THE CITY OF NEW YORK
DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Michael R. Bloomberg
Mayor

Thomas R. Frieden, M.D., M.P.H.
Commissioner

nyc.gov/health

Report to City Council on Local Law 20: Public Access Defibrillator Use In New York City

July 5, 2006

Prepared by the
Division of Health Promotion and Disease Prevention
Bureau of Chronic Disease Prevention and Control

Executive Summary

Out-of-hospital sudden cardiac arrest is responsible for an estimated 160,000 deaths a year nationally.[1] If caused by an abnormal heart rhythm, the use of an automated external defibrillator (AED) can be life-saving. When applied properly to the individual an AED performs an analysis of the heart rhythm, determines if defibrillation is required and, if needed, delivers an electrical shock. In March 2005, the New York City Council enacted Local Law 20, requiring the placement of AEDs in specific public places. Local Law 20 took effect on July 5, 2005.

The New York City Department of Health and Mental Hygiene (DOHMH) issued rules to implement this new law in November 2005 which require that Public Access Defibrillators (PAD) be acquired, possessed and operated in accordance with New York State Public Health Law §3000-b, and that require training on their use and registration of the devices with the Regional Emergency Medical Services Council of New York City, Inc. (REMSCO). DOHMH also contracted with REMSCO to develop and implement an online registration system intended to facilitate registration, reduce paperwork, and improve the scope and accuracy of future reporting to City Council. This system is operational as of June 15, 2006.

DOHMH publicized the new regulations by sending letters to health clubs and nursing homes in the city informing them of the new law; by setting up a 311 system that provides information to the public about the law and available training sites, and receives complaints; and by building a DOHMH webpage that provides access to the text of the various laws, rules, and training and registration information. Over 1000 AED related calls have been received by the 311 system since the implementation of the law but only one complaint has been lodged with DOHMH. DOHMH is following complaint protocols created to address the new regulations and is currently awaiting a response from the facility.

REMSCO reports that 1941 PADs are registered. DOHMH has identified an additional 491 devices operated by city agencies that are in the process of being registered. Registration and reporting of PAD uses appears to vary among all types of facilities, thus data completeness is not assured.

There were 124 documented PAD uses reported to REMSCO for the period of July 1, 2005 through May 31, 2006. During that same time period**,** there were a total of 6152 out-of-hospital cardiac arrests reported in New York City. While acknowledging gaps in the existing data, they show that survival from out-of-hospital cardiac arrests in NYC associated with the use of PADs is estimated at between 0.13% (FDNY data based upon survival to hospital admission, discharge or transfer) and 0.41% (REMSCO data based upon return of pulse following PAD use) of all out-of-hospital cardiac arrests related deaths.

It is well documented that PADs placed in high traffic areas (e.g.: airports, other transportation hubs) and in places where people who are at a high risk for sudden cardiac

arrest live or congregate (e.g.: nursing homes, senior centers) have a higher likelihood of saving lives.[2,3,4,5,6,7] While individual lives have been saved through the use of AEDs in the out-of-hospital setting, there were no documented lives saved at locations where PADs were required by Local Law 20, although two saves occurred at health clubs/gyms, originally covered by the law. PAD uses were reported in several nursing homes implying a potential for improvement in survival rates in these facilities.

While further improvements in survival from sudden out-of-hospital cardiac arrest are clearly needed, available data from the first year did not provide evidence of any impact of Local Law 20 on survival rates in New York City. However, data are incomplete and it is possible that cases of successful resuscitation were missed.

Report on Local Law 20:
PAD Use in New York City Since Implementation

1.0 Introduction

Out-of-hospital sudden cardiac arrest is responsible for an estimated 160,000 deaths a year nationally.[8] If arrest is due to an abnormal heart rhythm such as ventricular fibrillation (VF) or ventricular tachycardia (VT), death may be averted if a quick and effective shock is delivered with a defibrillator and a normal rhythm is restored. Approximately 20-38% of sudden cardiac arrests are caused by VF/VT.[9,10] Automated external defibrillators (AEDs) make the use of defibrillators in the community by non-medical personnel possible. When used properly, the device performs an analysis of the heart rhythm, determines if defibrillation is required and, if needed, delivers an electrical shock.

In March 2005, the New York City Council enacted Local Law 20, requiring the placement of AEDs in certain public places. Local Law 20 took effect on July 5, 2005. The New York City Department of Health and Mental Hygiene (DOHMH) issued rules to implement this new law in November 2005. Local Law 20 and the DOHMH rules state that any required AED be acquired, possessed and operated in accordance with New York State Public Health Law §3000-b, which requires training of personnel and registration of the devices with the Regional Emergency Medical Services Council of New York City, Inc. (REMSCO) before they can be used by non-health care professionals.

These regulations only govern Public Access Defibrillation (PAD) provider sites, defined as sites where AEDs are used by non-medical personnel. The regulations do not cover the use of AEDs as part of medical response by emergency medical systems (EMS) personnel, including emergency medical technicians and paramedics, nor do they govern the use of AEDs in medical facilities that have more advanced levels of medical care or PAD sites not covered by Local Law 20. While many patients receive defibrillation from trained EMS personnel, PAD use is much less frequent.

See attachments:

- NYC DOHMH Rule Implementing Section 17-188 of the Administrative Code Requiring Placement of Automated External Defibrillators in Certain Public Places

2.0 Implementation Activities

2.1 Regulatory

2.1.1 Regulations

DOHMH drafted regulations governing the implementation of Local Law 20 and released them in November of 2005. These regulations are detailed in the following sections.

2.1.2 Facilities Regulated by Local Law 20

Local Law 20 requires the placement of AEDs in the following public places:

- Nursing homes;*
- Senior centers;
- The publicly accessible portions of buildings maintained by the Department of Citywide Administrative Service's (DCAS) Division of Facilities Management and Construction;
- Selected city-operated parks;
- Ferry terminals owned and operated by the City with a passenger capacity of ≥ 1000;
- All golf courses, stadia and arenas.

* Nursing homes that already provide advanced life support, which includes use of a manual or automated defibrillator and trained physicians, registered nurses or emergency medical technicians present on-site 24 hours a day, seven days a week, are exempt from these regulations. However, those nursing homes that do not have a manual defibrillator or AED are required to obtain an AED(s) and to have at least two staff members trained in the use of an AED on premises at all times.

Local Law 20 also sought to require that health clubs, gyms, health spas, health or weight control studios, martial arts and self defense schools, and other physical fitness centers with a membership ≥250 have an AED. However, Section 631 of the New York State General Business Law ("GBL") was found to preempt the Local Law 20 health club requirement. New York State law, specifically Section 627-a of the GBL, which went into effect on July 20, 2005, does require the placement of AEDs in health clubs statewide with membership ≥500. Therefore, while Local Law 20 does not apply to health clubs, and other types of physical activity centers, the State law does apply and must be followed.

2.1.3 Compliance with New York State Law

Any AED required by Local Law 20 shall be acquired, possessed and operated in accordance with the requirements of §3000-b of the New York State Public Health Law.

