



Northwest Community EMS System Year-end Data for 2020

At the end of each calendar year, the Provider Based Performance Improvement (PBPI) committee provides statistical measurements for the system. The current reporting software, ImageTrend, provides many canned reports to organize data. During the 2020 calendar year, the EMS system completed a combined 74,466 Patient Care Reports (PCR) which is a decrease of 7.3% over the 2019 calendar year.

	2020		2019		2018		2017	
Total PCR written	74,466		80,392		76,601		72,303	
Male	35,602	48%	36,816	46%	34,841	45%	32,738	46%
Female	38,157	51%	42,397	53%	40,449	53%	37,293	52%
Unknown/ Unable to determine	707	1%						



Year-End 2020 Data

Disposition

Each PCR is required to document a Disposition under NEMSIS rules, "Type of disposition treatment and/or transport of the patient by this EMS Unit."¹

Disposition Incident Patient Disposition (eDisposition.12)	2020 Number of Runs	2020 Percent of Total Runs	2019 Number of Runs	2018 Number of Runs
Treat & Transport ALS by this unit	27,888	37.43%	31,679	31,671
Treat & Transport BLS by this unit	18,698	25.09%	19,209	18,311
BLS Interfacility	10,455	14.03%	11,213	8,282
Treated, Released (protocol)	4,138	5.55%	3,951	3,596
Treated, Released (AMA)	4,100	5.50%	4,212	4,242
Pt Refused Evaluation/Treatment/Transport	3,426	4.60%	3,690	3,627
Evaluated, No Treatment/Transport Required	1,828	2.45%	1,697	2,072
Treated, Transferred to Other EMS Unit	887	1.19%	1,291	1,391
ALS Interfacility	886	1.19%	918	897
DOA / DNR without Transport	643	0.86%	543	515
Multiple Patient Refusal (MPR)	560	0.75%	958	1,042
Arrest / TOR without Transport	428	0.57%	307	239
Assist, Public	175	0.23%	268	194
M/A Given, Pt Contact/Treatment, Other Unit Transported	131	0.18%	42	0
Other (13 misc. dispositions)	270	0.60%	437	480

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Year-End 2020 Data

Where we Transport

The system transported 57,930 (77.7%) patients to various destinations throughout Illinois and surrounding states. The data set "Destination/Transferred to", Name is defined as "The destination the patient was delivered or transferred to"¹

It is understood that NWCH is centrally located in the service area and is the closest hospital for some of the busier agencies.

(Blank destination, 11,645 incidents, and "Not Transported", 4,938 incidents, omitted from total)

Total PCRs	74,466			
Total Transports	57,930			
	2020		2019	2018
NWCEMSS Hospitals	Number of receiving patients	Percentage of total transported patients	Number of receiving patients	Number of receiving patients
Northwest Community Hospital	17,851	30.8%	19,431	19,005
AMITA Health Alexian Brothers MC	7,931	13.7%	9,231	9,259
AMITA Health St. Alexius MC	5,616	9.7%	6,415	6,321
Advocate Good Shepherd Hospital	3,363	5.8%	3,746	4,093
AMITA Health GlenOaks MC	2,085	3.6%	2,257	2,228
AMITA Resurrection MC	328	0.5%	189	91
Non-system Hospitals that received the most patients from a system agency.				
Advocate Lutheran General Hospital	5,197	9.0%	5,553	5267
Northshore Glenbrook Hospital	1,191	2.1%	1,390	1,303
Advocate Condell MC	1,167	2.0%	1,412	1449
Northshore Hospital-Highland Park	697	1.2%	697	650
Northwestern Central DuPage Hospital	304	0.5%	402	424
All other Destinations	12,200	21.1%		

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Year-End 2020 Data

Primary Impression

Each PCR documents a “Providers Primary Impression,” The EMS personnel's impression of the patient's primary problem or most significant condition which led to the management given to the patient (treatments, medications, or procedures)¹. The system used 200 different Primary Impressions, which the following table shows the top 24 Primary Impressions which were used at least 1% or higher of the total PCRs written. The systems’ most used Primary Impression is “No abnormal finding upon exam.” Of the 13,328 PCRs that used this Primary Impression, 6,498 PCRs were documented with an Incident Disposition (eDisposition.12) of “BLS interfacility;”. Also, 4,938 PCRs were documented with an Incident Disposition (eDisposition.12) that includes no transport.

