Aging Populations, Independent Living, Home Health Care, Safety, and the Residential Environment

Presented by:
Amanda Kimball
Fire Protection Research Foundation
Robert Solomon, Jonathan Hart, Ken Holland
National Fire Protection Association
Agenda

• Introduction – Amanda Kimball
• Role of Codes, Standards, and Regulations – Robert Solomon
• NFPA 99 and Durable Medical Equipment (DME) – Jonathan Hart
• EMS Perspective and Mobile Integrated Health Care/Community Paramedicine (MIH/CP) – Ken Holland
• Outcomes from Foundation/NFPA 2015 Workshop – Amanda Kimball
Introduction

Amanda Kimball, P.E. - Fire Protection Research Foundation
• Average age of people living independently is rising
• Health care delivery is changing
• Medical and health technologies and care services available to those remaining in their homes is growing
• What does this mean for fire and life safety?
Research Foundation Summit

• Research Foundation worked with NFPA and Rothschild Foundation to bring together leaders in the residential, health care, independent living and safety communities to discuss the vision for the future of safe living in an independent environment.

• Sixty-five stakeholders from various groups including the medical device community, home health care, fire service, EMS, fire prevention/education, research, and others participated in a one-day summit.
Keynote: Emerging Trends for Aging in Place – Robert Mayer, The Rothschild Foundation

Health Care Technology Moves into the Home: Challenges and Opportunities – Marilyn Neder Flack, AAMI Foundation

ASPR’s HHS emPOWER Map – Kristen Finne, HHS

Federal Resources on Access and Functional Needs in the Home – Kristen Finne

Panel Presentation – Home Health and Emergency Services – Kindred at Home, Medstar, and Orange County

Panel Presentation – Education and Prevention – NFPA, NC Baptist Aging Ministry, and Red Cross

Current Status of the NFPA Codes and Standards

Roundtable Discussion on Making Independent Living Safe
Role of Codes, Standards, and Regulations

Robert Solomon, P.E. - NFPA
Robert (Rob) Mayer
Today’s Continuum of Care.
Most appropriate care in the most appropriate setting.

Pre-Acute Care
- Ambulatory Procedure Center
- Diagnostic Imaging Center
- Urgent Care Center
- Physician Offices/Clinics
- Retail Pharmacy
- Wellness & Fitness Center
- Home

Acute Care
- Emergency Department
- Hospital
- Inpatient Rehabilitation
- Outpatient Rehabilitation
- Extended Care Facility
- Skilled Nursing Facility
- Home Health and Hospice

Post-Acute Care
- Home

Independent—because
What Do We Regulate and How Do We Regulate it?

- Medical Equipment and Systems-NFPA 99
- Occupancies-NFPA 101
- First Responder Efforts
- Federal Programs: HHS/CMS
- Accreditation Programs: TJC, DNV, HFAP
- AAMI, ASHRAE
- SHAs
- Local/state regulations
Some Current Challenges

- *Residential Board and Care
  - Age independent
  - Blends a mix of independence and personal care services (ADLA)
  - 24 hour staffing
  - Licensed as assisted living, group home, ICF/IID
- *Long Term/Nursing Home Care
  - Age independent
  - Not chronic medical care
  - 24 hour staffing
  - Licensed as skilled nursing, nursing home, long term care
- **“Senior Apartments” or “Senior Living”
  - Generally over the age of 55 or over 62
  - Generally no expectation on mobility, cognitive or other self preservation skills

* Easy to address
** Not so easy to address
Senior Apartments/ Senior Living Challenge

• Codes Say
• Apartments
• Not a special category
• No special requirements
Five Dead in Senior-Living Apartment Building Fire, 10 Hospitalized
One Killed and Dozens Displaced in Retirement Apartment Fire - AL

90 displaced after fire at downtown Birmingham retirement community
18-1.3 Definitions.

18-1.3.1 Terms applicable to this chapter are defined in Chapter 3 of this Code; where necessary, other terms will be defined in the text as they may occur.

Apartment Buildings. Includes buildings containing three or more living units with independent cooking and bathroom facilities, whether designated as apartment house, tenement, garden apartment, or by any other name.