Collaborative Agreement

Any facility with an AED for use by non-medical personnel must have a collaborative agreement with an emergency health care provider. The collaborative agreement shall include a written agreement, written practice protocols (including a Site-Specific

Response and Maintenance Plan), and policies and procedures that shall assure compliance with NYS Public Health Law §3000-b. The facility shall register and file a copy of the collaborative agreement with REMSCO prior to operating the AED.

Site-Specific Response Plan
A written Site-Specific Response and Maintenance Plan, including written practice protocols, is required and must be made available to the DOHMH upon its request. Specifics to be included in the plan are outlined in the regulations and are summarized below.

The Site-Specific Plan must include the following:
1. A list of all trained responders, a description of the specific training they received, information on how they can be contacted, and the locations of the trained responders at the site.
2. The provider of the AED/CPR (cardiopulmonary resuscitation) training received by each trained responder, the date that training was received as well as the due dates for training recertification of each trained responder.
3. The specific location(s) of the AED(s) at the public place. The AED(s) shall be in a location(s) accessible to the trained responder(s).
4. The party responsible for verifying that the AED(s) is in operable condition and for ensuring that the equipment is maintained in conformity with the manufacturer's recommendations.
5. The placement and exact location of the AED signage which includes information on how to contact the site's trained responder(s).
6. Instructions on how to identify an on–site medical emergency and a listing of procedures to be followed to notify trained responders of the existence of that emergency.
7. Procedures to be followed to notify the emergency medical services system (i.e.: 911 or other contracted emergency medical providers) as to the existence of an on-site medical emergency.
8. How the trained responder(s) at a site will be dispatched to the location of the medical emergency.
9. The procedures to be followed by the trained responder(s) at the location upon their response to the identification of a medical emergency.
10. Procedures to be followed by trained responders upon their transfer of care of an emergency to the emergency medical services system.
11. Instructions on how to document each use of an AED and immediately report such usage in accordance with NYS Public Health Law §3000-b.

Other State Requirements
Any person, firm, organization or other entity possessing or operating an AED pursuant to a collaborative agreement is a "public access defibrillation provider". Such PAD providers must, in addition to the above requirements, also comply with the following:

- Maintain and test the AED according to applicable standards of the manufacturer and any approved government agency.
- Notify REMSCO of the existence, location, number, and type of any AED it possesses.

- Report every use of the AED immediately to the emergency health care provider who is party to the Collaborative Agreement who is then required to report the use to REMSCO.

2.1.4 Placement of AEDs

AEDs are required to be located in a prominent location and placed so that the equipment can be accessed at all times in a timely manner by persons trained in their operation.

For those buildings operated by the Division of Facilities Management and Construction of the Department of Citywide Administrative Services (DCAS) with publicly accessible areas located more than five floors apart, no such publicly accessible area shall be more than five floors from where an AED is located.

2.1.5 Signage Requirement

AED signage informing the public of the availability of an AED at that location is required on the wall and on the face of the storage container in which the AED is contained. Owners or operators of the facility are required to conform to the specific signage requirements described in the DOHMH rules. The DOHMH has offered to supply the necessary signage at no cost to either public or private facilities required to have an AED. The facility can alternatively use its own signage provided that the sign(s) used meets the requirements specified in the regulations.

2.1.6 Training

Every facility mandated to have an AED must identify and arrange to have employees trained in their operation and in cardio-pulmonary resuscitation (CPR) by a training facility that has been approved by New York State Department of Health.

The number of trained responders in each public place shall be commensurate with the size and configuration of the facility to permit rapid response during regular business hours. Nursing homes are required to have at least two staff members trained in the use of an AED on premises at all times.

2.1.7 The Regional Emergency Medical Services Council of New York City

REMSCO is contracted by the New York State Office of Emergency Medical Services and is responsible for coordinating medical services in all five boroughs of New York City, operating under Article 30 of the New York State Public Health Law. Empowered by this statute, REMSCO is also the regional governing authority on PAD programs in New York City.

To help REMSCO fulfill their mandate and to ensure accurate registration of PADs and collection of pertinent data, DOHMH contracted with REMSCO to design, develop and implement an online registration system hosted on their website. The system is

operational as of June 15, 2006 is intended to facilitate easier registrations, reduce paperwork, and improve the scope and accuracy of future reporting to City Council.

2.2 Education Activities

2.2.1 Mailings/Notifications

Health clubs and nursing homes in New York City were notified that Local Law 20 was enacted and went into effect as of July 5, 2005. DOHMH sent letters to facilities on July 20, 2005 and July 29, 2005 respectively informing them about the new law's requirements and directing them to resources and information on compliance.

2.2.2 311 Information

DOHMH implemented a 311 response system via the Department of Information Technology and Telecommunications (DoITT) 311 system. Inquiries about "AEDs" or "defibrillators" are addressed by providing information regarding available training centers and/or callers are directed to the DOHMH Cardiovascular Disease Prevention and Control Program for more information.

Complaints and Inquiries through the 311 System to Date

To date, 311 has received 1005 calls requesting information on AED training or other general inquiries about Local Law 20. Requests for information on CPR/AED training have been increasing over the last year and demonstrate a large public interest in CPR and AED training.

Date	311 Inquiry by month	Monthly Total	Total since system established
Aug-05	CPR or Defibrillator Training	0	0
	Defibrillator Law Inquiry	1	1
Sep-05	CPR or Defibrillator Training	41	41
	Defibrillator Law Inquiry	5	6
Oct-05	CPR or Defibrillator Training	127	168
	Defibrillator Law Inquiry	1	7
Nov-05	CPR or Defibrillator Training	83	251
	Defibrillator Law Inquiry	0	7
Dec-05	CPR or Defibrillator Training	84	335
	Defibrillator Law Inquiry	0	7
Jan-06	CPR or Defibrillator Training	125	460
	Defibrillator Law Inquiry	0	7

Date	311 Inquiry by month	Monthly Total	Total since system established
Feb-06	CPR or Defibrillator Training	83	543
	Defibrillator Law Inquiry	1	8
Mar-06	CPR or Defibrillator Training	144	687
	Defibrillator Law Inquiry	1	9
Apr-06	CPR or Defibrillator Training	140	827
	Defibrillator Law Inquiry	2	11
May-06	CPR or Defibrillator Training	166	993
	Defibrillator Law Inquiry	1	12

One complaint was registered with the DOHMH on June 9, 2006. The facility, a health club/gym, was contacted on June 19, 2006 and, as of the date of this report's preparation, DOHMH is awaiting a response from the facility.

2.2.3 Website Information and Support

In addition, DOHMH created a webpage on its website providing information about the new AED law. The webpage contains the following links:

New York City Laws and Regulations

- NYC AED Regulations Fact Sheet
- NYC Local Law 20
- NYC DOHMH Rule Implementing Section 17-188 of the Administrative Code Requiring Placement of Automated External Defibrillators in Certain Public Places

New York State Laws and Regulations

- NY State Public Health Law §3000-b
- NY State General Business Law, Sections 631 and Sections 627-a, which regulate health clubs with membership ≥500.
- NY State Public Access Defibrillator Policy
- NY State regulations about AEDs in Public Schools
- New NY State laws on AEDs in State Office Buildings

Additional Resources:

- Regional Emergency Medical Services Council- NYC (REMSCO)
- AED Registering information on REMSCO website
- A list of training facilities in NYC
- American Heart Association training facilities in NYC
- Red Cross training facilities in NYC
- American Heart Association AED Information

2.2.4 Complaint System

DOHMH has setup a system for addressing complaints lodged against facilities regarding the placement of AEDs. Complaints are received by DOHMH through 311, written letters, direct phone calls and queries to the DOHMH website.

