FIRE INVESTIGATION REPORT

Board and Care Fire
Mississauga, Ontario
March 21, 1995

Prepared by
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National Fire Protection Association
ABSTRACT

On Tuesday, March 21, 1995, at approximately 7:40 p.m., a fire occurred in a one-story board and care facility in Mississauga, Ontario. The fire resulted in eight fatalities and 12 injuries. Three people died at the time of the fire and one died five days later. The remaining four fatalities, determined to be related to the fire, occurred over a span of eight months.

The 70 occupants ranged in age from 60 to 101 years old. Many of the occupants had some degree of mental or physical impairment that could have impeded their ability for self rescue. Of the 70 occupants, 20 used wheelchairs, 17 used canes or walkers, and 15 suffered from varying degrees of mental impairment.

The building was a one story structure that was partially sprinklered in the basement area only. The resident's rooms were equipped with heat detectors, as were the hallways, which were connected to an alarm system. The alarm system was connected to an alarm monitoring company.

The fire was determined by the Ontario Fire Marshal's office to have been caused by smoking materials which ignited clothing in a closet in one of the rooms. The room was occupied by two people at the time of the fire, which occurred at 7:39 p.m. One of the occupants of the room called the fire department via 911 and reported the fire. She then was able to escape from the room via an exterior window. The other occupant, who was confined to a wheelchair, was not able to escape.

Six of the other fatalities were found in their rooms. One other victim, who was confined to a wheelchair, was found in the hallway, having become overcome by smoke while attempting to escape.

Smoke was able to spread to the other rooms through the void space above the rooms. The corridor walls and the walls between the individual units did extend above the ceiling to the underside of the roof diaphragm. However, smoke was able to penetrate into this void space via unprotected openings in the ceiling in the room of origin and then into the other areas through unsealed penetrations in the various walls.

In addition to the void space, smoke also penetrated into the rooms through the corridor doors to the individual units. In several of the rooms, the occupants died from smoke inhalation even though the doors to their rooms were closed.

The following are considered significant factors that contributed to the outcome of this incident:
- The lack of sprinkler protection (except for the basement);
- The failure to close the door to the room of fire origin following detection of the fire;
- The combustible room contents; and
- The lack of staff training and fire drills.

This is the second fire to have occurred in a Mississauga facility housing elderly people with serious loss of life. In 1980 another fire in a nursing home killed 25 occupants. There are a number of common factors between the two fires, which include lack of an automatic sprinkler system and failure to close the door to the room of origin.
I. INTRODUCTION

The National Fire Protection Association (NFPA) investigated the Mississauga Board and Care Fire in order to document and analyze significant factors that resulted in the loss of life and property.

Edward Comeau, Chief Fire Investigator of the NFPA Fire Investigations Department, visited Mississauga, Ontario to perform an on-site study of this incident. The two-day, on-site study documentation and subsequent analysis of the event were the basis for this report. Access to the fire scene and data collection activities were made possible through the cooperation of the Ontario Fire Marshal’s Office and the Mississauga Fire & Emergency Services.

The study was funded by the NFPA as part of its on-going program to investigate technically significant incidents. The NFPA’s Fire Investigation Department documents and analyzes incident details so that it may report lessons learned for life safety and property loss prevention purposes.

This report is another of the NFPA’s studies of fires having particular important educational or technical interest. All information and details regarding fire safety conditions are based on the best available data and observations made during the on-site data collection phase and on any additional information provided during the report development process. It is not the NFPA’s intention that this report pass judgment on, or fix liability for, the loss of life or property resulting from this fire. Rather, the NFPA intends that its report present the findings of the NFPA data collection and analysis effort and highlight factors that contributed to the loss of life or property.

Current NFPA codes and standards were used as criteria for this analysis so that conditions on the day of the fire could be compared with state-of-the-art fire protection practices. It is recognized, however, that these codes and standards may not have been in effect during construction or operation of the facility. The NFPA has not analyzed this facility regarding its compliance with the codes and standards that were in existence when it was built or during its operation.

The cooperation and assistance of the Ontario Fire Marshal’s Office, the Mississauga Fire & Emergency Services, and the National Research Council of Canada is greatly appreciated.
II. BACKGROUND

Occupancy Classification

Based on Chapter 23 of NFPA 101®, Life Safety Code, 1994 edition, this occupancy would have been classified as an Existing Board and Care Occupancy.

After considering the staffing level and the physical and mental capabilities of the residents, NFPA has determined that the evacuation capability for this facility would be classified as “impractical.” Section 23-1.3 of NFPA 101 defines “Impractical Evacuation” as the “evacuation capability of a group that, even with staff assistance, cannot reliably move to a point of safety in a timely manner.” The Life Safety Code further clarifies that any evacuation that cannot be completed within 13 minutes should be considered impractical. Section 23-3.1.2.2 of NFPA 101 reads:

101:23-3.1.2.2 Impractical. Large facilities classified as impractical evacuation capability shall meet the requirements for limited care facilities in Chapter 13.

Therefore, the code analysis used in this report will be that of NFPA 101, Life Safety Code, Chapter 13, Existing Health Care Occupancies.

NFPA 1, Fire Prevention Code, 1992 edition, in addition to NFPA 101, provides a linkage between relevant NFPA codes and standards. Chapter 12, Health Care Occupancies, contains requirements for these occupancies and provides specific references to NFPA 101.

The Building

The building was originally constructed in 1978 as a 46 unit retirement home. An additional wing was constructed in 1985, bringing the total number of rooms to 53.

The building was a one story structure shaped in a “T” formation. Each wing had a series of rooms on each side of a common corridor that ran down the middle of the wing. The southwest wing was approximately 157 ft (48 m) in length. The northwest wing was 100 ft (30 m), and the southeast wing was 154 ft (47 m) in length. There were a set of fire doors in the southeast wing located 68 ft (21 m) from the intersection of the three wings, or 86 ft (26 m) from the end of the corridor. These were the only fire resistive or smoke doors located in the hallways along the means of egress.

The exterior walls were constructed of reinforced masonry construction. The walls between the common hall were reinforced masonry block. The walls between the individual rooms were constructed of 5/8-in. (16-mm) fire-rated gypsum on AxB metal studs. These walls extended from the floor to within 1 1/2-in. (38-mm) of the underside of the roof diaphragm. According to the Ontario Fire Marshal’s office these breaches were not continuous.
There was a set of double doors located in the southeast corridor that provided a barrier to the spread of smoke and fire. The photo above is taken from the fire side of the doors. The photo at right, as seen from the far side of the doors, shows that they were able to stop the spread of a significant amount of smoke.

The roof was constructed of built up roofing material on corrugated metal and supported by lightweight metal trusses.

The ceilings in the individual units were constructed of 5/8-in. (16-mm) fire-rated gypsum on metal supports. There were unsealed penetrations through this assem-
The building was a one story structure.

Due to the corrugation of the roof pan, there was an 1-1/2" (38 mm) gap between the top of the reinforce masonry corridor wall and the underside of the roof diaphragm.

bly for lights, smoke detectors, heat detectors, room heating and cooling units, and access panels for maintenance. A 27-in. (700-mm) void space existed above this ceiling area.
The structural components for this building included a reinforced masonry wall for the exterior walls, interior bearing walls, and a metal truss system supporting the roof. The truss system on each side of the corridor was supported by the exterior masonry wall and the interior corridor wall.

Since the gypsum ceiling system in each of the rooms had metal access panels within them, as well as openings made for lights, smoke detectors, and HVAC units, the integrity of this ceiling was compromised and the metal truss system considered to be an unprotected truss system.

