into trouble, it’s not like you can yell to the person down the hall. . . . In home care it might be 12 calls and another visit or a visit to the emergency room, so those kinds of problems sometimes are difficult for nurses to manage because of the time restraints and the productivity restraints you have in home care.”*

-- Project SHARRP interviewee, IV-certified HHC nurse

# Scenario 1: Midline IV procedure on a kitchen sink

- Who: IV-certified HHC nurse
- Task: Replacing dressing on patient's leg and placing an midline IV (PICC) for antibiotic medication
- Setting: Patient's home was cluttered, no table to use, garbage piled up
- After finishing the dressing, the nurse determined that the situation was not safe for placing the PICC line, however, the patient needed the antibiotic medication. The patient indicated that the kitchen sink was the cleanest place in the house.

# Scenario 1 cont'd

*“The side of his kitchen sink. So it took me about a half hour to be creative, create a safe little space, a space to dispose of my sharps immediately and how I would do it to insert that PICC. And I used his kitchen sink of course and made sure it was safe but I was very angry that the hospital sent him home knowing that he was going home to that situation and that when they could do it in the hospital safer.”*

-- Project SHARRP focus group, IV-certified HHC nurse

Source: Markkanen, Quinn, Galligan et al. (2007). *There's no place like home: A qualitative study of the working conditions of home healthcare providers.* JOEM, Vol. 49(3), pp.327-337.

# Scenario 2: MS patient on IV

- Who: IV-certified HHC nurse
- Task: Visit to a very debilitated multiple sclerosis (MS) patient recently discharged from the hospital with an IV line
- The nurse attempts to start an IV but the line was in poor condition and attempts to re-insert the line were unsuccessful. Both nurse and patient get frustrated. The nurse says “I'm done”. The patient does not want to go back to the hospital and implores: “ Please, please, please don't go”. Then, the nurse is stuck with a dirty needle.

# Scenario 2 cont'd

*“ . . . I have no idea what happened but I was stuck with a dirty needle. I just can't remember because during that time you're so frustrated of not being able to complete your job and with her saying please, I don't want to go to the hospital and I think I was trying to, I pulled the dirty needle out and then I rest it on something, picked it back up, forget that it wasn't retracted and then I got stuck at some point and I can't remember the details.”*

-- Project SHARRP focus group, IV-certified HHC nurse

# Scenario 3: Sharps injury near-miss when de-accessing IV

- Who: An IV-certified HHC nurse
- Task: De-accessing a patient's Portacath -- a needle without a safety feature.
- The patient refused to lie down or remove her shirt, which was awkwardly pulled to the side. The nurse was working within a limited area and in a tighter space than she wanted to be. She pulled the needle out effectively however it rebounded and punctured the side of the glove, just missing her finger.



# Scenario 3 cont'd

*“ . . . you just feel the snag on the glove and it was like oh, man, that was too close for comfort there. I should not have done that. I should have had her pull that sleeve down more. I should have maybe had her in a recliner or lying down so that she wasn't sitting up in the chair where you tend to move a little bit. And I, myself, probably was not in the best position as I could have been in.”*

-- Project SHARRP focus group, IV-certified HHC nurse

# Scenario 4: Family member passing out

*“I've started an IV or done a venipuncture on somebody and they're fine but the person sitting in the chair passes out. Now, I have this patient and I have the husband on the floor, you know? If I had made him go to the living room and not watch me he wouldn't have been on the floor. So I learned the hard way, clear the room.”*

-- Project SHARRP focus group, IV-certified HHC nurse

# Scenario 5: Parrot joins the blood draw. . . and other distractions

*“I've had parrots fly and land on my head – they have claws, they hurt. Land on my head, walk right down my arm as I have my needle in the guy's vein drawing his blood . . . I'm not afraid of [parrots], I have parrots myself, but I know what danger they can do. So clear the room, lock up the animals, lock up the kids.”*

-- Project SHARRP focus group, IV-certified HHC nurse

# Scenario 6: Sharps injury during blood draw

- Who: HHC nurse
- Task: Drawing blood from elderly dementia patient.
- There was no surface to rest the patient's arm. The patient held her arm out and the nurse got the tourniquet on and started drawing blood. The nurse removed the tourniquet, which fell to the floor. The patient grabbed for the tourniquet and bumped the nurse's hand just as the needle was being removed. The used needle stuck the nurse's finger.