If a complaint is filed, an information packet is mailed to the named facility. It includes a cover letter stating that they are required to reply within 6 weeks indicating whether they believe they are subject to Local Law 20, and if so, if they are compliant or if they have complied since the complaint was lodged. Also included in the packet are a fact sheet about Local Law 20, the NYS Public Health Law §3000-b, and other related information.

When necessary, complaints are forwarded to DOHMH Bureau of Public Health Engineering (PHE) for on-site inspection by a PHE sanitarian. The sanitarian will inspect the site for compliance with the DOHMH regulation, and a standard fine will be applied if they are found to be in violation with the law. The facility has the right to appeal to the Administrative Tribunal in an attempt to resolve the issue or pay the fine. Fines will continue to be applied periodically until compliance can be verified.

3.0 PAD Locations

3.1 Data Sources

AED placement and use data in this report comes from the following sources:

The Fire Department of New York (FDNY) Division of Emergency Medical Services (EMS), Office of Medical Affairs - This office maintains records on all patients entered into the 911-EMS system. Data on specific parameters were made available for this report. FDNY is beginning to incorporate REMSCO PAD location data into their emergency 911 dispatch system so dispatchers may alert unaware callers of their availability as appropriate.

REMSCO-NYC - REMSCO is designated by New York State law to track all registered PADs within New York City and to maintain records on all PAD uses. As mentioned earlier in this report, DOHMH is working with REMSCO and has provided funding to refine tracking systems to improve reporting accuracy. Those systems were not yet fully operational to provide complete data for this report.

3.2 Data Limitations

The inability to consistently link PAD locations with usage and ultimately with survival to hospital discharge, and the incomplete nature of data available to DOHMH limits our ability to fully evaluate the impact of Local Law 20. Because all REMSCO and FDNY use data provided to the DOHMH are without identifying patient information it is impossible to determine health outcome related to PAD use. (The removal of personal health information from case reports protects the privacy of the individual.) Only limited case survival information is available for those out-of-hospital cardiac arrests where a return of spontaneous circulation is documented following PAD use. REMSCO data reports if there is spontaneous circulation following PAD use but provides no further information on individual outcome. Information provided to REMSCO, including details of the circumstances of PAD use, is often incomplete.

Due to these limitations, our estimates do not capture all of the PAD uses in New York City and survival rates related to PAD use are likely to be underestimated. The DOHMH is working with FDNY and REMSCO to improve coordination and data management for reporting purposes.

3.3 Non-Government PAD Locations

REMSCO data shows that 1941 PADs are registered throughout the five boroughs. Following is a description, by type of location, of the number of non-government facilities that are registered with REMSCO.

Nursing Homes

Nursing homes that already provide advanced life support, which includes use of a manual or automated defibrillator and trained physicians, registered nurses or emergency medical technicians present on-site 24 hours a day, seven days a week, are exempt from

these regulations. However, those nursing homes that do not have a manual defibrillator or AED are required to obtain an AED and to have at least two staff members trained in the use of an AED on premises at all times. Of the 193 nursing homes in the city, 19 were listed in the REMSCO data.

Health Clubs
Local Law 20 sought to require that health clubs, gyms, health spas, health or weight control studios, martial arts and self defense schools and other physical fitness centers with a membership ≥250 have an AED. However, Section 631 of the New York State General Business Law ("GBL") was found to preempt the Local Law 20 health club requirement. New York State law, specifically Section 627-a of the GBL, which went into effect on July 20, 2005, does require the provision of AEDs in health clubs statewide with membership ≥500. Of the 697 health clubs in the city, only 20 were registered with REMSCO.

Stadia and Arenas
There are at least 10 stadia and arenas in the city which would be subject to Local Law 20 and none have AEDs registered with REMSCO. However, most of these facilities offer a higher level of medical care, either providing full-time clinical services staffed by medical personnel or private EMS on a stand-by basis, during events held at each respective stadium. Those 3 facilities that DOHMH was able to contact indicated that on-site medical care, which would include an AED, is provided when events are held.

3.4 City Agency PAD Placement
Following is a review of the status of PAD placements by city agencies covered under Local Law 20.

3.4.1 Department for the Aging
Early in FY2006, the Department for the Aging (DFTA) purchased 238 devices for placement in senior centers serving meals and operating a minimum of three days per week. Delivery of the defibrillators was anticipated for January or early February 2006. The number of devices purchased is sufficient to cover all senior centers subject to the provisions outlined in Local Law 20. Due to the American Heart Association CPR protocol revision, these devices are currently being re-programmed. Delivery and placement of the reprogrammed devices is anticipated for July of 2006. In the interim, DFTA has been training and certifying staff from designated placement sites. As of the end of May 2006, 389 persons have participated in training. Trainings are ongoing and continue on a regular basis.

Beginning in November 2002, prior to Local Law 20, under the auspices of the Office of Emergency Management (OEM), AEDs were placed in 81 senior centers and two locations at DFTA. One large center has two devices for a total placement of 84 defibrillators not covered by Local Law 20. According to DFTA, with the placement of the additional devices, all senior centers subject to the law will have PADs.

3.4.2 Parks Department

As outlined in Local Law 20, the Parks Department was required to identify six parks in each borough where devices would be placed. In addition, golf courses, also administered by the Parks Department, are required to have a PAD. These sites were identified and the devices were placed.

Borough	Facilities Identified	Number of PADs in Parks System
Bronx	8	9
Brooklyn	12	12
Manhattan	17	19
Queens	8	8
Staten Island	11	11

Data Source: NYC Parks Department, 2006

Two additional sites will be added in Staten Island once the training of personnel has taken place. These placements fulfill the provisions as outlined in Local Law 20. All seven of the golf courses within the Parks system have AEDs in place as well.

3.4.3 Department of Citywide Administrative Services

The Department of Citywide Administrative Services, Division of Facilities Management and Construction (DCAS) has a total of 110 PADs placed throughout its facilities. According to DCAS, all of their facilities subject to Local Law 20 are fully equipped.