Based on this analysis, this occupancy would be classified as a Type II (000), by NFPA 220, Standard on Types of Building Construction, 1995 edition.

Each room was equipped with an individual heating and cooling unit in the void space above the ceiling. This unit was electrically powered and received cooling and heating water from a central location. The bathrooms were equipped with individual exhaust fans that penetrated the roof deck. No central HVAC system that recirculated air throughout the facility existed. The corridors and common areas were equipped with HVAC systems that provided 100 percent fresh air and did not recirculate.

There was a partial basement under a portion of the facility. This basement was sprinklered.

Both the walls between the individual rooms and between the rooms and the corridor extended from the floor to the underside of the roof diaphragm. Due to the cor-

There were several unprotected openings in the ceiling which included access panels.
nagation of the roof diaphragm, a gap of approximately 1 1/2-in. (38-mm) existed between the corridor walls and the roof diaphragm. This gap was not fire stopped with any fire-resistive material.

The doors from the individual rooms to the corridors were solid core doors, and the Fire Marshal’s office reported that they were not fire rated assemblies. They were not equipped with self closures, had locking hardware on the doorknobs, and could be opened from the interior of the room without a key. One room where a fatality occurred had a non-rated wooden passage door between it and the adjacent room. This was the only room observed with this configuration.

The walls of the corridors were covered with a vinyl wall covering, and a wooden rail that measured 1 1/2 in. x 9 in. (38 mm x 229 mm) ran along the length of the corridor. The width of the corridor, from handrail to handrail, was 76-1/2” (1.9 m). The floor of the corridor was carpeted. The carpeting extended 3-in. (76 mm) up each wall.

The Ontario Fire College evaluated the wall covering in the corridors for flame spread and smoke development after this fire. The following results were obtained:

Flame Spread: 25.84
Smoke Development: 40.7

The carpeting was not tested.

Vinyl molded corner protectors that measured 3 ft (914 mm) in height were at each doorway that entered onto the corridor. (insert picture)

The wing where the fire occurred had a corridor length of 157 ft (48 m).

Smoking was permitted only in the common areas and discouraged in the individual rooms. There was no written policy regarding this, however. Cooking was also prohibited in the rooms; meals were cooked and served by the facility staff in a central dining area.

**Fire Protection Systems**

Water was provided to the facility by an 8-in. (200-mm) municipal water main. The basement of the facility was sprinklered, but no other portion of the facility was sprinklered. Five occupant use hose cabinets were provided in the facility. A dry chemical fire extinguisher was located in each cabinet.

A fire department siamese connection was located adjacent to the main entrance of the building.

The hallways, common areas, and kitchen were equipped with heat detectors connected to an alarm system. Individual rooms were also equipped with heat detectors that were also connected to the alarm system. Single station, hard-wired smoke
detectors were in the units. The smoke detectors were not equipped with battery back-up.

The fire alarm system also monitored flow switches on the sprinkler and standpipe system and supervised the system's control valves. The fire alarm system was monitored by an off-premise company. An annunciator panel was located in the lobby adjacent to the main entrance to the facility.

The notification devices were bells located on walls in the hallways.

**Means of Egress**

Five means of egress were provided in the facility, one at each end of the corridor, one through the common area, or lobby, and one from the kitchen area to the exterior.

Since some of the occupants suffered from mental impairment, the exterior doors of the facility were equipped with magnetic locks. The locks on these doors were interconnected with the building fire alarm system and would release upon activation of the system. A manual fire alarm pull station was located adjacent to each door. In addition, to open the door under normal conditions, a security keypad was also located adjacent to each door.

The southwest wing was approximately 157 ft (48 m) in length. The northwest wing was 100 ft (31 m), and the southeast wing was 154 ft (47 m) in length. There was a set of fire doors in the southeast wing located 68 ft (21 m) from the intersection of the three wings, or 86 ft (26 m) from the end of the corridor. These were the only smoke doors located in the hallways along the means of egress.

The exterior doors of the facility were equipped with magnetic locks that would hold the door closed.
**Building Occupants**

The building was occupied by 70 residents ranging in age from 60 to 101 years old. The residents received assistance with their medications, but none received extensive medical care.

The following resident profile was provided by the Ontario Fire Marshal’s office:

- Number of residents requiring wheelchairs: 20
- Number of residents requiring walkers or canes: 17
- Number of residents mentally impaired: 15

Total: 52

The building had 13 staff members on duty during the weekdays, three staff members on duty during the evening, and two staff members on duty at night. At the time of the fire there was a supervisor and two health care aids on duty.

**Staff Training**

According to the Ontario Fire Marshal’s Office, the facility had a fire policy manual that was dated September 17, 1984. It provided information on emergency procedures, emergency equipment locations, staff duties, training, drills, and maintenance and inspection of fire protection equipment.

The last documented fire drill was in July, 1993.

On the day prior to this fire, a malfunctioning heat detector had activated the fire alarm system. When the fire department responded, “the fire department officers found that the staff was confused and uncertain as to what their responsibilities were in a fire situation.” Reportedly, because of this incident, a fire drill was planned for some time in the future but had not yet been scheduled at the time of the fire.

**Fire Department**

The Mississauga Fire & Emergency Services is responsible for providing fire protection and basic life support Emergency Medical Services (EMS) to the citizens of the city of Mississauga, which comprises 110 square miles (285 square km). The department is comprised of 450 members at 16 stations. There are approximately 100 people per shift.

Medical transportation is provided by another agency.

In 1994 the department responded to 15,055 calls.
III. THE FIRE

Discovery and Occupant Activities

A woman visiting the male occupant of Unit #3 wheeled him into the unit at approximately 7:15 p.m. and changed his clothes. At approximately 7:30 to 7:40 p.m., she reported seeing smoke from the top of the closet doors and called 911 from the telephone in the unit to report the fire. The dispatcher took the information, and then the woman dropped the phone, not hanging it up. The dispatcher could hear her attempting to open or break one of the windows in the room in order to escape. She managed to open one of the smaller, lower windows and escaped from the building. The male occupant of the room, who was in a wheelchair, was unable to escape.

At approximately the same time, the heat detector located on the ceiling above the closet in the room activated the building fire alarm system. The staff supervisor first responded to the fire alarm control panel in the main lobby to determine the location of the alarm. She then responded directly to Unit #3 and opened the door to the room. Once observing the fire she left the room, leaving the corridor door to the unit open. As she was enroute back to the office area, she opened the door to Unit #1 and assisted one of the two occupants (a wheelchair bound female) into the corridor. The staff member then continued to the office where she placed a call to 911.

No attempts were made to extinguish the fire.

The visitor in the room of origin was able to open one of the small, lower windows and escape from the room. The male occupant, who was confined to a wheelchair, was unable to escape.
The fire was determined to have originated in the closet adjacent to the room's entrance.
Fire Department Notification and Response

The Peel Regional Police received a 911 call from the woman visitor in the room of origin at 7:38 p.m. The call was then transferred to the Mississauga Fire & Emergency Services. The company that monitored the fire alarm system also called the fire department at 7:39 pm to report an alarm sounding at the facility. An initial response of two pumpers, one ladder, a heavy rescue squad, and a command officer were dispatched. The incident would eventually go to three alarms. Approximately 15 fire department units and 40 personnel were on the scene. Fourteen residents were rescued by fire department personnel.

Aerial 6 was the first fire department unit on the scene. The unit established a water supply for Pump 6, who was arriving on the scene at approximately the same time. Part of the crew from Aerial 6 then advanced a 1 1/2-in. (38-mm) handline to the exterior of Unit #4 and entered the room through the exterior window for search and rescue with personnel from Squad 1.

