

This Module is designed to prepare trainers to teach Assessors/Inspectors the importance of and linkage between a healthy homes assessment and use of the HUD Healthy Home Rating System (HHRIS).

The module will run approximately 30 to 45 minutes to include questions and answers.

LEARNING OBJECTIVES

By the end of this module, students will be able to:

- Determine assessment purpose and goals
- Describe links between deficiencies and hazards
- Summarize detailed information to be collected
- Explain timeframe to be considered when evaluating deficiencies
- Identify currently available inspection methods
- Evaluate unique considerations for different dwelling types



Because this train-the-trainer course will prepare trainers to instruct Assessors/Inspectors on how to use the HUD Healthy Home Rating System (HHRS), it is important that trainers be able to:

1. Explain how Assessors/Inspectors should determine the assessment purpose and goals
2. Describe links between observed deficiencies, as identified during a housing assessment, and the 29 HHRS hazards.
3. Identify what types of assessment information are required before an Assessor/Inspector can use the HHRS to rate deficiencies according to hazard type, likelihood of harm, and potential outcome of the harm. Explain that sufficient details and an adequate description of each housing deficiency must be collected before an Assessor/Inspector can rate the deficiencies using the HHRS and substantiate the results
4. Recognize the need to consider a 12-month timeframe when evaluating deficiencies
5. Explain the importance of creating and using established conventions when inspecting the dwelling and discuss the need to assess other spaces in multifamily buildings and the unique aspects of SROs

THE HHRS PROCESS

Step 1

- Inspecting the Dwelling

Step 2

- Linking Deficiencies to Hazards

Step 3

- Scoring the Hazard

Step 4

- Determining the Appropriate Action



ASSESSMENT GOALS AND PURPOSE

- Ask about occupants' goals for assessment
- Address occupant concerns
- Agree on purpose of assessment



Explain that home assessments should start and end with people, including understanding occupants' physical surroundings, the type of home they live in, where they spend their time within the home, and what their routine activities are. This will enable the Assessor/Inspector to identify potential types of risks and exposures to harm. A clear purpose for the assessment should be established with the occupants and result in information that they can use to make informed decisions. Occupants should also be able to express their goals for the assessment, including any concerns they may have.

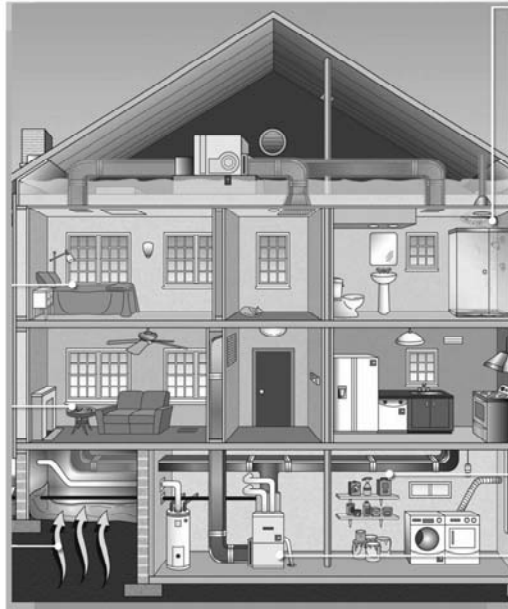
ASSESSMENT STEPS

- Establish initial contact /collect information
- Determine relevant Environmental History
- Establish clear purpose and goal for the assessment
- Perform site visit/walk-through
- Conduct Qualitative/Quantitative assessments
- Generate report



Generally, an assessment starts with contacting the occupants and/or the property owner, if different, and obtaining general information about the dwelling unit (and the multifamily building, if applicable). The Assessor/Inspector will also take an Environmental History to determine the level of need. During this initial contact, a clear purpose and goal for the assessment will be established. The site visit and walk-through of the dwelling unit (and, if applicable, common areas and spaces of the multifamily building) is then conducted, and any qualitative or quantitative assessments are made, including environmental testing if warranted. Lastly, an assessment report is generated, which will then be used to rate the identified deficiencies using the HHRS.

Homes are "Systems"



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Explain that homes must be thought of and assessed as complete “systems.” This means that all exterior and interior surfaces, floors, rooms, mechanical equipment (i.e., plumbing, heating, electrical), and occupant belongings can be interconnected and thus influence the health and safety of a dwelling unit.