Borough	Number of Buildings	PADs in State Courts in DCAS System	Total Number of PADs in DCAS System
Bronx	6	6	13
Brooklyn	11	12	20
Manhattan	22	17	48
Queens	7	11	15
Staten Island	7	6	11

Data Source: NYC Department of Citywide Administrative Services, 2006

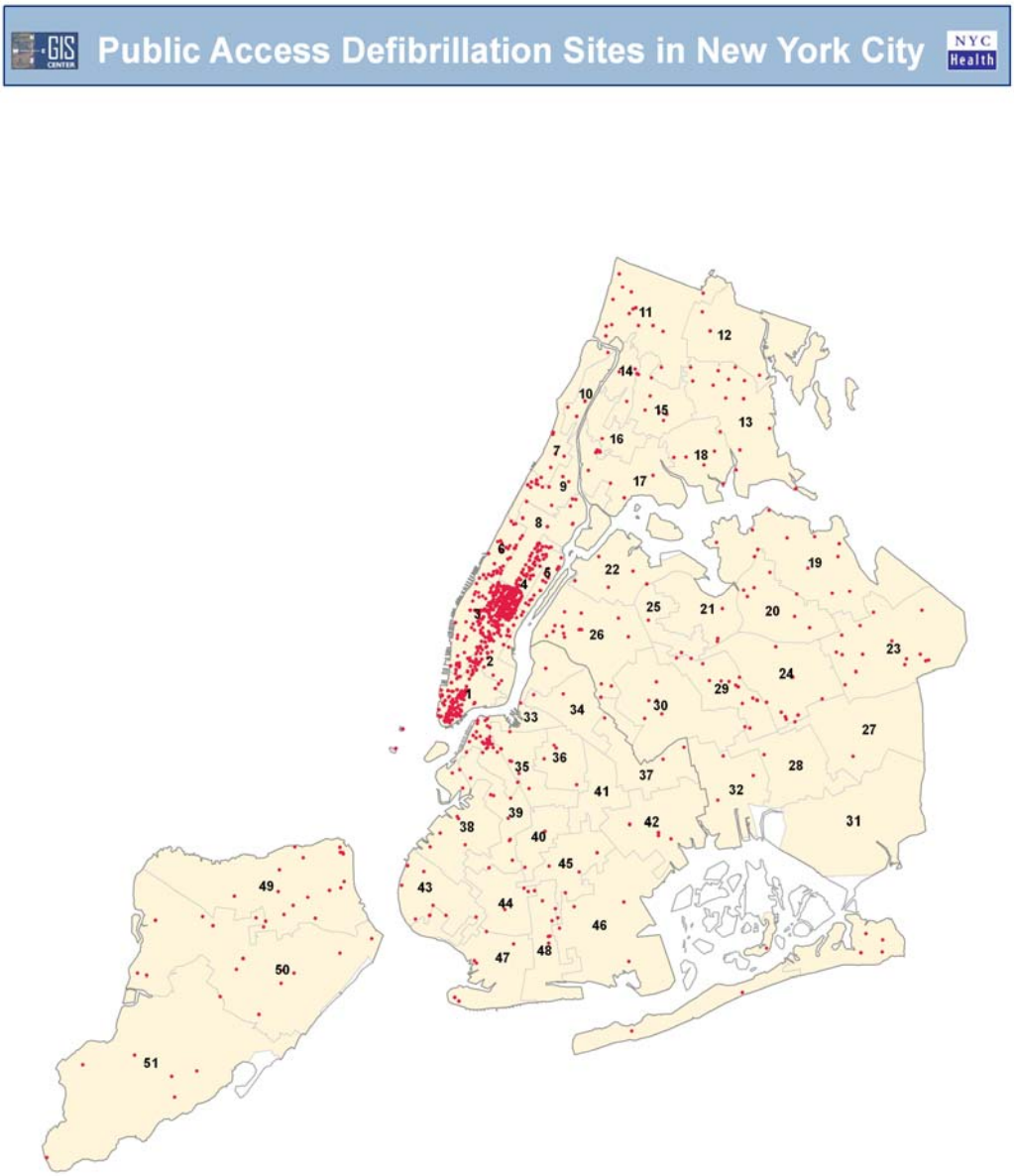
Each DCAS building and site has its own unique operating structure necessitating a considerable amount of planning to successfully comply with the Law. Given the complexity of this network of buildings with, in some cases, many of the floors of these buildings open to the public during business hours, DCAS is establishing individualized response plans for each building, often involving responsible staff from multiple agencies. To date, DCAS has 1,672 CPR/AED trained employees within their buildings subject to Local Law 20.

3.4.4 Department of Transportation

Ferry terminals owned and operated by the City with a passenger capacity of ≥ 1000 are subject to the law. Two of these facilities exist and are the South Ferry Terminal in Battery Park and St. George Terminal on Staten Island. While no registrations were found in the REMSCO database, DOHMH has confirmed that the Department of Transportation (DOT) does maintain PADs at both locations.

3.5 Map of PAD Locations

The following map displays all registered PAD locations plus all Parks and DCAS locations throughout New York City which may not have been registered to-date. Boundaries drawn on the map represent the council districts and each red dot represents a PAD site. Multiple PADs may exist in one location. Registered PAD sites are concentrated in Manhattan.



Note: *This represents only PAD sites and does not include AEDs used by medical personnel.*

4.0 PAD Uses

4.1 Fire Department of New York EMS Data

The following chart displays the number of out-of-hospital cardiac arrests occurring during the eleven month period of 7/1/2005-5/31/2006 by borough. Emergency medical personnel, in consultation with an online medical control physician and in accordance with practice protocols, may pronounce a patient deceased on the scene. In this case, transportation will not be provided by EMS. Of note, roughly 44% (2724/6152) of all out-of-hospital cardiac arrests are not transported by EMS.

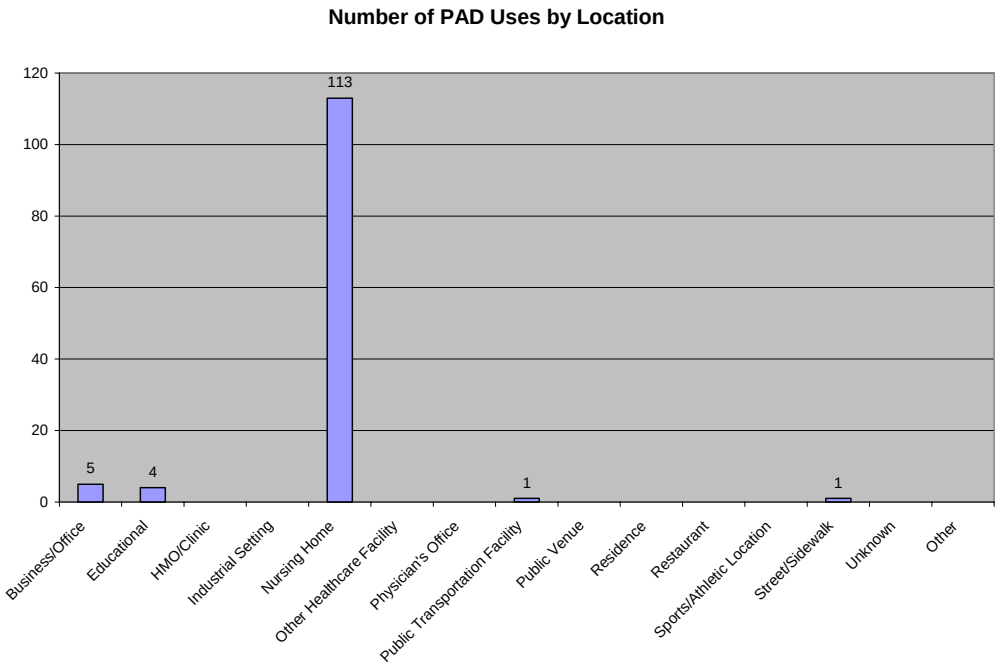
Borough	Transported	Not Transported
Brooklyn	1039	861
Bronx	692	607
Manhattan	757	419
Queens	787	676
Staten Island	153	161
Totals	3428	2724
Total Cardiac Arrests	6152	