Personnel from Pump 6 attempted to advanced a 1 3/4-in. (45-mm) hose line down the corridor from the northwest exterior door. Pump 6 was unable to advance more than 10 ft (3 m) due to the extreme heat and smoke. One firefighter was burned about the face and neck as a result of this effort. A second attempt was made, and the crew was able to advance to Unit #3 (room of origin) and extinguish the fire. One male victim was found in this room and passed through the window to fire personnel on the outside. This person was found sitting in a wheelchair between the bed and the burning chair, facing in the direction of the hallway.

Fire extended out of the room of origin and into the corridor through the open doorway.
Squad 1 was told by facility staff and police personnel that they could see people in the rooms. The unit went to the southwest area of the building and looked into the window of Unit #2, which was clear of smoke. They then went to the window of Unit #3, which was full of thick, dense smoke. A fire fighter began breaking the window in order to provide ventilation.

Several fire fighters broke the exterior window to Unit #1 and entered the room to perform search and rescue. No one was found in the room, and the fire fighters then proceeded towards the hallway. They report that the hall was filled with dense black smoke, fire was rolling over their heads, and both walls were "crackling from fire." The fire fighters then proceeded across the hall to Unit #17 for search and rescue. They found no one, and at this time they were forced to exit the building back through Unit #1 due to the intense heat.

A fire fighter reported that he had rescued an elderly woman from Unit #5 by breaking the window and passing her out to two waiting police officers.

Squad 1 and Aerial 6 crews then entered Unit #4 for search and rescue, found nothing, and then exited the building. They re-entered through the window in Unit #3 where a fire fighter lifted a person and their wheelchair out of the window to awaiting fire fighters.

Another crew member from Pump 9, upon arrival, used an axe to break the window to Unit #22. Two fire fighters inside of the building passed a female victim out to this fire fighter, who then placed the victim in the parking lot next to another victim who was already lying on the ground. He then proceeded to break out the window to Unit #16 and entered it with another fire fighter because they had received a report of a victim trapped inside. No victim was found, so they exited through the window and re-entered through the north doors. They proceeded down the hall, searching rooms on the right side, starting with Unit #22. They did not locate any victims until they reached Unit #14. The door was closed, but unlocked, and when they entered they found a woman lying on the floor behind the door, just outside of the bathroom door. They removed her from the building and turned her over to other crews outside.

They then re-entered the building through the doors on the northwest side and continued searching for victims. They found a small fire burning in the closet of Unit #3, extinguished the fire, and continued with the search for victims. They eventually located another woman in Unit #7. They carried her out to ambulance personnel on the west side of the building, replaced their air bottles, and undertook a secondary search of the east wing, starting at Unit #23.

Car 42, the on-duty command officer, had assumed command and balanced the call to a second alarm. Subsequent requests for additional units to assist in the rescue operations were made, bringing the total number of units on the scene to 15.
A fire fighter reported that after they exited the building, and refilled their air bottles, the Squad 1 crew re-entered through the window of Unit #2 and continued to search rooms on the other side of the hallway. In Unit #19, they found an elderly female in the bathroom. Two fire fighters carried her east to the end of the hallway and then north in the hallway to a window that had been broken out. One fire fighter exited through the window first, and the other two fire fighters passed the woman out. An airway was inserted in this victim, and oxygen was administered by this crew until she began to regain consciousness.

When Pump 1 arrived on the scene, the crew entered through the main lobby and then into one of the corridors. Due to the urgency of the rescues being made, they were not able to document the locations of the victims they found. They reported that they found a female standing inside of her unit, and she was carried out in a fire fighter’s carry by one of the crew members. Another female was found in her unit standing in the hall beside her wheelchair. A fire fighter removed her to one of the exits. Another fire fighter found a conscious male on the floor in his unit and helped him out of the building.

After assisting this man, and re-entering the building, another man was found in a wheelchair in the wing and he was taken to an exit and passed to police department personnel.

**Casualties**

This fire resulted in a total of eight fatalities and twelve injuries. The following is the location of each fatality:

<table>
<thead>
<tr>
<th>Location</th>
<th>Age/Sex</th>
<th>Cause of Death</th>
<th>Date of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit of origin</td>
<td>89-year old male</td>
<td>Smoke inhalation</td>
<td>3/21/95</td>
</tr>
<tr>
<td>Corridor outside of Unit #1</td>
<td>79-year old Female</td>
<td>Smoke inhalation</td>
<td>3/21/95</td>
</tr>
<tr>
<td>Unit #7</td>
<td>89-year old Female</td>
<td>Smoke inhalation</td>
<td>3/26/95</td>
</tr>
<tr>
<td>Unit #10</td>
<td>103-year old Female</td>
<td>Smoke inhalation</td>
<td>3/21/95</td>
</tr>
<tr>
<td>Unit #11</td>
<td>99-year old Female</td>
<td>Smoke inhalation</td>
<td>11/21/95</td>
</tr>
<tr>
<td>Unit #12</td>
<td>102-year old Female</td>
<td>Smoke inhalation</td>
<td>4/10/95</td>
</tr>
<tr>
<td>Unit #26</td>
<td>95-year old Female</td>
<td>Smoke inhalation</td>
<td>4/21/95</td>
</tr>
<tr>
<td>Unit #27</td>
<td>96-year old Female</td>
<td>Smoke inhalation</td>
<td>4/20/95</td>
</tr>
</tbody>
</table>

The woman found in the corridor outside of Unit #1 died while trying to escape. She was found in her wheelchair, which had tipped over on its side. The cause of death was from a heart attack after exposure to the fire.

Three other fatalities were found in their rooms. The woman in Unit #10 was found in her bed. The male in the room of origin, Unit #3, was found in his wheelchair.
The occupant of this room, which was down the hall and on the opposite side of the corridor from the room of origin, died from smoke inhalation. It was determined that the smoke was able to spread to her room via the void space and through openings made for electrical and plumbing services.

The woman in Unit #7 died of smoke inhalation a week after the fire.

The following casualty profile compares the injuries and fatalities with the pre-existing medical conditions of the residents:

<table>
<thead>
<tr>
<th>Physical Condition</th>
<th>Total Residents</th>
<th>Injured Residents</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of residents requiring wheelchairs</td>
<td>20</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Number of residents requiring walkers or canes</td>
<td>17</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Number of residents mentally impaired</td>
<td>15</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>20</td>
<td>8</td>
</tr>
</tbody>
</table>

**Damage**

The contents of the room of origin were partially consumed by the fire. The fire extended through the open door of the room into the corridor and extended to the northwest exit door, consuming the wall covering material and the carpet. It extended down the southeast corridor.
### IV. TIME LINE