Apartments for the Elderly. An apartment building specifically designed for housing elderly individuals who are capable of self-preservation.
New Rules Unpopular with Many

- Special Provisions Removed from 1985 Code
Recent Life Safety Code Committee Actions:

2014/2015: TC on Residential Occupancies
  — Apartments for the Elderly Task Group Report

Challenges

- Existing buildings/age in place/NORCs?
- Age threshold-or age plus mobility?
- Age independent-in home care with DME?
- Multifamily and single family?
Recent Life Safety Code Committee Actions:

Next Steps

- Different view in 2015/2016 from stakeholders?
- What did we hear on NOV 4, 2015?
- Data collection
  - When is an apartment fire a senior apartment fire?
- What are state/locals doing?
- July 2016
  - TC on Residential Occupancies
NFPA 99 and Durable Medical Equipment (DME)

Jonathan Hart, P.E. - NFPA
Examples of Healthcare Technology Used at Home

Assistive Technology
- Medical beds and rails
- Wheelchairs
- Walkers
- IV poles
- Patient lifts

Home Therapeutics
- Hemodialysis
- Negative pressure wound therapy
- Infusion pumps
- Enteral feeding pumps
- Ventilators
Examples of Healthcare Technology Used at Home

**Instruments**
- Telemonitoring equipment
- Glucose meters
- Pulse oximeters

**Implantables**
- Defibrillators
- Hips and knees
- Drug-eluting stents
- Aneurysm clips

**Self Diagnostic and Monitoring Systems**
- Cardiac, telemetry
- Patient call systems
- Blood pressure equipment

**Disposables & Accessories**
- Ventilator breathing circuits, filters
- Oxygen therapy related devices
- Needles, syringes, IV catheters, IV tubing, foley catheters, feeding tubes, gloves
Healthcare Technology Used at Home

Advanced medical devices and equipment originally designed for use by trained personnel in hospitals and clinics are migrating into the home.

- Unlike the clinical setting, the home is an uncontrolled environment with additional hazards.
Unique Challenges in the Home

Unpredictable environment
- Children
- Location
- Pets and vermin
- Power sources
- Power outages

- Sanitation
- Space
- Temperature, air quality, humidity
- Water
3.8M at-risk Medicare beneficiaries living at home independently

Medicare at-risk data types include:

- Electricity-Dependent Durable Medical Equipment (DME)
  - Ventilators
  - Oxygen concentrators
  - Enteral feeding machines
  - Intravenous (IV) pumps
  - Suction pumps
  - At-home dialysis machines
  - Electric Wheelchairs/scooters
  - Electric Beds
- Oxygen ($O^2$) Tank Services
- Dialysis Services (facility/home)
- Home Health Services
HHS emPOWER Initiative
Portable medical oxygen in the home has grown over the past decade. Medical oxygen adds a higher percentage of oxygen to the air a patient uses to breathe. Fire needs oxygen to burn. If a fire should start in an oxygen-enriched area, the material burning will burn more quickly.

Homes where medical oxygen is used need specific fire safety rules to keep people safe from fire and burns.

**SAFETY TIPS**

- There is no safe way to smoke in the home when oxygen is in use. A patient on oxygen should not smoke.
- Candles, matches, wood stoves and even sparking toys, can be ignition sources and should not be used in the home.
- Keep oxygen cylinders at least five feet from a heat source, open flames or electrical devices.
- Body oil, hand lotion and items containing oil and grease can easily ignite. Keep oil and grease away where oxygen is in use.
- Never use aerosol sprays containing combustible materials near the oxygen.

**FACTS**

1. Oxygen saturates fabric covered furniture, clothing, hair and bedding, making it easier for a fire to start and spread.
2. Smoking materials is the leading heat source resulting in medical oxygen related fires, injuries and deaths.

Post **No Smoking** and **No Open Flames** signs in and outside the home to remind people not to smoke.

Name of Organization
Contact Information
NFPA 99 – Current Regulations

- Chapter 6: Electrical Systems
- Chapter 10: Electrical Equipment
- Chapter 11: Gas Equipment
- Chapter 12: Emergency Management
1.3 Application.

1.3.1 This code shall apply to all health care facilities other than home care and veterinary care.

3.3.67* Health Care Facilities. Buildings, portions of buildings, or mobile enclosures in which human medical, dental, psychiatric, nursing, obstetrical, or surgical care is provided.
EMS Perspective and Mobile Integrated HealthCare/Community Paramedicine (MIH/CP)

Ken Holland, NFPA
• What is MIH/CP and how has it changed the delivery of EMS?
  — Changes in healthcare laws
  — Desire to provide a better service to those who need it
  — EMS is not just “emergency medical services”
• Brief History of MIH/CP
  — Has been being practiced for some time now in rural areas
  — Prominent in other countries, growing here in US
• The current status of MIH/CP
  — States and local protocols
EMS Perspective on MIH/CP

• What is the connection between MIH/CP and the aging population?
  — Less visits to the emergency room
  — Reduces unnecessary trips to the emergency room
  — Fills a gap when home health care is not available
  — Creates a “team” of healthcare providers to provide the best level of care with the best outcomes for the patient.