911-EMS Data from 7/1/2005-5/31/2006

Data Source: Fire Department of New York, Office of Medical Affairs, 2006

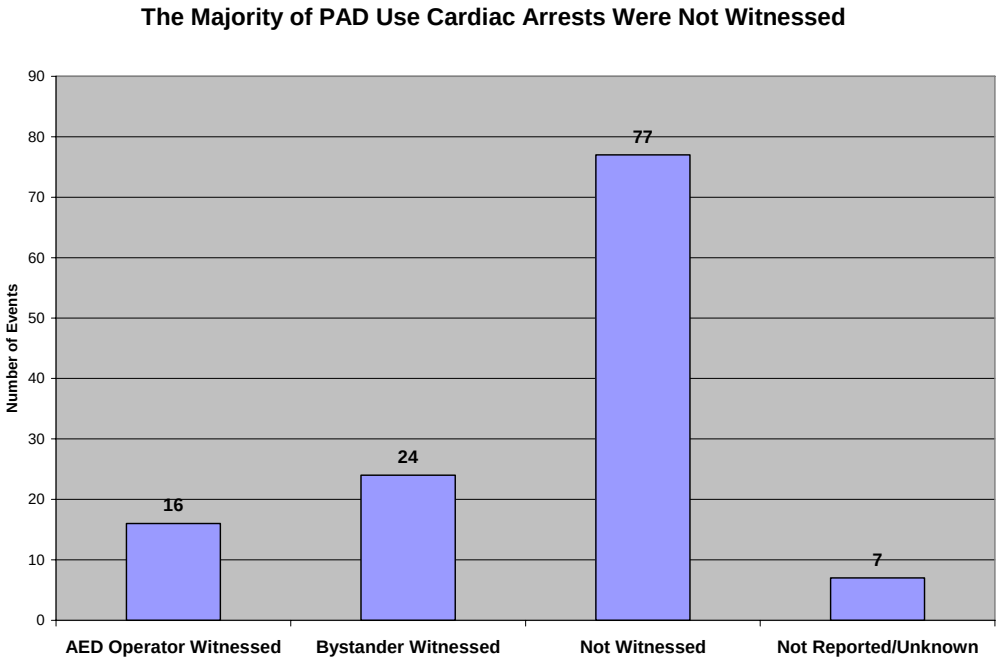
4.2 Reported PAD Use in New York City

Using the available data on registration and use of devices, we report the following trends. (Includes Local Law 20 required PAD sites and all others reported to REMSCO)



Data Source: Regional EMS Council of New York City, 2006

While the largest reported user of PADs is nursing homes, no survivors were identified from these PAD uses.



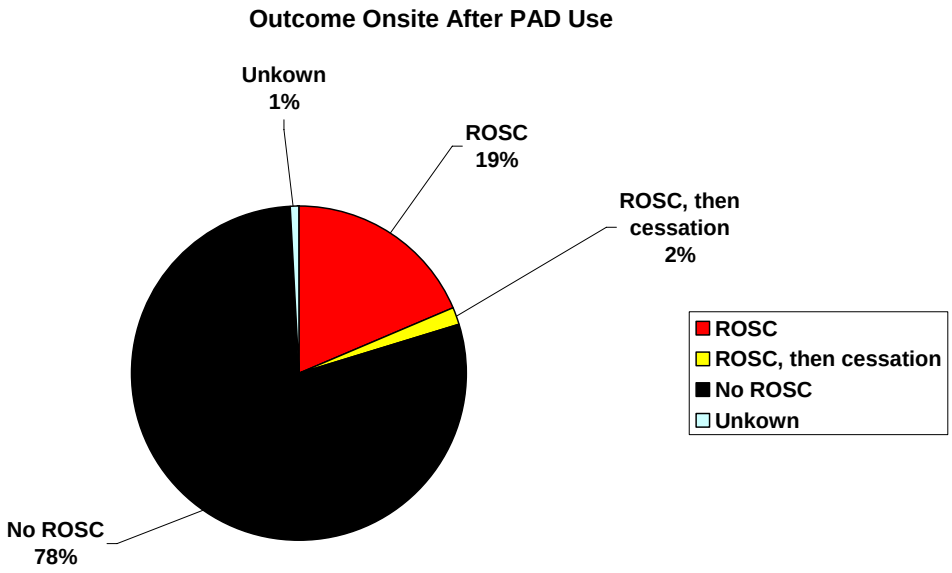
Data Source: Regional EMS Council of New York City, 2006

AEDs are most effective if used within several minutes of a cardiac arrest.[11] Therefore having an event witnessed offers the greatest likelihood for immediate lifesaving action. Seventy seven out of 124 (62%) of arrests where PADs were used were not witnessed.

4.3 Return of Spontaneous Circulation and Survival to Hospital Discharge

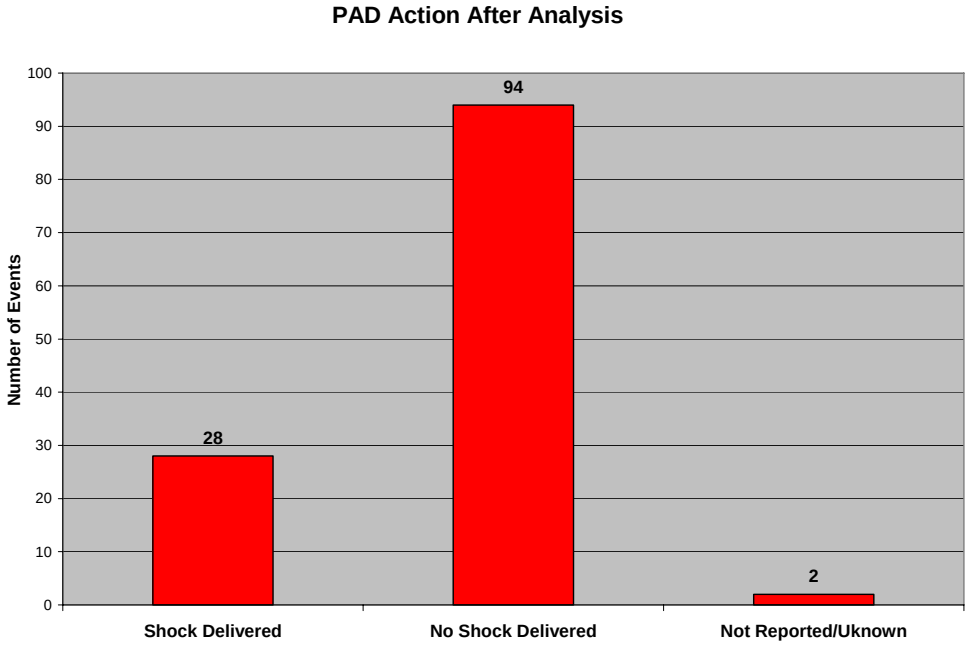
REMSCO PAD use data

REMSCO PAD use data reports on 'return of spontaneous circulation' (ROSC), defined as a return of a pulse when it had been reported as absent prior to PAD use. ROSC related outcomes reported here are categorized as follows: 'Return of Spontaneous Circulation' (ROSC), 'ROSC then cessation of circulation' (loss of spontaneous circulation again after PAD use), 'No ROSC' and 'unknown'.