<table>
<thead>
<tr>
<th>Time</th>
<th>Elapsed Time (from time of call)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:39</td>
<td>00:00</td>
<td>Call Received from visitor in Unit #3</td>
</tr>
<tr>
<td>7:40</td>
<td>00:01</td>
<td>Dispatched A6, P6, P1, S1, C42</td>
</tr>
<tr>
<td>7:44</td>
<td>00:05</td>
<td>A6 on the scene</td>
</tr>
<tr>
<td>7:46</td>
<td>00:07</td>
<td>Report of smoke visible in northwest wing</td>
</tr>
<tr>
<td>7:46</td>
<td>00:07</td>
<td>1 3/4-in. (45-mm) handline being advanced</td>
</tr>
<tr>
<td>7:47</td>
<td>00:08</td>
<td>Car 42 on the scene</td>
</tr>
<tr>
<td>7:47</td>
<td>00:08</td>
<td>Pump 1 on the scene</td>
</tr>
<tr>
<td>7:47</td>
<td>00:08</td>
<td>Car 42 assumes command</td>
</tr>
<tr>
<td>7:48</td>
<td>00:09</td>
<td>Exterior rescue reported</td>
</tr>
<tr>
<td>7:48</td>
<td>00:09</td>
<td>One fire fighter reported injured with burns</td>
</tr>
<tr>
<td>7:49</td>
<td>00:10</td>
<td>A1, P9, P16, CP1, C1 dispatched</td>
</tr>
<tr>
<td>7:50</td>
<td>00:11</td>
<td>Additional ambulances requested</td>
</tr>
<tr>
<td>7:53</td>
<td>00:14</td>
<td>Female rescued from Unit #3</td>
</tr>
<tr>
<td>7:57</td>
<td>00:18</td>
<td>Agent being applied to fire</td>
</tr>
<tr>
<td>7:59</td>
<td>00:20</td>
<td>(Unknown FD unit) pulling out a party in a wheelchair</td>
</tr>
<tr>
<td>7:59</td>
<td>00:20</td>
<td>Fire extinguished in two apartments at this time</td>
</tr>
<tr>
<td>8:00</td>
<td>00:21</td>
<td>S1 exiting for air bottles</td>
</tr>
<tr>
<td>8:02</td>
<td>00:23</td>
<td>A1 crew assisting with a third rescue on the north side of the building</td>
</tr>
<tr>
<td>8:05</td>
<td>00:26</td>
<td>Another victim found in Unit #6</td>
</tr>
<tr>
<td>8:12</td>
<td>00:33</td>
<td>A6 reporting another Unit in 10 (sic)</td>
</tr>
<tr>
<td>8:13</td>
<td>00:34</td>
<td>A1 has four victims outside—one victim on 02</td>
</tr>
<tr>
<td>8:14</td>
<td>00:35</td>
<td>Elderly female rescued by S1 from Unit #1</td>
</tr>
<tr>
<td>8:15</td>
<td>00:36</td>
<td>A6 reported one female rescued from Unit #10</td>
</tr>
<tr>
<td>8:16</td>
<td>00:37</td>
<td>A6 with another female from Unit #11</td>
</tr>
<tr>
<td>8:20</td>
<td>00:41</td>
<td>A6 with another victim in Unit #12—exiting with female in the wheelchair</td>
</tr>
<tr>
<td>8:28</td>
<td>00:49</td>
<td>Secondary search commenced</td>
</tr>
<tr>
<td>8:37</td>
<td>00:58</td>
<td>Four victims being transported</td>
</tr>
<tr>
<td>8:42</td>
<td>01:03</td>
<td>Units #7 and #10 ALL CLEAR</td>
</tr>
<tr>
<td>8:43</td>
<td>01:04</td>
<td>Units #32 through #35 ALL CLEAR</td>
</tr>
<tr>
<td>8:43</td>
<td>01:04</td>
<td>Units #11 and #6 ALL CLEAR</td>
</tr>
<tr>
<td>8:44</td>
<td>01:05</td>
<td>Units #5 and #12 ALL CLEAR</td>
</tr>
<tr>
<td>8:45</td>
<td>01:06</td>
<td>Units B and #4 ALL CLEAR</td>
</tr>
<tr>
<td>8:46</td>
<td>01:07</td>
<td>Units #41 through #45 ALL CLEAR</td>
</tr>
<tr>
<td>8:47</td>
<td>01:08</td>
<td>Units #3 and #14 ALL CLEAR</td>
</tr>
<tr>
<td>8:47</td>
<td>01:08</td>
<td>Units #46 through #53 ALL CLEAR</td>
</tr>
<tr>
<td>8:47</td>
<td>01:08</td>
<td>Units #15 and #2 ALL CLEAR</td>
</tr>
<tr>
<td>8:48</td>
<td>01:09</td>
<td>North Sector Command terminated</td>
</tr>
<tr>
<td>8:49</td>
<td>01:10</td>
<td>Units #16 and #1 ALL CLEAR</td>
</tr>
<tr>
<td>8:50</td>
<td>01:11</td>
<td>Units #21 and #22 ALL CLEAR</td>
</tr>
<tr>
<td>8:51</td>
<td>01:12</td>
<td>Unit #19 ALL CLEAR</td>
</tr>
<tr>
<td>8:53</td>
<td>01:14</td>
<td>Secondary Search completed</td>
</tr>
<tr>
<td>9:19</td>
<td>01:40</td>
<td>Fire out</td>
</tr>
</tbody>
</table>

Information taken from Mississauga Fire Department dispatch logs.

'ALL CLEAR is the terminology used by the fire service to indicate that the rooms have been searched and that there are no victims trapped within them.
V. ANALYSIS

Cause and Origin

The fire originated in the closet in Unit #3 and was determined by the Ontario Provincial Fire Marshal’s office to have been accidental. The fire was caused by smoking materials that had been left in the pocket of a sweater and then placed in the closet. The male occupant of the room was reported to smoke a pipe.

According to local investigators, smoking was discouraged in the resident’s rooms and permitted only in the common area.

Fire Growth and Spread

The fire was detected by a visitor in the room of origin. Upon detection, she called 911 to report the fire. During the call, the dispatcher could hear the building fire alarm system activate and the staff supervisor attempt to enter the room.

The wall coverings and carpet outside of the room of origin for 125 ft (38 m) were fully consumed. Extensive smoke damage occurred in the southwest and northwest wings as well as approximately one half of the southeast wing.

Smoke and fire spread occurred primarily through the open door of the room of origin into the common hallway and then into the other rooms. There was smoke spread into the void space above the room of origin and into the rooms via plumbing and electrical services and via the gap between the roof diaphragm and the top of the corridor wall, according to officials from the Ontario Fire Marshal’s Office.

Code Analysis

The 1994 edition of NFPA 101, Life Safety Code, was used in the evaluation of this facility.

Sprinklers

Since this facility is classified as a Type II (000) by NFPA 220, Standard on Types of Building Construction, 1995 edition, this facility would be required to be equipped with an automatic fire sprinkler system by Table 13-1.6.2 in 13-1.6.2 of the Life Safety Code. The only area of this building that was equipped with a sprinkler system was the basement. There were no other sprinkler systems in the facility.

Properly designed, installed, and maintained sprinkler systems have a proven track record of reducing the loss of life and property in many classes of properties. If a functional system had existed within this occupancy, the fire might have been controlled and limited to within the unit of origin instead of extending into the corridor. Lack of a suppression system is considered to be a major contributing factor to the outcome of this fire.

© NATIONAL FIRE PROTECTION ASSOCIATION • MISSISSAUGA, ONTARIO, FIRE INVESTIGATION REPORT
In buildings equipped with a properly designed, installed, and maintained sprinkler system, the performance record in regards to life loss is exceptional. NFPA has no record of a fire killing more than two people in a completely sprinklered public assembly, educational, institutional, or residential building where the system was properly operating.

Egress
The doors equipped with the delayed egress locks are permitted under 13-2.2.2.4, Exception No. 1.

Corridor Separation
The corridor wall that separates the individual units from the corridor is required to extend completely from the floor deck to the roof deck by 13-3.6.2.1 of the Life Safety Code. However, in this case, the wall terminated approximately 1 1/2-in. (38 mm) from the bottom of the roof deck. This gap was not fire-stopped. It was reported by the Ontario Fire Marshal’s Office that the smoke spread through the void space was a significant contributing factor to at least one of the fatalities.