ASSESSMENTS SHOULD PROMOTE THE 7 “KEEP IT” PRINCIPLES

-  1. Keep it DRY
-  2. Keep it CLEAN
-  3. Keep it PEST-FREE
-  4. Keep it VENTILATED
-  5. Keep it SAFE
-  6. Keep it CONTAMINANT-FREE
-  7. Keep it MAINTAINED

Explain that any assessment should ultimately be intended promote the Seven Principles of Healthy Homes, which includes keeping it:

1. Dry – e.g., prevent water from entering the home.
2. Clean – e.g., control the sources of dust and contaminants.
3. Safe – e.g., prevent physical safety hazards, and poisoning, fire and carbon monoxide sources.
4. Well-ventilated – e.g., supply fresh air to reduce contaminants.
5. Pest-free – e.g., eliminate pests and the ways in which they enter and remain in the home.
6. Contaminant-free – e.g., control or eliminate contaminants such as lead-based paint, radon, and mold.
7. Well-maintained – e.g., inspect, clean and regularly maintain the home.

ASSESSMENT METHODS

Any existing tool, protocol or list is acceptable:

- Know what information to collect on deficiencies in order to rate with HHRS
- Obtain sufficient details to justify HHRS ratings



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Explain that any assessment/inspection tool, protocol or list that has already been developed is acceptable for use with the HHRS, provided that it covers the whole dwelling (and surrounding spaces and common areas, if in multifamily buildings).

It is important that the Assessor/Inspector fully understands how the HHRS is designed to rate housing deficiencies as hazards. This will influence what information is obtained about the deficiencies, and that sufficient details are collected to enable any deficiencies to be rated, including substantiating any decisions and judgments that went into those ratings.

**Review
chart of 29
Hazards**

THE EFFECT OF THE DEFECT
Housing Hazards as Identified in the Healthy Home Rating Tool

1 Damp and Mold Growth
Caused by dust mites, mold or fungi growth caused by dampness and/or high humidity. It includes threats to mental health and insect infestation caused by living with damp, mold staining and/or mold growth.
Most vulnerable: 14 years or less

2 Excess cold
Caused by excessively cold indoor temperatures.
Most vulnerable: 65 years or older

3 Excess heat
Caused by excessively high indoor air temperatures.
Most vulnerable: 65 years or older

4 Asbestos, Silica and other MMF
Caused by excessive levels of silica, asbestos and man-made mineral fibers (MMF).

5 Biocides
Threats to health from these chemicals used to treat timber and mold growth in dwelling. While biocides include insecticides and rodenticides to control pest infestations (i.e. cockroaches or rats and mice), these are not considered for the purposes of the HHRT.
Most vulnerable: No Specific Group

6 Carbon monoxide and fuel combustion products
Excess levels of carbon monoxide, nitrogen dioxide, sulfur dioxide and smoke in the dwelling's atmosphere.
Most vulnerable: All persons aged 62-64 with chronic exposure

7 Lead
Ingestion from lead-paint dust, debris or leaded water pipes.
Most vulnerable: 6 years or younger

8 Radiation
This category covers the threats to health from radon gas and its daughters, primarily airborne, but also radon dissolved in water.
Most vulnerable: All persons aged 62-64 with chronic exposure

9 Uncombusted fuel gas
Fuel gas leaking into the atmosphere within a dwelling.
Most vulnerable: No Specific Group

10 Volatile Organic Compounds
Volatile organic compounds (VOCs) are a diverse group of organic chemicals which includes formaldehyde, that are gaseous at room temperature, and are found in a wide variety of materials in the home.
Most vulnerable: No Specific Group

11 Crowding and Space
This category covers hazards associated with lack of space within the dwelling for living, sleeping and normal family/household life.
Most vulnerable: No Specific Group

12 Entry by Intruders
Difficulties in keeping a dwelling secure against unauthorized entry and the maintenance of detention space.
Most vulnerable: No Specific Group

13 Lighting
This category covers the threats to physical and mental health associated with inadequate natural and/or artificial light. It includes the psychological effects associated with the view from the dwelling.
Most vulnerable: No Specific Group

14 Noise
Covers threats to physical and mental health resulting from exposure to noise inside the dwelling or within its curbside.
Most vulnerable: No Specific Group

15 Domestic Hygiene, Pests and Refuse
Covers hazards which can result from poor design, layout and construction such that the dwelling cannot be readily kept clean and hygienic access into, and harborage within, the dwelling for pests, and inadequate and unhygienic provision for storing and disposal of household waste.
Most vulnerable: No Specific Group

Explain that any assessment/inspection tool, protocol or list that has already been developed is acceptable for use with the HHRS, provided that it covers the whole dwelling (and surrounding spaces and common areas, if in multifamily buildings).