# Scenario 7: Sharps containers

*“[Sharps containers] are leak proof and a screw on cap. And they're only as good as if you screw the cap on... And the clinicians did not screw the cap on. They just placed it on. . . .”*

*“We have a side pouch that hangs off the clinician bag and it zips and that keeps it upright... It can't be on its side. It has to be upright. So it's supposed to be always contained in this pouch. And people weren't doing that either. They were just putting it wherever. So it's not going to be leak proof if it's on its side and not in the pouch.”*

- Safe Home Care Project interview, HHC agency manager

# Scenario 8: Visiting challenging neighborhoods

- Who: HHC nurse
- Task: visiting a young male patient discharged from the hospital after a bowel resection.
- In the home, there was no electricity, no heat, no hot water. The nurse knew up front that the patient had financial issues and the social worker also met the nurse in the patient's home.

## Scenario 8: Cont'd

*“[The social worker] encouraged me that you need to leave now . . . we left . . . and found seven cruisers around our cars and a man laying face down on the sidewalk with blood coming from his head, handcuffed with a policeman standing on his back and a paddy wagon. And then I never went back there without an escort. . . .And now I recognize the areas that you need an escort and my manager was very helpful and actually co-visited with me until the situation improved.”*

-- Safe Home Care Project focus group, HHC nurse

# Scenario 9: Back pain/injuries in home care

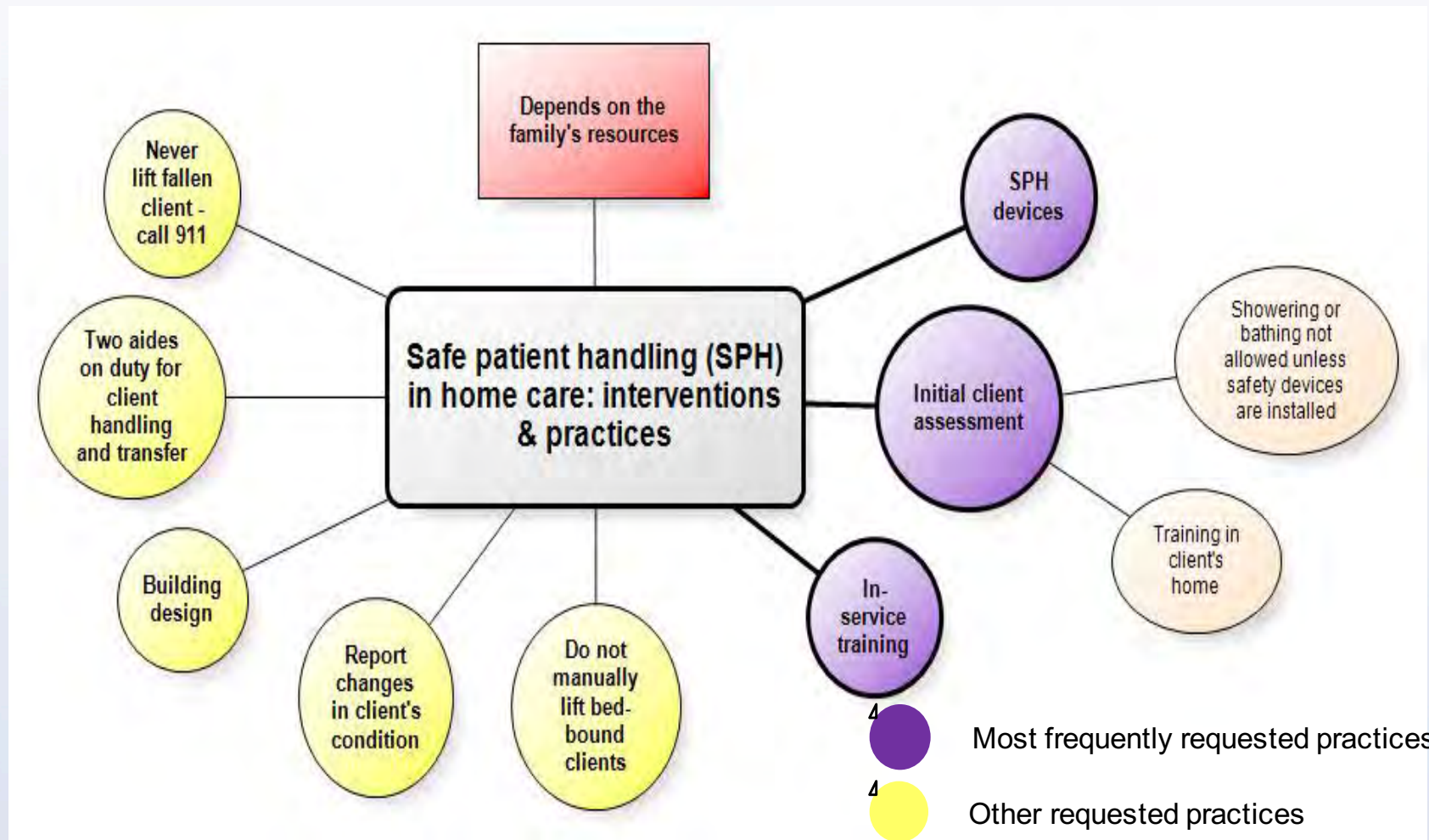
*“She [client] was like 400 pounds ... And I was the only one that was doing the lady. And she had a Hoyer lift. So I had to go in the morning, put her in the Hoyer lift, wash her, give her breakfast, everything by myself. And I wanted to be too good, and I never complained. By the time I complained three months after, my back was destroyed....I should have said something sooner. For me to be so good, I ended up with a very bad back. I still, my back is not the same.”*