Data Source: Regional EMS Council of New York City, 2006

Twenty-three out of 124 (19%) AED uses on those initially without a pulse had a ROSC. As previously mentioned, the indication for defibrillation is the existence of ventricular fibrillation or ventricular tachycardia (VF/VT). These heart rhythms were reported in only 28 out of 124 of the reported events, indicating that AEDs could have affected outcomes in an additional 3% of the events reported.



Data Source: Regional EMS Council of New York City, 2006

For purposes of discussion, if we assume that all ROSC reports resulted in survival to hospital discharge, 0.41 % of the total number of out-of-hospital cardiac arrests would have resulted in survival associated with PAD use. Nineteen of these were associated with Local Law 20.

FDNY use data

FDNY collects individual outcome data following PAD use.

Location and Outcome of Patients with ROSC following PAD Use*

Type of Location	**All Outcomes**		***Expired***	***Discharged from Hospital***	***Admitted***	***Transferred***
Health Club/Gym	2		0	2	0	0
Public Transportation Facility	4		1	2	1	0
Business/Office	2		0	1	0	1
Nursing Home	6		6	0	0	0
College/University	1		1	0	0	0
Dialysis Center	2		1	0	1	0
Totals	**17**		**9**	**5**	**2**	**1**

911-EMS Data from 7/1/2005-5/31/2006
Data Source: Fire Department of New York, Office of Medical Affairs, 2006
*FDNY does not track all uses of PAD, only those resulting in ROSC.

As noted above, 8 out of the 6152 total out-of-hospital cardiac arrests in New York City from 7/1/2005-5/31/2006 (equal to 0.13%) were associated with PAD usage and resulted in 'survival' (defined here as "discharged" "transferred" or "admitted to the hospital") by FDNY report. None of these uses resulting in so-called 'survival' occurred at sites required by Local Law 20 to have an AED. Three of these saves took place in transportation facilities.

4.4 Bystander CPR

While the majority of the PAD uses occurred in nursing homes where there are CPR trained staff, it is important to note the high prevalence of bystander CPR. Bystander CPR was performed at 115 out of 124 (92.7%) of the PAD uses. While we cannot determine its effect on overall outcome, it appears to have been performed in almost every PAD use.

5.0 Conclusions

5.1 Information on Data Quality and Management

To date, registration of required PADs has not been universal and therefore the subsequent data available is incomplete. DOHMH is working with FDNY and REMSCO to improve coordination and data management for future reports.

5.2 Quantities and Locations of PADs

City agencies have been making great efforts to meet the requirements of Local Law 20 by placing AEDs in all specified facilities outlined in the law. DCAS, DFTA and Parks identified 491 AEDs placed in their facilities throughout the city. However, data on the location and placement of PADs in privately owned entities remains incomplete. With the addition of the new web-based registration system on REMSCO's website, we anticipate the process of registration to be easier and more streamlined thereby improving DOHMH's overall report and analysis capacity for future reports.

5.3 Impact

Our data sources do not allow complete assessment of the impact of Local Law 20 on New York City out-of-hospital sudden cardiac arrest survival rates. As mentioned in section 4.3, 8 out of the 6152 total out-of-hospital cardiac arrests in NYC were associated with PAD usage and resulted in 'survival' (defined here as "discharged" "transferred" or "admitted to the hospital"), equal to 0.13% of all cardiac arrests. None of these 'survivals' were at Local Law 20 mandated facilities. There were 113 PAD uses in nursing homes, indicating that Local Law 20 may fill a treatment and medical care gap at these sites. However, none of these uses resulted in survival according to FDNY data.

5.4 Additional Potential Placements

It is still early to fully appreciate the impact of the expanded placement of PAD sites. Data available to date do not demonstrate an impact on survival for Local Law 20 mandated placements, although there were two saves to hospital discharge at health clubs/gyms, sites originally covered by the Law. As mentioned, nursing home placement may also prove to be an effective strategy. Improved registration with REMSCO by PAD sites, both mandated and voluntary, will allow more comprehensive assessment of AED placement efficacy in saving lives in New York City. Based on the data available, no further expansion of mandated PAD placement is recommended at this time. We expect that voluntary PAD placements will continue to expand.

5.5 Conclusion

The age-adjusted death rate from coronary heart disease has fallen by over 60% in the past 50 years.[12] Changes in health-related behaviors and practices, such as smoking cessation and dietary changes, as well as improvements in treatment and care, such increased control of blood pressure and cholesterol, have been important contributors to these trends.[13]

Public health interventions take on many forms and include on-going evidence-based initiatives designed to significantly decrease cardiovascular disease related death and illness. While we were not able to find evidence to date that implementation of Local

Law 20 has saved lives in its first year, we recognize that the data is incomplete. There was evidence that earlier AED placements in transportation hubs did save a small number of lives, and two saves occured in health clubs/gyms. The AED placements in nursing homes, while not associated with documented lives saved, were used and are likely to prove an appropriate measure. While further improvements in survival from acute cardiac arrest is needed, most cardiac arrests are due to underlying causes that evolve over years and can best be prevented and treated prior to the onset of cardiac arrest. Addressing smoking, obesity, high blood pressure and elevated cholesterol effectively as a City will have the greatest impact on reducing cardiac deaths.

6.0 References

[1] Thom T, Haase N, Rosamond W et al. Heart disease and stroke statistics--2006 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation* February 14 2006;113(6):e85-151.

[2] Sotoodehnia N, Zivin A, Bardy GH, Siscovick DS. Reducing mortality from suddencardiac death in the community: lessons from epidemiology and clinical applications research. *Cardiovasc Res* May 2001;50(2):197-209.

[3] Rea TD, Paredes VL. Quality of life and prognosis among survivors of out-of-hospital cardiac arrest. *Curr Opin Crit Care* June 2004;10(3):218-23.

[4] Caffrey SL, Willoughby PJ, Pepe PE, Becker LB. Public use of automated external defibrillators. *N Engl J Med* October 17 2002;347(16):1242-7.

[5] Valenzuela TD, Roe DJ, Nichol G, Clark LL, Spaite DW, Hardman RG. Outcomes of rapid defibrillation by security officers after cardiac arrest in casinos. *N Engl J Med* October 26 2000;343(17):1206-9.

[6] Page RL, Joglar JA, Kowal RC et al. Use of automated external defibrillators by a U.S. airline. *N Engl J Med* October 26 2000;343(17):1210-6.

[7] Davies CS, Colquhoun MC, Boyle R, Chamberlain DA. A national programme for on-site defibrillation by lay people in selected high risk areas: initial results. *Heart* October 2005;91(10):1299-302.

[8] Thom T, Haase N, Rosamond W et al. Heart disease and stroke statistics--2006 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation* February 14 2006;113(6):e85-151.

[9] Vaillancourt C, Stiell IG. Cardiac arrest care and emergency medical services in Canada. *Can J Cardiol* September 2004;20(11):1081-90.