Situation Provider Primary Impression (eSituation.11)	2020 Number of Runs	2020 Percent of Total Runs	2019 Number of Runs	2018 Number of Runs
No abnormal findings upon Exam (Z00)	13,328	17.89%	18,488	16,178
Weakness (R53.1)	4,923	6.61%	5,364	4,649
Acute pain (G89.1)	4,530	6.08%	5,581	5,756
Altered mental status (R41.82)	2,487	3.34%	2,363	2,172
Feared Complaint Unfounded (Z71.1)	2,115	2.84%	1,210	1,297
Dyspnea / Other Respiratory Unspecified (J98.9)	2,106	2.83%	1,798	1,618
Injury of head (S09.90)	1,683	2.26%	1,820	1,709
Suicidal ideations (R45.851)	1,673	2.25%	1,660	1,619
Chest pain (precordial) (R07.2)	1,582	2.12%	1,848	1,733
Alcohol use, with intoxication (F10.92)	1,557	2.09%	1,666	1,609
Anxiety disorder (F41.9)	1,484	1.99%	1,240	1,294
Dizziness (R42)	1,308	1.76%	1,518	1,529
Syncope (R55)	1,243	1.67%	1,466	1,518
Malaise (R53.81)	1,174	1.58%	773	785
Unspecified Convulsions / Seizure (R56.9)	1,145	1.54%	1,118	1,194
Acute abdomen (R10.0)	1,092	1.47%	1,170	1,098
Stroke / Cerebral Infarction (I63.9)	1,084	1.45%	1,163	1,070
Fever, unspecified (R50.9)	1,077	1.45%	801	802
Generalized abdominal pain (R10.84)	1,060	1.42%	1,130	1,077
Mental Disorder (F99)	923	1.24%	795	786
Nausea and vomiting (R11)	873	1.17%	988	1,011
Cardiac Arrest (I46.9)	855	1.15%	693	656
Violent Behavior (R45.6)	827	1.11%	794	671
Back Pain, non-traumatic (M54.9)	764	1.03%	879	832

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Year-End 2020 Data

Medications Given

The following table shows the top 25 medications given to a patient. It is understood that due to varying ways to document, the following numbers do not represent the number of patients that received the medication, or the number of doses given, just the number of times the medication was used.

Medication Given Description and RXCUI Code (eMedications.03)	2020 Number of Times Medication Administered	2019 Number of Times Medication Administered	2018 Number of Times Medication Administered
Oxygen (7806)	7,176	6,467	6,394
Normal saline (125464)	5,104	6,651	6,309
Epinephrine 1 mg / 10 mL (317361)	2,710	2,681	2,878
Aspirin (1191)	2,582	3,226	3,227
Ondansetron (26225)	2,542	3,432	3,411
Fentanyl (4337)	2,494	3,622	4,049
Nitroglycerin (4917)	1,245	1,687	2,004
Naloxone (7242)	791	702	668
dextrose 10% Injectable Solution (237648)	656	531	750
Albuterol (435)	505	1,218	1,226
Midazolam (6960)	489	611	680
Ipratropium (7213)	447	1,115	1,118
Ketamine (6130)	282	214	54
Diphenhydramine (3498)	221	251	281
Amiodarone (703)	195	189	141
Epinephrine 1 mg /1mL (328316)	167	168	210
Glucagon (4832)	164	142	160
Norepinephrine (7512)	105	125	124
Atropine (1223)	89	124	113
Adenosine (296)	81	98	101
Lidocaine (6387)	76	67	79
Sodium Bicarbonate (36676)	60	31	56
Nitrous Oxide (7486)	54	18	0
Glucose (4850)	37	30	44
Verapamil (11170)	33	47	42

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Year-End 2020 Data

Procedures

The following table shows the top 25 procedures performed. It is understood that some patients received multiple attempts with the same procedure.

Procedure Performed Description And Code (eProcedures.03)	2020 Number of Times Procedure Administered	2019 Number of Times Procedure Administered	2018 Number of Times Procedure Administered
IV - Peripheral (392230005)	7,803	8,964	8,642
Surgical Face Mask Applied to Patient (465635009)	5,860	0	0
Cervical Spine Motion Restriction (398041008)	3,171	3,809	3,640
ECG - 12 Lead Obtained (268400002)	2,149	1,352	939
Wound - Application of Bandage (182555002)	1,584	1,661	1,539
Cold Pack Application (229585002)	879	1,261	445
IO - Intraosseous Access (430824005)	875	706	664
CPR - Manual (89666000)	727	454	478
Splinting - General (79321009)	608	740	739
CPR - Mechanical Device (429283006)	463	245	116
Orotracheal intubation using video + Bougie (398128007)	453	395	50
Assist Ventilation - BVM (425447009)	384	247	284
Nasopharyngeal Insertion (182692007)	371	274	283
Airway - Clear / Suction (230040009)	320	245	222
Active External Cooling (431774007)	283	433	1,359
Oropharyngeal Insertion (7443007)	282	201	210
iGel Airway Insertion (-2)	205	98	0
Physical Restraints (386423001)	199	140	147
CPR discontinued per Medical Control Order (425519007)	180	84	76
Electrocardiographic monitoring (46825001)	169	100	119
CPR - With Feedback Device (428805003)	169	191	228
Capnography Waveform (250863006)	151	38	71
Assisted Ventilation - BV to Tube (408853006)	134	24	0
Full Spinal Restriction of Motion (426498007)	133	93	73
CPR discontinued due to ROSC (426970003)	128	88	91

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Times Report

It is understood that many factors can affect response, scene, and at hospital times. Private vs Fire based and distance to receiving hospital are two of the largest factors. The data reported is for comparison to last year. Average and 90% fractal times are reported. The 90% percentile number is a better measure than Average since it accounts for 90% of the data set instead of 50%. Also, outliers, which are part of most data sets, will not have the effect on the outcome as the Average calculation. Do to the differing nature of Private Ambulance Service and Fire Based services the times are reported as total system times, Fire Based services and Private Ambulance service.