-- Safe Home Care Project Focus Group, home care aide



# Patient handling in home care (2012):

Focus groups of home care aides & interviews of agency supervisors



# Scenario 10: Patient handling

*“I have a private client I take care of who's ALS...quadriplegic. ... I kept saying, I need a shower chair. I can't do this. Well, the day came, I almost dropped him three times in that shower. And that's when he said, oh, maybe I need a shower chair. And he got one. And so now showers with him, I take him, I put him in the shower chair, and give him a shower. And that's it. So it's much easier.”*

-- Safe Home Care Project Focus Group, home care aide

Source: Markkanen, Quinn, Galligan et al. (2014). *Characterizing the Nature of Home Care Work and Occupational Hazards: A Developmental Intervention Study*. Am J Ind Med. Vol 57 (4), 445–457.

# Safe Home Care Survey results:

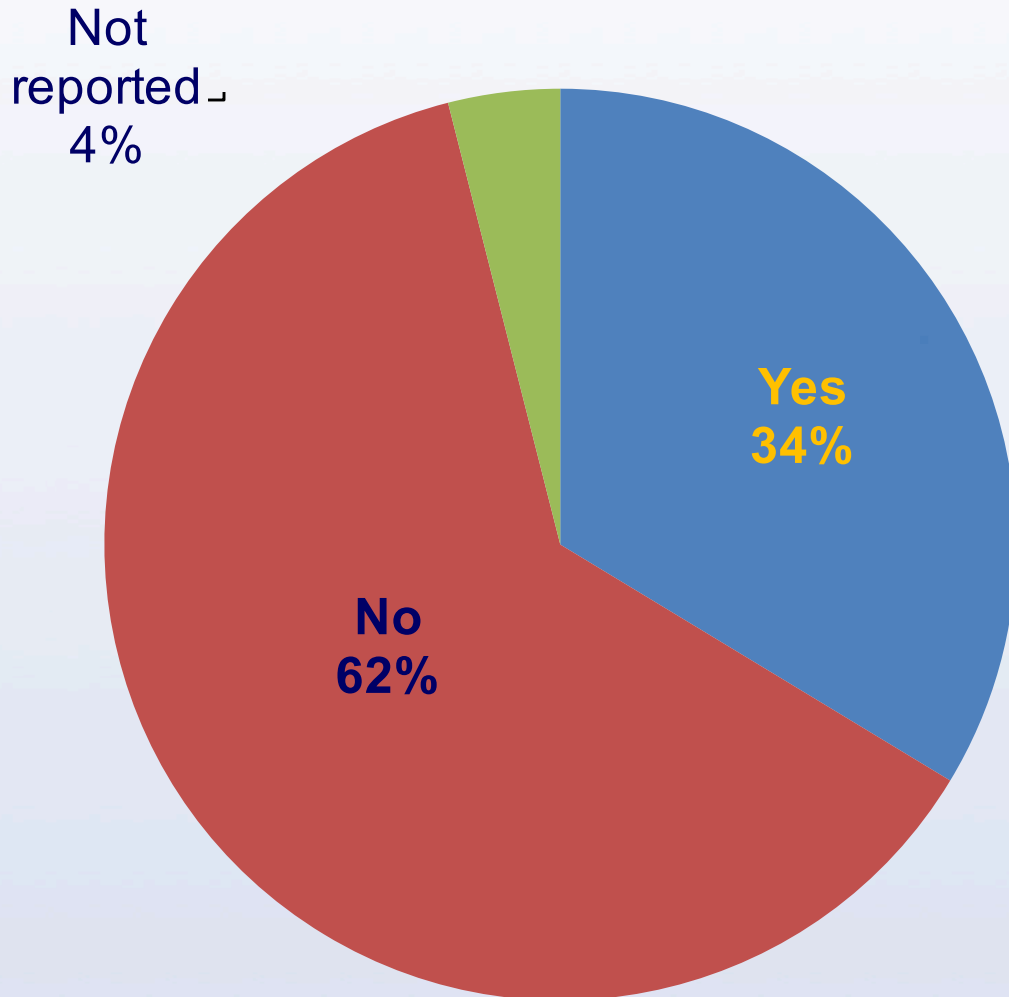
11% of all home care aides reported a job-related injury or pain serious enough for lost work time or need for medical care (past 12 months)\*

•

<b>Injury due to (most commonly reported):</b>	<b>% of reports</b>
<b>Handling client</b>	<b>17%</b>
<b>Slips, trips, falls outside the home</b>	<b>16%</b>
<b>Slips, trips, falls inside the home</b>	<b>11%</b>
<b>Traffic accident</b>	<b>11%</b>

\* Of 1,249 aides who completed the survey, 140 of them reported serious injury/pain

# One third (1/3) of all aides reported back pain in the past 12 months



- Of those with low back pain:
- 59% experience pain once > a week or more
  - 23% have pain daily
  - 76% perceive pain related to their home care work
  - 68% take medication for the pain

Source: Quinn, Markkanen, Galligan et al. (2015). *Occupational Health of Home Care Aides: Results of the Safe Home Care Survey*. *Occ Env Med*. Epub ahead of print. July 24, 2015.

# Case 11: Oxygen therapy and smoking

*“I have a client that is on oxygen and she smokes while she has it on. She doesn’t want to stop, she has had social workers, nurses, everybody you can think of going in there to tell her to stop. I actually see sparks on her nose. So now, when I go in I just tell her, you can’t smoke. Some days I’m there an hour and a half, some days two hours. So she has to go two hours without smoking a cigarette . . . .”*

— Safe Home Care Project focus group, home care aide

Source: Galligan, Markkanen, Fantasia et al. *A Growing Fire Hazard Concern in Communities: Home Oxygen Therapy and Continued Smoking Habits*. (2015) *New Solutions*. Vol. 24(4) 535-554

# Basis for safety & health interventions

- Patient/client home assessment
- Training
  - Orientation
  - In-service/ continuing ed.
  - Online training
  - Staff meetings
- Company safety committee(s)
- Communication practices

# Safety assessment in the home

- CMS-OASIS mechanism
  - How to incorporate effectively safety and health aspects for HHC nurses and aides
- NIOSH tools
- Checklists
  - By Dr. Gershon et al.