[10] Cobb LA, Fahrenbruch CE, Olsufka M, Copass MK. Changing incidence of out-of-hospital ventricular fibrillation, 1980-2000. *JAMA* December 18 2002;288(23):3008-13.

[11] Larsen MP, Eisenberg MS, Cummins RO, Hallstrom AP. Predicting survival from out-of-hospital cardiac arrest: a graphic model. *Ann Emerg Med* November 1993;22(11):1652-8.

[12] Decline in deaths from heart disease and stroke--United States, 1900-1999. *MMWR Morb Mortal Wkly Rep* August 6 1999;48(30):649-56.

[13] Gregg EW, Cheng YJ, Cadwell BL et al. Secular trends in cardiovascular disease risk factors according to body mass index in US adults. *JAMA* April 2005;293(15):1868-74.

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
COMMISSIONER OF HEALTH

NOTICE OF ADOPTION OF RULE IMPLEMENTING
SECTION 17-188 OF THE ADMINISTRATIVE CODE REQUIRING THE PLACEMENT OF AUTOMATED EXTERNAL DEFIBRILLATORS AT CERTAIN PUBLIC PLACES

IN COMPLIANCE WITH SECTION 1043(b) and 389(b) OF THE NEW YORK CITY CHARTER (the "Charter") and pursuant to Title 17, Chapter 1, Section 17-188(f) of the New York City Administrative Code, notice is hereby given of the adoption of the following rule implementing Section 17-188 of the New York City Administrative Code requiring the placement of automated external defibrillators at certain public places. The Notice of Public Hearing was printed in the City Record on July 20, 2005. A public hearing was held on August 22, 2005. The Department received four written comments and two testimonials at its public hearing.

STATUTORY AUTHORITY

This rule is promulgated pursuant to New York City Charter Sections 389(b) and 1043(a) and Section 17-188(f) of the New York City Administrative Code. Section 1043(a) of the Charter provides that each "agency is empowered to adopt rules necessary to carry out the powers and duties delegated to it by or pursuant to federal, state of local law". Section 389(b) similarly provides that the "heads of mayoral agencies shall have the powers to adopt rules to carry out the powers and duties delegated to the agency head or the agency by or pursuant to federal, state or local law. Section 17-188(f) of Chapter 1 of Title 17 of the Administrative Code authorizes the Commissioner of the Department of Health and Mental Hygiene to "promulgate such rules as may be necessary for the purpose of implementing the provisions of this section, including, but not limited to, rules regarding the quantity and location of automated external defibrillators to be placed in a particular public place or general category of public place; the form of notice in which the availability of automated external defibrillators in a public place shall be made known to the public and any accompanying fee; and any information on the use of automated external defibrillators that must accompany and be kept with each automated external defibrillator…."

STATEMENT OF BASIS AND PURPOSE

This rule is required to be promulgated pursuant to Section 17-188 of the Administrative Code, specifically subsections (b), (c), (f) and (j) thereof, and is necessary for that law's proper implementation and enforcement. The general purpose of Section 17-188 of the Administrative Code is to make "automated external defibrillators" available in the "publicly accessible areas" of certain "public places" in order to encourage persons to "voluntarily and without expectation of monetary compensation" provide first aid or emergency treatment using an automated external defibrillator that has been made available pursuant to this section, to a person who is unconscious, ill or injured….". Section 24-01 of a new Chapter 24 of Title 24 of the Rules of the City of New York provides the meaning of specific words and terms used in this rule and in

Section 17-188 of the Code and further provides that the meaning of other words and terms used in the rule are as specified in Section 17-188 of the Code. In response to a comment received, the definition of "publicly accessible areas" in Section 24-01(b)(3) has been modified. The revised version makes clearer that this definition was not intended to exclude employees but rather to clarify which areas within these public places are open to the public. The definition of "membership" in former Section 24-01(b)(4) has been deleted from the final version because Section 631 of the New York State General Business Law ("GBL") reflects the State Legislature's intent to preempt the area of automated external defibrillators in health clubs, as now set forth in Section 627-a of the "GBL". Section 627-a, which went into effect on July 20, 2005, establishes statewide requirements relating to the provision of automated external defibrillators in health clubs. Therefore, consistent with Section 631 of the "GBL", those provisions of Local Law 20 of 2005 as they relate to health clubs and related facilities defined in Section 17-188(a)(3)(vii) of the Code are of no force and effect. The definition of "membership" as it relates solely to health clubs and related facilities has been deleted.

Section 24-02 provides that those required to make automated external defibrillators available pursuant to Section 17-188 must in implementing this rule also comply with the requirements of Section 3000-b of the New York State Public Health Law in connection with the acquisition, possession and operation of automated external defibrillators. Section 24-03 provides necessary guidance as to the appropriate location and quantities of automated external defibrillators that must be maintained pursuant to the new law. According to Section 24-03(a), the owner or operator of a public place, as defined in Section 17-188(a)(3) of the Code and limited by Section 17-188(e) of the Code, must "place at least one automated external defibrillator(s) in a prominent location in that public place." Subsection (b) of this section provides that the automated external defibrillator(s) is to be "located or placed so that this equipment can be obtained in a timely manner". Section 24-04 entitled Required Notice: Signage Information, provides the information that is required to appear on the wall sign informing the public as to the availability of an automated external defibrillator at that location and specifies where that wall sign should be placed. It also identifies information that must be included on a second sign and provides that this second sign may be placed either on a wall or on the face of the storage container in which the automated external defibrillator is contained. In response to a comment, changes to Section 24-04 reducing the minimum height of the lettering on the required signage and allowing the use of the abbreviation "AED" have been made. The Department determined that the use of the abbreviation and the size reduction in lettering would not affect legibility and that these changes were necessary to ensure that the language could be accommodated on the signage. Upon further consideration, the Department has deleted paragraph (ii) of subsection (e) of Section 24-04 as unnecessary. The reference to a paragraph (i) has, accordingly, also been deleted. The content of former paragraph (i) remains as subsection (e) of Section 24-04. Section 24-05 specifies what must be contained in a required written Site-Specific Response Plan and provides that the Plan must be made available to the Department upon its request.

In response to a comment, the definition of "On A Regular Basis" in Section 24-01(b)(7) was modified to increase the number of senior centers that would be required to make an automated external defibrillator available by reducing the number of hours of services per week, including lunch, that a senior center has to provide before it is required to have an automated

external defibrillator. A definition of "Advanced Life Support" [Section 24-01(b)(8)] and a section entitled "Nursing Homes" [Section 24-06] have been added as the Department determined that there existed a need to provide guidance to nursing homes as to which facilities would have to make automated external defibrillators available and the number of trained responders that must be specifically required in those facilities.

THE RULE IS AS FOLLOWS:

COMMISSIONER OF HEALTH AND MENTAL HYGIENE RULE IMPLEMENTING SECTION 17-188 OF THE ADMINISTRATIVE CODE REQUIRING PLACEMENT OF AUTOMATED EXTERNAL DEFIBRILLATORS AT CERTAIN PUBLIC PLACES

Chapter 24

AUTOMATED EXTERNAL DEFIBRILLATORS IN CERTAIN PUBLIC PLACES

Section 24-01(a). Definitions.