It is important that the Assessor/Inspector fully understands how the HHRS is designed to rate housing deficiencies as hazards. This will influence what information is obtained about the deficiencies, and that sufficient details are collected to enable any deficiencies to be rated, including substantiating any decisions and judgments that went into those ratings.

SAMPLE ASSESSMENT TOOL

- Download at <http://www.cdc.gov/nc/eh/publications/books/inspectionmanual/>



As an example, the CDC/HUD *Healthy Housing Inspection Manual* is a model reference tool that local jurisdictions and grantees can use as-is or modify as needed. It takes environmental health professionals and housing managers, specialists, and inspectors through the elements of a holistic home inspection. Its purpose is to:

1. Improve communication and collaboration among public health professionals, housing professionals, property owners, and property managers.
2. Increase the understanding of the relations among exposure to hazardous agents, conditions in the home, and adverse health outcomes.
3. Improve the ability of programs to address an array of housing deficiencies in an efficient, effective, and timely manner.

The *Manual* contains two primary sections:

Section 1 is the Healthy Homes Model Resident Questionnaire.
Section 2 is the Visual Assessment Data Collection Form.

The *Manual* also contains three supporting appendices: a data dictionary; a cross reference to code provisions in the 2003 International Property Maintenance Code; and additional resources, such as links to environmental sampling methods.

SAMPLE ASSESSMENT TOOL

- Contact the Environmental Health Department at Children’s Mercy Hospital at <http://www.childrensmercy.org/CEH/> for this tool.

3.0 EPA Room Survey: Child's Bedroom

Site ID: # _____ Date of Site Visit: _____ Surveyor: January 25, 2005

A1: Floor and Ventilation

Item	OK	Y	N	Description	Score
Surface material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Supply and unobstructed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Partially blocked by chair	100
Moisture and mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Asbestos and lead paint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

A2: Airflow & Dust

Item	OK	Y	N	Description	Score
No window gaps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No window screens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Current condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew/moisture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Asbestos and lead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Building condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No CO2 relative humidity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew/moisture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No CO2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No visible evidence of rodents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No visible evidence of insects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew on surfaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

A3: Moisture Control

Item	OK	Y	N	Description	Score
No water control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No water control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No water control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No water control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No water control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No water control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

B1: Chemical Exposure

Item	OK	Y	N	Description	Score
No smoking allowed in room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No smoking in room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

C1: Safety & Injury Prevention

Item	OK	Y	N	Description	Score
Smoke detector in room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
No mold/mildew	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Children's Mercy Hospital © 2005

U.S. EP Score: _____



Here is an example of one of several assessment forms created and used by Children’s Mercy Hospitals in Kansas City, Missouri.

WHAT TO ASSESS

- Each deficiency
- Dwelling as a whole
- Surrounding spaces



In order to use the HHRS, assessments must include a full inspection of the dwelling unit.

This means collecting sufficient information on each deficiency, the dwelling as a whole, and any surrounding spaces. This helps inform the HHRS hazard determinations and ratings.

The assessment should ensure that all deficiencies are identified and recorded.

WHAT TO OBTAIN

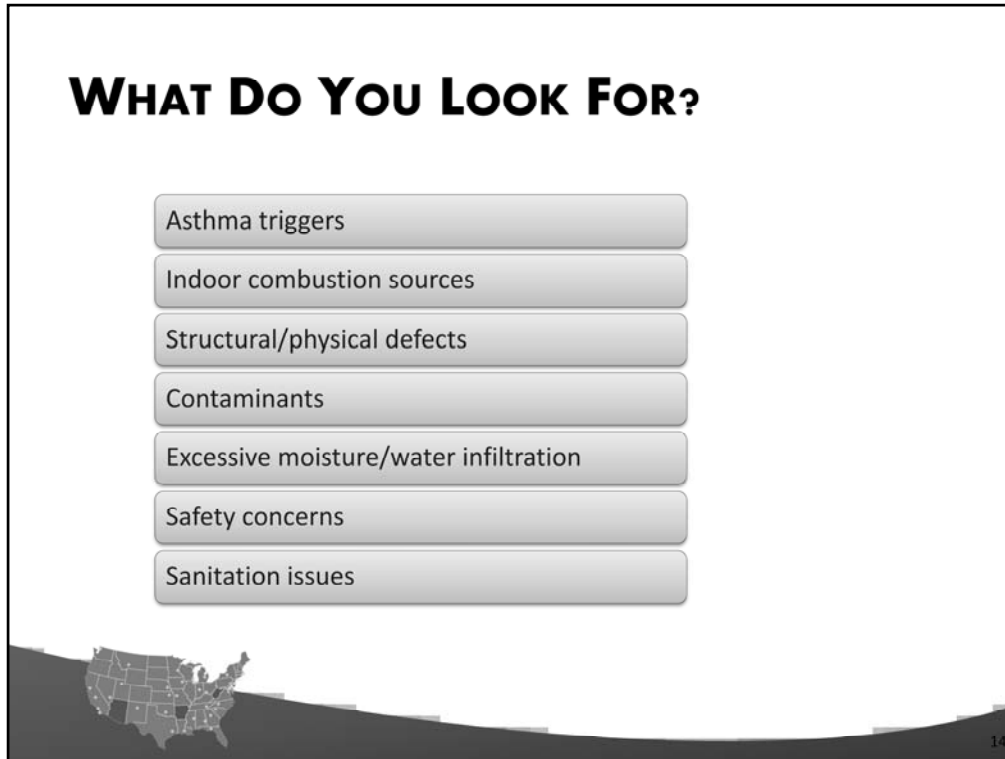
- Background, historical information, plans, records
- Authority for destructive testing