Resident’s Capabilities
Based on the profile of the residents (as shown in the following table), NFPA defines the evacuation capabilities of this facility to be impractical when considering that there could be, in a worst case scenario, only two people on duty at night.

Resident Profile

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of residents requiring wheelchairs</td>
<td>20</td>
<td>28% of Total</td>
</tr>
<tr>
<td>Number of residents requiring walkers or canes</td>
<td>17</td>
<td>24% of Total</td>
</tr>
<tr>
<td>Number of residents mentally confused or suffering some degree of dementia</td>
<td>15</td>
<td>21% of Total</td>
</tr>
</tbody>
</table>

(Total Residents: 70)

Three quarters of the residents suffered from some degree of either physical or mental disability that may have affected their ability to self rescue during a fire.

Furnishings
Paragraph 31-4.5.2 of the Life Safety Code requires that newly introduced upholstered furnishings within health care occupations be tested for resistance smoldering ignition. The only exceptions that are permitted are for sprinklered occupancies.

The residents of this occupancy were allowed to bring in their own furniture, which included upholstered chairs, dressers, etc. According to the investigators, this material was not tested. The beds and bed frames were provided by the facility.

*Information provided by the Ontario Fire Marshal’s Office*
The combustibility of the furnishings in these occupancies is an important factor in developing a fire defense plan. It is important to regulate the fuel load in order to ensure that a fire would not overwhelm the fire protection design features.

**Staff and Resident Fire Safety Training**

The *Life Safety Code* requires in 31-4.1.2 that fire drills be conducted at least quarterly on each shift in order to train the staff in the correct actions to be taken if a fire should occur. The last recorded drill at this facility was in July, 1993. The presence of trained personnel that are prepared to take the correct actions is critical to reducing the potential for the loss of life in a building where a number of the occupants are not capable of self-preservation and who rely on the staff for a level of protection. A false alarm had occurred at the facility the day before this fire, and the fire department observed at the time that the staff was not sure what actions they were supposed to take in the event of an alarm.

**Door Self Closing Devices**

The *Life Safety Code* does not require that the corridor door for individual rooms be equipped with automatic door closers. Automatic door closers help to ensure that doors are in a closed position in the event of a fire. If the fire should occur within the room, the door closers will help to limit the fire spread to within a single room. If the fire should occur outside of the room, it will help to limit the spread of the smoke and fire into the room, providing the occupant with an increased level of protection and enhancing their chances for survival. In this case, the rooms were not equipped with such closers (and were not required by current NFPA documents). When the staff person responded to Unit #3 and opened the door, she left the door in the open position, which allowed the fire to spread into the corridor.

The lack of a requirement for automatic door closers is based on the premise that the staff will respond and close all of the doors, either confining the fire within the room of origin or limiting its spread into adjacent rooms. This did not occur in this case, and similar failures to close all doors have been documented in other fires.

Another fire investigated by NFPA occurred in a hospital where the door to the room of origin was left open by the staff person who responded to the fire. This was a critical factor in allowing the fire to spread into the corridor. This fire resulted in the deaths of five patients. There are several other fires that NFPA has investigated where an open door has been a contributing factor to the loss of life in health care occupancies.

**System Smoke Detection**

The *Life Safety Code* requires system smoke detection in the corridors of limited care facilities. (101:13-3.4.5.1) This occupancy was not equipped with such a system, but had system heat detectors in the hallways and in the individual rooms. In this particular scenario, however, such a deficiency was not a contributing factor to

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3NFPA Fire Investigation Report, Petersburg Hospital Fire, January 1995. See Appendix A for a copy of the Abstract from this report.
the loss of life. The room of origin was occupied by an alert and capable person at the time of the fire who detected and responded to the fire in its early stages. It would also appear that either the heat detector in the room of origin or in the hallway reacted to the fire and transmitted an alarm that brought the staff person to the room while the occupant was calling 911.

**Alarm Notification**

This facility was equipped with an alarm system that was monitored by an outside monitoring company. A call was placed by this company when the alarm was received at approximately the same time that the occupant of Unit #3 placed a 911 call directly to the fire department. There did not appear to be any delay in notifying the fire department.

**Combustible Wall Coverings**

The wall finish in the corridor was tested by the Ontario Fire College and found to be within the criteria for a Class A wall finish as referenced in 13-3.3.1 of the *Life Safety Code*. The carpeted floor covering in the hallway was not tested.
VI. DISCUSSION

The speed with which the fire grew and spread and subsequently killed eight residents demonstrates the need for a strong fire safety design and response in such a facility. The fact that the fire occurred at a time when a number of the occupants were probably awake (7:30 p.m.) also indicates that measures are needed to protect occupants who may not be fully capable, either physically or mentally, of responding quickly to an emergency.

The Life Safety Code espouses a “total concept” approach that should be used in developing a fire defense plan for health care occupancies. The provisions of Chapter 13 are all based on a “defend in place” philosophy.

101:13-1.1.3 Total Concept. All health care facilities shall be designed, constructed, maintained, and operated to minimize the possibility of a fire emergency requiring the evacuation of the occupants. Because the safety of health care occupants cannot be ensured adequately by dependence on evacuation of the building, their protection from fire shall be provided by appropriate arrangement of facilities, adequate staffing, and development of operating and maintenance procedures composed of the following:

(a) Design, construction, and compartmentation; and
(b) Provision for detection, alarm, and extinguishment; and
(c) Fire prevention and the planning, training, and drilling in programs for the isolation of fire, transfer of occupants to areas of refuge, or evacuation of the building.

The following discussion addresses each of the three areas mentioned above.

Compartmentation

Open door to the room of origin. The fire spread into the corridor through the open door to the room of origin. This door, which was not equipped with an automatic door closer, was left open by the staff member who had responded to the alarm. If the door had been equipped with a door-closing device, or if the staff member had closed it, the fire could have been contained within the room (or compartment) of origin. This would have provided a level of defense for the other occupants.

All of the fatalities occurred in the two wings that were on one side of a set of corridor smoke doors. These doors operated as designed and limited the smoke spread to the two wings, demonstrating the value of compartmentation.

The need for automatic door-closing devices was recognized by the jury of the Coroner’s Inquest and reflected in their recommendation:

“B.12. That the Ontario Fire Code require that door closures be a mandatory retrofit in all Residential Care Homes.”

"Verdict of the Jury, October 16, 1995 to July 19, 1996, Office of the Chief Coroner. See Appendix D for full text of recommendations"
This has been a common significant factor (among others) in a number of fires which NFPA has investigated.
- Board and Care Fire, Mississauga, Ontario, 3/21/95, eight fatalities
- Board and Care Fire, Broward County, Florida, 12/1/94, five fatalities
- Hospital Fire, Petersburg, Virginia, DATE, five fatalities
- Hospital Fire, Brooklyn, New York, 9/1/93, three fatalities
- Nursing Home Fire, Dardanelle, Arkansas, 3/13/90, four fatalities
- Nursing Home Fire, Norfolk, Virginia, 10/5/89, twelve fatalities
- Hospital Fire, St. Jerome, Quebec, 1/29/89, two fatalities
- Hospital Fire, Kansas City, Missouri, 12/30/86, two fatalities
- Hospice Fire, Southfield, Michigan, 12/15/85, eight fatalities
- Nursing Home Fire, Mississauga, Ontario, 7/14/80, twenty five fatalities

In all of these fires, the occupants were not fully capable of self preservation, and were dependent to some degree upon the structure providing them with a higher level of protection. A closed door on the room of origin will help to confine the fire to the room and provide additional time for the other occupants to either escape or for fire suppression efforts to begin.