• MIH/CP is designed to meet the many needs of the community
  — Those living alone with special medical needs
  — Community based programs designed to promote a health community
EMS Perspective on MIH/CP

• Specialized training required for EMS providers
  — Non acute care but can provider emergent care if needed with additional resources.
  — Routine care and emergency medical care

• Goals of an MIH/CP program
  — Build stronger relationships with the aging population and provide a more complete level of medical care
  — Work as part of a medical “team” to provide the highest level of medical care with the most value to the patient
  — Ensure the aging population is living independently and safely in their own homes
EMS Perspective on MIH/CP

- NFPA’s role in MIH/CP and in EMS
- NFPA 451 Guide for Fire Based Community Healthcare Providers
- New document being developed to address the needs of the fire service relative to MIH/CP
- Working with a wide variety of medical professionals and providers to ensure that the needs and demands of the community can be met.
- Have to realize this is a “team” concept with the patient being the hub and working together as a team for the patient
Outcomes from Foundation/NFPA 2015 Workshop

Amanda Kimball
• If apartments are already required by code to be full sprinkler protected, have fire alarm systems installed, and adequate exiting and construction materials, what else should be done? What other type of system and/or practice could further improve safety in the building?
• What is the proper level for regulation for these types of occupancies (e.g. senior apartments)? Would it be most effective for these issues to be addressed through NFPA/building codes, CMS, fire departments/first responders, health care equipment manufacturers/suppliers, others?
• In 1984, there was a movement to create new requirements around “senior housing” in the NFPA codes. However, at the time, it was felt that this would largely apply to lower income housing and would be unfair. What has changed in the political climate since this time where this would allow for additional requirements for these types of buildings?
Questions Relating to Health Care

- What are the expectations of community integrated health care? How does it fit with home health care?
- What are the opportunities for collaboration/coordination between home health agencies and community health care providers?
- What are the benefits of providing community health care programs via a public (e.g. fire department) or private entity (e.g. hospital)? What are the disadvantages of each approach?
Questions Relating to Prevention/Education

• Is there a process in place for home health agencies and EMS responders to identify potential safety hazards around a home? If not, should/can there be?

• What are the opportunities for collaboration/coordination between education/prevention groups and home health providers?

• What are the obstacles that educators face when reaching out to at risk populations? How can those be overcome?
Questions Relating to DME

- How should issues such as power outages be addressed when it comes to DME in the home?
- What are some opportunities relating to connected DME in the home (i.e. smart equipment)?
Discussion on Regulation

- Consider cooking safety devices along with sprinklers and fire alarm
- Regulations should be based on mobility limitations
- Need to focus on individual preparedness
- There was agreement that it may be time to re-approach the discussion of special regulations for “senior housing”
- What about “grandfathered” buildings?
Discussion on Home Health/MIH

- Do we even have a standardized, widely accepted definition of integrated health care?
- Opportunity for more preventative care and reduction in hospital re-admissions by collaborating.
- Communication is important
  - Consolidate medical history between doctor, hospital, home health care agency, community paramedicine visit
- MIH could require additional training and certifications
- Who is going to pay for MIH services?
- Need to educate the community about what the fire department does within their community – including medical services
- Some thought easiest route for implementation of MIH is through the FD – already in the community
Discussion on Prevention

- Work with other community agencies like EMS, home health, aging groups, city council, civic groups, Meals on Wheels to get access to at-risk populations
- Use partnerships to conduct home safety checks – need a more institutionalized process
- FDs should be aware of any home safety issues found by others such as home health caregivers
Discussion on DME

- Need informed decisions on prioritization of power
  - How does a community make these decisions: emergency manager, electric utility, public health officials?
  - DME users need to be educated on equipment and what to do in the event of a power outage

- Providers of DME – suggestion that they could fill out a form with details about the equipment and send to emergency responders /public health officials

- Could provide automatic notifications from pharmacy when filling DME prescriptions to dispatch agencies

- Can we use “big data” and coordinate through emergency management associations to better address the local needs using this data?
The consensus was that in general we are disjointed in our efforts and there is a need for better collaboration between all agencies to ensure the most appropriate use of resources. In doing this it might mean a change in strategic missions for many organizations, such as FDs and the way they operate as it relates to the services they are providing to the public.”
CEUs: To receive CEUs for this session, scan your badge at the back of the room before leaving.

Evaluation: Complete a session evaluation on the mobile app. (Search app store for ‘NFPA 2016 C&E.’)

Handouts: Handouts will be available via the mobile app and at nfpa.org/conference.

Recordings: For information on audio recordings of Educational Sessions, visit nfpa.org/Xchange.