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When an assessment is carried out in cooperation with the owner or occupant of a dwelling unit, Assessors/Inspectors should obtain background and historical information, including any plans and records.

Also, if any destructive testing is anticipated, such as taking a lead-based paint chip sample from exterior siding, Assessors/Inspectors must obtain authority from the property owner to do so, either as part of the original instructions or if subsequently found to be necessary.



ASK THE CLASS to identify things they look for during a home assessment.

Explain that some of the obvious hazards to look for during an assessment include but are not limited to:

- Asthma triggers – actual evidence or signs of pests (e.g., cockroaches and rodents) and mold.
- Indoor combustion sources that can emit carbon monoxide, nitrous oxide, and moisture (e.g., gas appliances and water heaters, gas furnaces, gas/fuel space heaters).
- Structural/physical defects – obvious or potential future safety hazards (e.g., missing or loose handrails, broken steps).
- Contaminants – asbestos, vermiculite, lead-based paint, mold and mildew, radon, building product emissions.
- Leaks from roofs, plumbing fixtures, or cracked foundations.

Note that if students are interested in learning more about how to do an assessment, the Training Center offers the Healthy Home Environmental Assessment: Principles & Practice course.

ASTHMA TRIGGERS



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Here are two images. The first is of obvious mold growth on wall and baseboard surfaces. The second is of mouse droppings on an interior window stool molding (i.e., sill).

INDOOR COMBUSTION SOURCES



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Many household appliances use natural gas as their energy source. However, when gas is burned, this “combustion reaction” produces some harmful gases like carbon monoxide, which must be vented to the outside. It also includes gases like nitrogen dioxide that are considered a significant respiratory irritant and very low concentrations. If the exhaust ventilation on these appliances is not designed properly or working correctly, this can lead to indoor exposure and health problems.

THE WEATHER AND SEASONS

- Weather can dramatically affect conditions
- Differences from summer to winter
- HHRS considers likelihood of occurrence up to 12 months after assessment

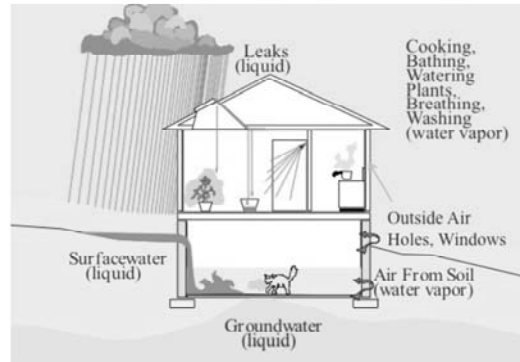


An assessment is a snap-shot of the dwelling and its condition at that particular time. Current weather patterns and the season of the year can dramatically affect the conditions that are observed. A dwelling unit may seem satisfactory on a warm summer day, but conditions could be totally different on a cold and wet day in winter. These conditions should be noted in the assessment report.

For purposes of using the HHRS, determining the likelihood of harm requires judging whether there could be an occurrence during the twelve months following the assessment.

HOW WEATHER (AND WATER) CAN AFFECT HOMES

Figure 4.11 Ways in Which Water Can Enter a Building (Envelope leaks can occur from anywhere in the building roof, windows, doors and penetrations)



Although this graphic illustrates the various ways in which water can enter a home, it also shows how heavy rain during a weather event could lead to water infiltration and/or flooding.