Words and terms used in this rule, other than those specified in subsection (b) of this section, shall have the same meaning as specified in §17-188 of the New York City Administrative Code.

(b) When used in this rule, the following words or terms shall have the following meaning:

(1)__Department. "Department" means the New York City Department of Health and Mental Hygiene.
(2) _Code. Code means the Administrative Code of the City of New York.
(3)__Publicly Accessible Areas. Publicly accessible areas of buildings operated by the Division of Facilities Management and Construction of the Department of Citywide Administrative Services means the areas within a "public place", as that term is defined in §17-188(a)(3) of the Code, to which members of the public are regularly invited or permitted on most business days and which do not require an appointment or special authorization or permission in order to gain admission.
(4)_Prominent Location. Prominent location shall mean any central location in a public place where the automated external defibrillators can be located and are readily available at all times for use by persons trained in their operation.
(5) Public access defibrillation provider. Public access defibrillation provider means a person, firm, organization or other entity having control of a public place and possessing or operating an automated external defibrillator pursuant to a collaborative agreement, as that term is defined in §3000-b of the New York State Public Health Law.
(6) Trained Responder(s). Employees/volunteers recruited by or, if necessary, designated by the owner/management of those public places specified in §17-188(a)(3) of the Code, to operate automated external defibrillators. Such employees shall have received appropriate training in the use and operation of automated external defibrillators, as evidenced by the

successful completion of a combination cardio-pulmonary resuscitation/automated external defibrillator (CPR/AED) training class.
(7) On A Regular Basis. As used in § 17-188(a)(3)(iv) of the Code, refers to those senior centers offering services, including lunch, to senior citizens at least three days per week.
(8) Advanced Life Support. As used in § 17-188(j) of the Code and § 24-06, advanced life support must include, although is not limited to, the availability of manual defibrillation.

Section 24-02. Compliance with State Law

Any automated external defibrillator required pursuant to §17-188 of the Code shall be acquired, possessed and operated in accordance with the requirements of §3000-b of the New York State Public Health Law.

Section 24-03. Quantity and Location of Automated External Defibrillators

(a) The owner or operator of a public place, as defined in §17-188(a)(3) of the Code and limited by §17-188(e), shall place at least one automated external defibrillator(s) in a prominent location in that public place. In those public places maintained by the Division of Facilities Management and Construction of the Department of Citywide Administrative Services, this placement shall be within a "publicly accessible area", as defined in §24-01(b)(3).

(b) Automated external defibrillator(s) shall be located or placed so that this equipment can be obtained in a timely manner. For those buildings operated by the Division of Facilities Management and Construction of the Department of Citywide Administrative Services having publicly accessible areas located more than five (5) floors apart, no such publicly accessible area shall be more than five floors from where an automated external defibrillator is located.

(c) Storage conditions for the automated external defibrillators shall be in compliance with the manufacturer's specifications.

Section 24-04. Required Notice: Signage Information

(a) The owner or operator of a public place shall provide written notice to all persons using a public place, as that term is defined in §17-188(a)(3) of the Code, in the form of a clear and conspicuous wall sign placed at a height between five and seven feet above the floor and which is also in close proximity to the automated external defibrillator unit storage location.

(b) The sign shall contain the following language in lettering and representation (symbol) in the size indicated:

- "DEFIBRILLATOR" or "AED" (minimum height - two (2) inches)
- Automated External Defibrillator (minimum height – five eighths (5/8) inch)
- Heart and lightening bolt logo (minimum height - two (2) inches)

(c) A second wall sign either similarly placed as the one required in subsection (a) of this section or located on the storage cabinet containing the automated external defibrillator must contain the following information in the size indicated:

- In event of emergency call 911 (minimum height –three eighths (3/8) inch)
- **and**
- Contact this facility's trained responder(s) at: (Give contact information for trained responder(s) (minimum height – three eighths (3/8) inch)

(d) In addition to the signs required in subsections (a) and (b) of this section, a wall sign containing the information specified in subsection (c) of this section shall be placed in a prominent location on all publicly accessible floors of a public place. Such sign shall also state that more information on CPR/AED training may be obtained by calling 311.

(e) Exception. The wall signs required by subsections (c) and (d) of this section shall not be required in nursing homes.

(f) Signs in conformity with the requirements specified in §24-03 (b) and (c) shall be made available by the Department, at no cost to the owner or operator of a public place required to have an automated external defibrillator. An owner or operator shall use either the sign provided by the Department or its own sign provided that the sign used meets the requirements specified in this section.

(g) All automated external defibrillators shall be stored with clear concise written or pictorial instructions for their use.

Section 24-05 Site-Specific Response Plan

(a) The owner or operator of a public place, as defined in §17-188 of the Code, must have a site response and maintenance plan as part of the written practice protocols included in the collaborative agreement required by §3000-b of New York State Public Health Law. This plan must be made available to the Department upon its request.

(b) The Site-Specific Plan must specify the following:

1. A list of the trained responders, the specific training they received, how they can be contacted, the locations of the trained responders at the site .
2. The provider of the AED/CPR training received by each trained responder, the date that training was received as well as the due dates for training recertification of each trained responder.
3. The specific location(s) of the automated external defibrillator(s) at the public place. The automated external defibrillator(s) shall be in a location(s) accessible to the trained responder(s).

4. The party responsible for verifying that the automated external defibrillator(s) is in operable condition and for ensuring that the equipment is maintained in conformity with the manufacturer's recommendations.
5. The placement and exact location of the signs required by §24-04(a), (b) and (c) along with the information on how to contact the site's trained responder(s).
6. Instructions on how to identify an on–site medical emergency and a listing of procedures to be followed to notify trained responders of the existence of that emergency.
7. Procedures to be followed to notify the emergency medical services system as to the existence of an on-site medical emergency.
8. How the trained responder(s) at a site will be dispatched to the location of the medical emergency.
9. The procedures to be followed by the trained responder(s) at the location upon their response to the location of a medical emergency.
10. Procedures to be followed by trained responders upon their transfer of care of an emergency to the emergency medical services system.
11. Instructions on how to document each use of an automated external defibrillator and immediately report such usage in accordance with Public Health Law §3000-b.

(c) The number of trained responders in each public place shall be commensurate with the size and configuration of the facility to permit rapid response during regular business hours. The number of trained responders in nursing homes required to make on-site automated external defibrillators available pursuant to §17-188(b) of the Code shall be as specified in §24-06.

Section 24-06 Nursing Homes

(a) Nursing homes not making available advanced life support, as that term is defined in §24-01(b)(8), by a physician, registered nurse or emergency medical technician present on-site twenty-four hours a day, seven days a week or not making available automated external defibrillators to be used by a trained physician, registered nurse or emergency medical technician present on-site twenty-fours hours a day, seven days a week, shall provide on-site automated external defibrillators, as required by §17-188(b) of the Code in the number specified in §24-03(a). Such nursing homes must acquire, possess and operate their automated external defibrillators in accordance with the requirements of § 3000-b of the Public Health Law, as specified in § 24-02.

(b) A minimum of two trained responders, as defined in §24-01(b)(6), shall be present at all times in those nursing homes required to make automated external defibrillators available.