**Smoke penetration into other rooms.** The smoke penetration into the other rooms was sufficient to cause one fatality, even though the door was closed. Smoke spread occurred between the jamb and the doors and via the pipe chase in the bathroom into the occupied room.

**Extinguishment**

**Lack of automatic suppression system.** A sprinkler system probably would have controlled the fire and stopped it from spreading beyond the room of origin.

A properly designed, installed, maintained, and operated automatic sprinkler system has a proven track record. According to NFPA records, no fire in a completely sprinklered public assembly, educational, institutional or residential building has killed more than two people.

Following this fire, an inquest was called by the Office of the Chief Coroner. A number of specific recommendations were made following this inquest (see Appendix D for a complete copy of the recommendations). Several were made relating to sprinkler protection in these occupancies:

A.5. That full automatic sprinklering be mandatory for all Residential Care Homes. Exceptions to this requirement may be permitted for: (i) buildings of limited occupancy. (less than 8 residents).

B.1. That full automatic sprinklering be a mandatory retrofit requirement for all Residential Care Homes except those in recommendation A.3.(I).

B.2. That full automatic sprinklering be a mandatory retrofit requirement for all B2 institutional facilities with exceptions as in A.3.(i).
The outside of the door to a room to the southwest of the room of origin was damaged by the fire. As can be seen in the second photo, the inside was relatively intact. However, the occupant of this room died from smoke inhalation injuries, even though the door was closed during the fire.

Following this fire, extensive testing was done by the Ontario Fire Marshal’s office. The room of origin was re-constructed at a test facility, and a series of test burns were done in order to replicate the conditions at the time of the fire. When test burns were done with a sprinkler system installed, the only fire damage was a slight charring of the shelf in the closet and some burned clothes.

One example of the value of a sprinkler system is a 1992 multi-story nursing home fire in Woburn, Massachusetts. All 101 residents of the facility were successfully evacuated and the fire controlled by the sprinkler system. There are a number of incidents, however, where the lack of a sprinkler system was a factor in the loss of life. A bibliography on articles and reports relating to these fires is included in an appendix to this report.
NFPA 101 now requires automatic sprinkler systems in all new health care facilities and those facilities being renovated. (101:13-1.1.4.5)

**Failure to manually suppress the fire.** The facility was equipped with 5 manual hose stations in the corridors. NFPA documents do not require that the staff be trained in the use of manual hose stations. If there had been staff present who were properly trained in its use, however, they may have been able to either suppress the fire or contain it to within the room of origin until the arrival of the fire department.

**Fire Safety Training**

*Fire Prevention and Fire Drills.* NFPA has been able to verify that fire prevention and fire drills have a demonstrably positive impact when a fire does occur. It would appear that in this facility a strong emphasis was not placed upon preparing the staff for a fire situation. The simple act of closing the door to the room of origin would have had a critical impact upon the spread of smoke and fire beyond the room. If the door had been closed, the other residents of the facility may not have been exposed to the products of combustion at lethal concentrations.

In a health care occupancy where the occupants are not always capable of self-preservation, a higher level of reliance is placed upon the staff to take the proper actions during a fire. Providing the staff with guidelines and the preparation to deal with such a fire emergency is an important step towards the “total concept” mentioned in the *Life Safety Code*.

Again this was recognized by the jury in the Coroner’s Inquest following this fire. Specific recommendations in this area included:

B.3. That the Ontario Fire Code require monthly fire drills for all staff on all shifts for Residential Care Homes.

B.5. That the Ontario Fire Code require all Residential Care Home staff be fully trained and tested in emergency procedures prior to assuming any employment duties, and to require annual retraining and testing be performed.

**Staffing.** Staffing levels are an important aspect that must be considered. A balance must be taken between the level of passive and active fire protection systems and the need to either defend in place or evacuate a facility. If there are inadequate fire protection design features, then it may fall to the staff to evacuate the endangered occupants. If there is an inadequate ratio of staff to occupants to safely evacuate in a timely manner the residents who are at risk, then other measures must be taken to protect these residents.

Again, this area was addressed in the Coroner’s Inquest:

B.4. That the Ontario Fire Code require sufficient staff to be on duty at all times to carry out the Fire Safety Plan in all Residential Care Homes.

B.9. That the Ontario Fire Code require the Ontario Fire Marshal’s Office, or any municipal fire department authorized by them, to annually determine the minimum number of staff necessary to carry out the Fire Safety Plan for each Residential Care Home, and to notify the Residential Care Home Operator of same in a binding and enforceable manner.
VII. CONCLUSIONS

This is the second tragic fire to occur in Mississauga in a facility housing elderly residents investigated by NFPA. In 1980 a fire in a nursing home claimed the lives of 25 residents. Significant factors in that incident included rapid fire development; failure to extinguish the fire in its incipient stage; failure to keep the door of the room of origin closed; improper actions of the staff; and delayed alarm to the fire department.

A “defend in place” fire protection philosophy is necessary in occupancies such as these due to the physical and mental conditions of the residents. Such a philosophy entails a strong fire prevention and training program for residents and staff on an ongoing basis in order to avoid having a fire occur in the first place. However, if a fire should break out, it is vital that the staff take the proper actions to contain the fire and protect the other residents of the building, realizing that evacuation might not be possible.

Properly designing the building and its systems to provide a significant level of protection is also a critical component of the fire defense strategy. Compartmentation and extinguishment are two key factors that must be considered when building these occupancies or renovating existing ones.

Strong efforts are necessary, both in building design and staff response, to ensure that an adequate level of protection is provided to occupants who are not capable of fully protecting themselves from a fire. As we saw in this incident, and have seen in many others, too often these deficiencies combine, leading to tragic consequences.
VIII. NFPA REFERENCES


101:13-1.1.4.5 Renovations, Alterations, and Modernizations. Renovations, alterations, and modernizations shall comply, to the extent practical, with requirements for new construction in accordance with 1-4.6. Where such renovations, alterations, or modernizations are done in a nonsprinklered facility, the automatic sprinkler requirements of Chapter 12 shall apply to the smoke compartment undergoing the renovations, alteration, or modernization. However, in cases where the building is not protected throughout by an approved, automatic sprinkler system, the requirements of 13-1.6 and 13-2.3.2 shall also apply. Exception No. 2 to 12-3.7.3 shall be permitted only where adjacent smoke compartments are protected throughout by an approved, supervised automatic sprinkler system in accordance with 12-3.5.2. Where minor renovations, alterations, modernizations, or repairs are done in a nonsprinklered facility, the requirements of 12-3.5.1 shall not apply, but, in such cases, the renovations, alterations, modernizations, or repairs shall not reduce life safety below that which existed before, nor below the requirements of Chapter 13 for nonsprinklered buildings.

101:13-1.1.1.7 It shall be recognized that, in buildings housing certain types of patients...it might be necessary to lock doors. In such instances, the authority having jurisdiction shall make appropriate modifications to those sections of this Code that would otherwise require means of egress to be kept unlocked.

101:13-2.2.2.4 Doors within a required means of egress shall not be equipped with a latch or lock that requires the use of a tool or key from the egress side. Exception No. 1: Door locking arrangements shall be permitted in health care occupancies or portions of health care occupancies where the clinical needs of the patients require specialized security measures for their safety, provided keys are carried by staff at all times. (See 13-1.1.1.7 and 13-2.2.2.5.)