ASSESSING MULTIFAMILY DWELLINGS

Determine scope of work – individual unit or multiple units

Number and relative position of other units

General details about shared rooms and other common areas



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In multifamily dwellings, such as apartment buildings, Assessors/Inspectors will assess the subject dwelling unit (i.e., the occupied rooms and areas) as well as record the number and relative position of other units within the building. This includes whether each unit is residential or non-residential.

General details should be collected and recorded on rooms and areas that have not been or will not be assessed and that are shared in common with other occupants and users of the building. These include passages, corridors, stairs, means of access, means of escape in case of fire, kitchens, bathrooms, shower rooms, living rooms, and dining rooms.

ASSESSING OTHER MULTIFAMILY AREAS

- Concentrate on walls, windows, roof
- Note external means of access, refuse storage, amenity spaces



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Assessments of the exterior of the building containing the subject dwelling unit should concentrate first on those parts of the exterior directly associated with the dwelling, including the walls, windows and, where appropriate, the roof.

This assessment stage should also include the external means of access, refuse storage, and amenity spaces associated with the building. Also, any remaining portion of the building's exterior should be assessed.

SINGLE ROOM OCCUPANCIES (SRO)

- Accommodation is non-exclusive
- Assess whole premises similar to single occupied house



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Single room occupancies (SRO) are similar to dormitory housing where the kitchen and/or bathroom, or some other major room in the dwelling unit is shared by more than one occupant/family.

For residential premises where accommodation is on a non-exclusive basis (i.e., occupants are not granted exclusive occupation of a room or rooms, and sleeping accommodation is provided in dormitories), the whole premises should be assessed as if it was a single occupied house.

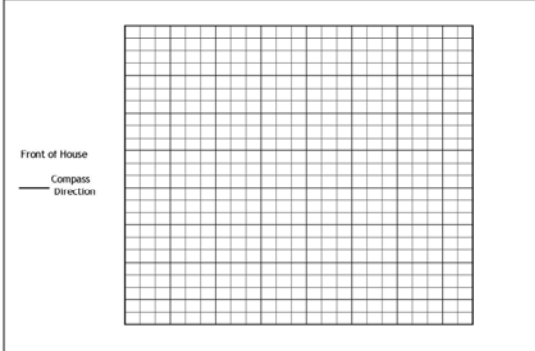
In such cases, the Assessor/Inspector should consider the facilities and whole building deficiencies when taking into account the number of persons the premises is capable of accommodating. This is meant to assess potential crowding and space issues.

ASSESSMENT CONVENTIONS

- Orientation, room and element locations
- Statement in report on conventions used
- Avoid confusion for subsequent assessments

Name: _____ Phone(s): _____
Address: _____

Front of House
Compass Direction



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To promote consistency in the carrying out of assessments and in record keeping, Assessors/Inspectors should adopt conventions to ensure there are no misunderstandings on orientation (e.g., north, south, east, west), and room and element locations.

To avoid confusion, particularly when carrying out subsequent assessments, it is good practice to include a statement in the assessment report on the conventions used to describe rooms and other aspects of the dwelling unit.

WHAT WE'VE LEARNED

Determine assessment purpose and goals

Describe links between deficiencies and hazards

Summarize detailed information to be collected

Explain timeframe to be considered when evaluating deficiencies

Identify currently available inspection methods

Evaluate unique considerations for different dwelling types



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In this module of the HHRS train-the-trainer course, Assessors/Inspectors should have learned to:

1. Explain how to determine assessment purpose/goals: discuss with occupant/owner, develop consensus for purpose and goals of assessment
2. Describe links between deficiencies and the 29 HHRS hazards: damp/mold growth – asthma; carbon monoxide and fuel combustion products – carbon monoxide poisoning; deteriorated paint – potential lead hazard; etc.
3. Identify information to be collected and explain why details are needed: established purpose and goals, environmental history, problems identified during walk-through, quantitative and qualitative assessment data; sufficient detail to justify ratings
4. Recognize the appropriate timeframe to be considered when evaluating deficiencies: Consider what could happen during the next 12 months, particularly emerge due to weather and seasonal patterns, that would lead to new deficiencies.
5. Explain the use of inspection conventions and unique considerations for different dwelling types: Assess the subject dwelling unit and any shared or common spaces when working in multifamily buildings; Determine the unique living circumstances and potential crowding and space issues associated with Single Room Occupancies; Create and utilize standard assessment conventions to promote consistency in reporting and when a dwelling unit must be re-assessed in the future.