En-route time defined from Unit notified until Unit en-route

To the scene defined from unit en-route to unit arrived on scene

On scene defined from unit arrived on scene till unit left scene

Transport time defined from unit left scene till unit arrived at destination.

Back in-service time defined from unit arrived at destination till unit was marked back in-service.

	2020 All System		2020 Fire Based Services		2020 Private Ambulance Services	
	Average	90%	Average	90%	Average	90%
En-route time	1.19	2.10	1.09	2.05	1.28	3.26
To the scene	6.71	24.83	3.56	6.22	23.24	46.28
On scene time	16.98	31.87	15.70	24.79	23.86	39.83
Transport time	10.41	20.00	9.74	14.38	13.91	37.93
Back in service	33.43	56.60	35.00	55.85	25.15	42.56

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Unit Numbers

Most agencies have multiple units that complete PCRs. The following are the top 15 units and agency affiliation that completed PCRs

Response EMS Unit Call Sign (eResponse.14)	2020 Number of Runs	Percent of Total Runs	Agency Name (dAgency.03)	2019 Number of Runs	2018 Number of Runs
701	3,047	4.09%	Elite Ambulance	1,617	167
717	2,660	3.57%	Elite Ambulance	1,039	1,301
A-61	2,332	3.13%	Des Plaines Fire	2,504	2,437
A2	2,018	2.71%	Arlington Hts Fire	2,107	1,943
A51	1,904	2.56%	Schaumburg Fire	2,011	1,962
A21	1,869	2.51%	Hoffman Est. Fire	1,809	1,825
A-62	1,825	2.45%	Des Plaines Fire	2,058	2,010
A1	1,721	2.31%	Arlington Hts Fire	2,032	1,951
Medic 380	1,708	2.29%	Superior Ambulance	1,492	1,196
722	1,704	2.29%	Elite Ambulance	2,033	753
A3	1,660	2.23%	Arlington Hts Fire	1,801	1,687
A-63	1,567	2.10%	Des Plaines Fire	1,592	1,725
A82	1,554	2.09%	Palatine Fire	1,533	1,546
A83	1,530	2.05%	Palatine Fire	1,533	1,558
704	1,522	2.04%	Elite Ambulance	1,072	0

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PCRs written by each agency

The following shows the number of PCRs completed by each agency. This may not fully indicate the number of patients treated, as some agencies complete a PCR on “no patient found” and “canceled” incidents.

Total PCRs written total 74,446.

Total PCRs per agency	2020	2019	2018
Advantage	764	3,206	4,720
Arlington Heights	7,153	7,956	7,569
A-Tec	473	613	0
Barrington	1,138	1,302	1,159
Barrington-Countryside	1,222	1,267	1,352
Bloomington	3,180	3,327	3,529
Buffalo Grove	3,267	3,088	3,034
Des Plaines	6,476	7,065	7,022
Elite Ambulance	11,464	9,070	4,101
Elk Grove Township	558	631	575
Elk Grove Village	3,697	4,155	4,286
Fermilab	17	40	36
Hoffman Estates	4,267	4,591	4,285
Itasca	812	954	958
Lake Zurich	2,612	2,838	2,931
Long Grove	974	1,034	922
Lincolnshire-Riverwoods	1,740	2,062	2,129
Mount Prospect	4,069	4,401	4,091
Palatine	5,281	5,648	5,720
Palatine Rural	528	596	616
Prospect Heights	1,410	1,424	1,500
Rolling Meadows	2,332	2,620	2,676
Schaumburg	5,839	6,600	6,497
Superior	3,726	4,387	4,378
Wood Dale	1,509	1,514	1,441

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Respectfully Submitted
PBPI Executive Board

<p>Jason Brizzell, Paramedic Schaumburg Fire Department Chair, PBPI committee</p>	<p>Ryan Rasche, Paramedic Itasca Fire Protection District Vice Chair, PBPI committee</p>
<p>Adam Sielig, Paramedic Arlington Heights Fire Department Data coordinator, PBPI committee</p>	<p>Nichole Junge, RN Paramedic Rolling Meadows Fire Department Secretary, PBPI committee</p>
<p>Taylor McIntyre, Paramedic Hoffman Estates Fire Department Screen Coordinator, PBPI committee</p>	<p>Connie Mattera, M.S., R.N., EMT-P System Liaison for PBPI</p>

References

1. NHTSA v3.3.4 Build 140328 EMS Data Standard Version Date: March 28, 2014
https://nemsis.org/media/nemsis_v3/3.3.4.140328/DataDictionary/PDFHTML/DEMEMS/NEMSISDataDictionary.pdf

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