## NIOSH HAZARD REVIEW

# Occupational Hazards in Home Healthcare



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health



Available at:

<http://www.cdc.gov/niosh/docs/2010-125/>

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## Caring for Yourself While Caring for Others



**Practical Tips for  
Homecare Workers**

**STAY SAFE  
AT WORK**

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health



Available at:

<http://www.cdc.gov/niosh/docs/2015-102/default.html>

- Handbook
- 7-module training curriculum
  - Trainers guide
  - Presentations
  - Participant handouts

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### Household Safety Checklist

Today's Date: \_\_\_\_\_

Did your patient sign the Consent Form:  Yes      What time did you start the survey? \_\_\_\_\_

**A. Information on your patient:**

1. Age: \_\_\_\_\_
2. Gender (M/F): \_\_\_\_\_
3. Can your patient walk without help (e.g., a person or thing)?  Yes  No
4. What is your patient's overall health status (circle):    Poor    Fair    Good    Excellent
5. How many people live in the home: \_\_\_\_\_ Please list them: \_\_\_\_\_
6. Do you know the medicines (prescription & nonprescription) your patient takes daily?  Yes  No  N/A
7. How does your patient keep track of their medicines now?
  - "Pre-poured" or placed in a pillbox (see picture)
  - Medicines lined up
  - Other method
  - No method to keep track
8. Does patient keep any medicine in the home that they are no longer taking?  Yes  No
9. Does the patient use a hearing aid?  Yes  No



**B. Please check if any of these hazardous conditions or safety risks ARE found in your patient's home:**

<input type="checkbox"/> 10. Poor lighting 	<input type="checkbox"/> 13. Mold or fungus 
<input type="checkbox"/> 11. Loose or worn-out rugs or carpets 	<input type="checkbox"/> 14. Dangerous space heater (uses flammables) 
<input type="checkbox"/> 12. Uneven or slippery floors 	<input type="checkbox"/> 15. Dangerous electrical cords (easily tripped over, overloaded outlets, damaged cords) 

Gershon R. et al (2012). *Safety in the home healthcare sector: development of a new household safety checklist.* J Patient Saf. Vol. 8(2): pp. 51-59.

Safe Home Care | UMass x Cleaning for Consumers v x

madirectcare.com/online-learning/cleaning-for-consumers-with-asthma

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Available at:

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# Conclusions

- HCC nurses and aides have substantial OSH risks, similar to nurses and aides in nursing homes and other healthcare institutions
  - Home-based care settings are less controlled work environments than facility-based care settings
  - Work in isolation
- Need to evaluate existing & new interventions
- Implement interventions while promoting positive job dimensions
  - Job autonomy & flexibility
  - Ability to develop caring relationships

# Thank you!

For more information:

[www.uml.edu/SafeHC](http://www.uml.edu/SafeHC)



## Safe Home Care and Hospitals

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Research Team

## Safe Home Care

Research Areas

Safe Home Care Resources

Other Resources

Sustainable Hospitals

## Safe Home Care

### SAFE HOME CARE

The UMass Lowell Safe Home Care Program (grant number R01OH008229) has been funded since 2004 by the National Institute for Occupational Safety and Health (NIOSH). The earliest research focused on sharps injuries and other blood exposures in home healthcare and expanded in 2010 to investigate a broad range of occupational hazards and good practices. More recently (in 2014), NIOSH funded Safe Home Care to develop scientific evidence to guide the home care industry on effective and safe cleaning & disinfection products and practices. The Research Team partners with home care industry stakeholders, such as private home care agencies, home care industry associations, labor unions, and government agencies.



### Why Home Care

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