101:13-2.2.2.5 Doors located in the means of egress that are permitted to be locked under other provisions of this chapter shall have adequate provisions made for the rapid removal of occupants by such reliable means as the remote-control of locks or by keying all locks to keys carried by staff at all times. Only one such locking device shall be permitted on each door.

101:13-3.3.1 Existing interior finish on walls and ceilings throughout shall be Class A or Class B in accordance with Section 6-5.

101:13-3.4.5.1 Corridors. An approved, automatic smoke detection system shall be installed in all corridors of limited care facilities. Such system shall be installed in accordance with Section 7-6.

101:13-3.6.2.1 Corridor walls shall be continuous from the floor to the underside of the floor or roof deck above, through any concealed spaces, such as those above
the suspended ceilings, and through interstitial structural and mechanical spaces, and shall have a fire resistance rating of at least 20 minutes.

101:31-4.5.2 Newly introduced upholstered furniture within health care occupancies shall be tested in accordance with the provisions of 31-1.4.2 (b). (NOTE: 101:31-1.4.2 (b) concerns the testing methods to be used.)

101:31-4.1.2 Fire exit drills in health care occupancies shall include the transmission of a fire alarm signal and simulation of emergency fire conditions. Drills shall be conducted quarterly on each shift to familiarize facility personnel (nurses, interns, maintenance engineers, and administrative staff) with signals and emergency action required under varied conditions. When drills are conducted between 9:00 p.m. (2100 hours) and 6:00 a.m. (0600 hours), a coded announcement shall be permitted to be used instead of audible alarms.
Appendix A

ABSTRACT

NFPA Fire Investigation Report
Petersburg Hospital Fire
December 31, 1994

The following abstract from an NFPA report is provided in order to illustrate the results of a staff person failing to close the door to the room of origin after discovering the fire, as was seen in Mississauga.

At approximately 9:00 p.m. on Saturday, December 31, 1994, a fire occurred in a 468-bed hospital in Petersburg, Virginia. The fire, which was caused by smoking materials, resulted in the deaths of five patients.

The hospital, a full-care facility, was housed in a high-rise building of fire-resistant construction. The building had been equipped with many of the fire protection features currently required by fire safety codes, and hospital staff had been trained to respond to fire emergencies.

The fire began in a patient's room, apparently as the result of the improper use of smoking materials, which ignited bedding, including an “air flotation” mattress with foam plastic padding. The fire intensified briefly when fed by oxygen released from the hospital's piped oxygen distribution system.

Smoke spread into the corridor and other patient rooms because the door to the room of fire origin was not closed. Smoke also spread into a noncombustible concealed space above the ceilings of the patient rooms on the same side of the corridor as the fire room. The smoke was able to enter these concealed spaces because the walls between these rooms were not continuous from the floor to the underside of the floor above. The smoke seeped from the concealed space into the patient rooms below, increasing the amount of smoke that accumulated in them.

The patient in the room of fire origin was killed, and the contents of the room were destroyed. Three other patients died in the area in which the fire occurred, as did one patient in an adjacent area. Even though this last patient was in a remote area, the death was attributed to the fire.
The NFPA investigation and analysis of findings revealed that the following factors contributed to the loss:

- Delayed fire discovery.
- Delayed fire alarm transmission to the fire department because the connection was taken out of service.
- The severity of the fire when it was discovered.
- The rapid fire growth and the rapid development of untenable conditions.
- The open door between the room of fire origin and the corridor.
- Walls between individual rooms that were not continuous from slab to slab.
- Lack of sprinkler system in the room of origin or in the corridor.
Appendix B

Bibliography of related NFPA Journal articles and reports

Full NFPA Articles:


Firewatch Articles:
Fire Journal, Mar/Apr 1990.
Appendix C

The following are the recommendations made following the Coroner’s Inquest.

Recommendations

A. Building Code

1. That in the next regular revision, we believe is due in fall 1996, of the Ontario Building Code the major use and occupancy of Residential Care Homes be classified under a new and distinct category based on the vulnerability of the tenants to fire.

2. That the Ontario Building Code define Residential Care Homes as; “those facilities that provide 24 hour supervision of residents, including meals and optional supplemental care.”

3. That full automatic sprinklering be mandatory for all Residential Care Homes. Exceptions to this requirement may be permitted for:

   (i) buildings of limited occupancy. (less than 8 residents)

4. That unless and until a new and distinct category is implemented, the Ontario Building Code be immediately amended to define the major use of and occupancy of retirement homes as institutional.

5. That full automatic sprinklering be mandatory for all B2 institutional facilities with exceptions as in A.3.(i).

6. That fire doors be mandatory every one hundred feet in all Residential Care Homes in order to create smaller fire partitions.

7. That it be mandatory that all interior suite doors have a fire rating of at least twenty (20) minutes.

B. Fire Code

1. That full automatic sprinklering be a mandatory retrofit requirement for all Residential Care Homes except those in recommendation A.3.(i). The additional costs involved in this mandatory retrofit could be funded through the Low Rise Rehabilitation Program of the Ministry of Housing if this program is still in effect.

2. That full automatic sprinklering be a mandatory retrofit requirement for all B2 institutional facilities with exception as in A.3.(i).
3. That the **Ontario Fire Code** require monthly fire drills for all staff on all shifts for Residential Care Homes.

4. That the **Ontario Fire Code** require sufficient staff to be on duty at all times to carry out the Fire Safety Plan in all Residential Care Homes.

5. That the **Ontario Fire Code** require all Residential Care Home staff be fully trained and tested in emergency procedures, prior to assuming any employment duties, and to require annual retraining and testing be performed.

6. That the **Ontario Fire Code** require records be kept of all pertinent fire safety measures, including:
   
   (i) all matters presently required to be recorded;  
   (ii) the names of staff on each shift;  
   (iii) details of the training and testing of each staff member;  
   (iv) details of all fire drills; and  
   (v) all other matters necessary to determine Fire Code compliance on an ongoing basis.

7. That the Ontario Fire Marshal’s Office, or any municipal fire department authorized by them, make annual unannounced inspections of all Residential Care Homes on a cost recovery basis including:
   
   (i) a complete inspection;  
   (ii) an annual review and approval of the Fire Safety Plan;  
   (iii) an annual attendance at a full evacuation fire drill, and review of staff training records.

8. That the **Ontario Fire Code** require:
   
   (i) the Fire Safety Plan to identify those residents vulnerable to fire, and the location of their accommodation on an ongoing basis;  
   (ii) that room numbers also be posted at floor level on all interior suite doors and at windows on the exterior of the building;  
   (iii) a copy of the current Fire Safety Plan, master keys, and a current list of residents, including photographs and medical problems, must be kept at all times in a standardized locking box accessible to emergency personnel. This list of residents should be updated at least every six months as resident’s appearances and medical condition change. New residents should be added to the list on admission to facility.

9. That the **Ontario Fire Code** require the Ontario Fire Marshal’s Office, or any municipal fire department authorized by them, to annually determine the minimum number of staff necessary to carry out the Fire Safety Plan for each Residential Care Home, and to notify the Residential Care Home operator of same in a binding and enforceable manner.
10. That the **Ontario Fire Code** be vigorously enforced in Residential Care Homes.

11. That the **Ontario Fire Code** require mandatory retrofit of fire doors every 100 feet for fire separation in Residential Care Homes.

12. That the **Ontario Fire Code** require that door closures be a mandatory retrofit in all Residential Care Homes.

13. That the **Ontario Fire Code** require that floor and window coverings have a maximum Flame Spread Rating of 150.

14. That the **Ontario Fire Code** require signs relating to unlocking, self-locking doors beside each exit door.

15. That the **Ontario Fire Code** require mandatory retrofit to ensure all interior suite doors have a fire rating of at least twenty (20) minutes.

**C. Mississauga Fire Department**

1. That the Mississauga Fire Department continue its efforts in contacting Residential Care Homes for the purposes of ensuring the delivery of fire safety programs to that industry.

2. That the Mississauga Fire Department ensure that all fire suppression vehicles have an up-to-date tactical survey of all Residential Care Homes in the city.

3. That the Mississauga Fire Department assign a full-time firefighter/driver to the District Chief’s vehicle in order to facilitate the implementation of the incident command system for fire suppression operations.

4. That the Mississauga Fire Department review its preassigned emergency response to Residential Care Homes for the purpose of ensuring an adequate first response - given the unique requirements of the occupants in these homes.

5. That the Mississauga Fire Department with a second alarm should automatically dispatch the Emergency Service Unit, Air/Light truck and a Mississauga Transit bus.

6. That the Mississauga Fire Department give serious consideration to increasing resources in the fire prevention division with specific attention to the Residential Care sector.

7. That the Mississauga Fire Department adopt a system to identify when primary and secondary room searches have been completed to avoid duplication of searches.
8. That the incident commander of the fire department coordinate with the duty inspector or a senior police official to designate an information officer to provide up-to-date information to the public during the emergency. This officer should be clearly identified and visible with a fluorescent vest or similar type equipment. The residents list from the locked box is to be used by this person to account for the whereabouts of residents during an emergency.

9. That the Mississauga Fire Department seriously consider increasing the number of firefighters available to man the emergency vehicles at all times. Failing this not to allow the manpower levels to drop below the minimum levels of four per pumper truck and three for aerial trucks.

D. **Landlord and Tenant Act**

1. That the [Landlord and Tenant Act](#) or any new law replacing same, clarify that the landlord and tenant may contract for:

   (i) the landlord to have reasonable access for delivery of contracted care services, including supervisory care;
   
   (ii) the landlord to have reasonable access to inspect fire detection and suppression equipment such as smoke alarms, heat detectors, and sprinklers.
   
   (iii) the implementation of a no-smoking policy within Residential Care Homes suites, but a designated general smoking area should be established.

2. That Residential Care Home operators should be entitled to transfer residents to alternative facilities when the level of care needs change, subject to the appropriate protections;

   (i) with consent of the resident, a lawfully authorized substitute decision maker, or the Public Guardian and Trustee; and
   
   (ii) where the care needs have been evaluated by a regional assessor; and,
   
   (iii) where alternative accommodation is available.

3. Residential Care Home operators on transferring residents will only be able to recover the rent for that month in which the transfer occurred and not sixty days. This will also apply in the case of the death of a resident.

4. That residents of Residential Care Homes can contract for supplementary care of services from the owner or from any outside agency that supplies care.

5. That any new law that may replace the Landlord and Tenant Act address the security of tenure of Residential Care Home residents be subject to due process of law including an appeal mechanism, to protect against;
(i) arbitrary or capricious transfers or evictions; and
(ii) the transfer or eviction of "whistle blowers"

6. That in matters within the jurisdiction of the Fire Code Commission, the Building Code Commission and Health Protection Appeal Board, any resident or their advocates shall have the same formal standing as given to the owners/operators.

**E. Ontario Fire Marshall's Office**

1. We the jury endorse the DRAFT MANUAL, JAN. 1996, prepared by the Ontario Fire Marshall and the Ontario Residential Care Association with respect to fire safety plans for Residential Care Homes. (EXHIBIT 57)

2. That the Ontario Fire Marshall develop standard fire safety training guidelines for all staff in Residential Care Homes.

**F. Residential Care Facilities**

1. We the jury endorse the guidelines presented by the Ontario Residential Care Association, exhibit #55, section 1, subsection 20, paragraphs 1, 2, 3 and 4, with respect to fire drills and evacuations.

2. That the owner of the Residential Care Home be responsible for the maintenance of the fire detection system components such as smoke detectors, heat detectors, and sprinklers in the individual units.

3. That a new registry of all Residential Care Homes with a copy of an approved fire plan be kept by the Ontario Fire Marshall and a copy sent to Ministry of Housing if the Rent Registry under the Rent Control Act, 1992 is abolished.

4. That the fire drills performed at the facility where possible should include invited family members.

5. That all Residential Care Homes have a sign in/sign out log book for residents and their visitors. This must be used at all times to account for the whereabouts of residents and visitors. The receptionist or duty supervisor is responsible for the maintenance of this log book. All visitors must be informed of this log book by an appropriately posted sign.

6. That there be a background check by the police department on all owners and prospective staff of Residential Care Homes. (Exhibit 121, Dr. Lightman's Report of the Commission of Inquiry, 1992. Recommendations 89 through 92).
G. General

1. That the Triage Area be better identified during an emergency. The use of flags is suggested.

2. That the combined emergency services be involved in an annual Disaster Management Workshop under the direction of the local fire chief. This would be to promote teamwork and better use of these emergency services.

3. That the Halton Mississauga Ambulance Service give serious consideration to adding more staff and vehicles due to the rapid growth of our population.

4. That the Halton Mississauga Ambulance Service give serious consideration to providing portable radios to each attendant.

5. That the Mississauga Fire Department expedite the delivery and installation of the new radio communications system which is to be used by all emergency services.

6. That due to the rapid growth of our aging population the Provincial Government give serious consideration to providing more regional multiple use facilities similar to Malden Park Lodge which provide for continuum of care.

Examples:
(i) nursing home care;
(ii) respite, to provide relief for family caregivers;

7. That all maintenance personnel be given adequate training to carry out inspections of fire safety equipment and in keeping any and all log books pertaining to fire safety equipment up-to-date.

8. That we the jury should re-convene in one years time in order to establish if any or all of the above recommendations have been implemented.

H. Communications

1. We the jury commend the staff of the Peel Regional Police, who where members of 12 Division on the night of the fire at Meadowcroft Retirement Home, March 21, 1995. We make special commendations to the following police officers for heroism in rescue efforts at the fire; Sgt. Andrew Lavery, Cst. Robert Gravel, Cst. Oral Sybblis, Cst. G. Taylor, Cst. Paul Pogue, Cst. Jeffrey Baker, Cst. Darren Barbas, Cst. Fortunato Manvati.

2. We the jury commend Captain Doug Wilson, Firefighters Harley May and Mike Scarangella for heroism in rescue efforts at the Meadowcroft fire scene.
3. We the jury commend Mrs. Gloria Chavez, staff member at Meadowcroft, Mr. Mervyn Dupuis and Mr. Peter Howell, volunteer firemen from Cobden, Ontario, for heroism in rescue efforts at the Meadowcroft fire scene.

4. We the jury commend Mr. Michael Butt and Mr. Kevin Rushton of Halton and Mississauga Ambulance services for their efforts at the fire scene.

5. We the jury commend Detective Spiro Misevski of Peel Regional Police, 12 Division for his tireless efforts during this inquest.

6. We the jury would like to thank Geri Oke, Court Liaison Officer, Peel Regional Police, for all her assistance before and during this seventy-two day inquest.

7. We the jury would like to thank the Crown Counsel, Mark Saltmarsh and assistant Dave Maylor for providing us with a comprehensive and thorough explanation of events that led us to this inquest.

8. We the jury would like to thank Dr. Peter Clark, Coroner for this inquest, for his guidance and assistance in this complex hearing.