Metropolitan Area EMS Authority (MAEMSA)

d.b.a. MedStar Mobile Healthcare

Board of Directors

September 26, 2018

AGENDA

METROPOLITAN AREA EMS AUTHORITY
D/B/A MEDSTAR MOBILE HEALTHCARE
BOARD OF DIRECTORS MEETING

Meeting Location: MedStar Mobile Healthcare, 2900 Alta Mere Dr., Fort Worth, TX 76116
Meeting Date and Time: September 26, 2018 10:00 a.m.

I.	**CALL TO ORDER**		Dr. Brian Byrd
II.	**INTRODUCTION OF GUESTS**		Dr. Brian Byrd
III.	**CONSENT AGENDA**	Items on the consent agenda are of a routine nature. To expedite the flow of business, these items may be acted upon as a group. Any board member or citizen may request an item be removed from the consent agenda and considered separately. The consent agenda consists of the following:	
	BC – 1361	Approval of board minutes August 20, 2018 meeting.	Dr. Brian Byrd Pg. 5
	BC - 1362	Approval of board minutes August 22, 2018 meeting.	Dr. Brian Byrd Pg. 7
	BC - 1363	Approval of Check History August, 2018.	Dr. Brian Byrd Pg. 11
IV.	**NEW BUSINESS**		
	BC – 1364	Approval of land purchase from HCA.	Dr. Brian Byrd Pg. 15
	BC – 1365	Approval of Interim Medical Director's Contract.	Mr. Schleicher Pg. 16
	BC – 1366	Potential Contract with Interim Associate Medical Director.	Dr. Vithalani Pg. 17
	BC – 1367	Approval of NICE Software update for Communications Center.	Dr. Brian Byrd Pg. 18
V.	**MONTHLY REPORTS**		
	A.	Chief Executive Officer Summary • Walsh Ranch/Parker County Hospital District • Operationalized Budget for FY 2019 • ERP Training, Phase I has started • New trucks are now in service • Matt Zavadsky, Douglas Hooten were speakers at the AAA Annual Conference	Douglas Hooten

and Tradeshow. We (MedStar) will be speaking at EMS World and EMS Expo in the next few months.

- Work on the North Deployment Center continues.
- Possible IT changes.
- End of Summer Party Sat, 10/6, 1-4p at MedStar.
- MedStar Holiday Party Fri, 12/14 at Cendera Center, 7-11pm
- MAEMSA board holiday dinner Thur, 12/13 at Frost Bank Towers, 6:30-9:30p.

B.	Chief Financial Officer Report	Joan Jordan
C.	Chief Operations Report	Ken Simpson
D.	Human Resources Report	Tina Smith
E.	First Responders Advisory Board (FRAB)	Fire Chief Kirt Mays Fire Chief Kenneth Stevens
F.	Office of the Medical Director Report	Dwayne Howerton Dr. Neal Richmond
G.	Compliance / Legal Reports	Chad Carr Kristofer Schleicher
H.	Chief Strategic Integration Officer	Matt Zavadsky

VI. OTHER DISCUSSIONS

A.	Requests for future agenda items	Dr. Brian Byrd

VII. CLOSED SESSION

The Board of Directors may conduct a closed meeting in order to discuss matters permitted by any of the following sections of Chapter 551 of the Texas Government Code:

1. Section 551.071: To seek the advice of its attorney(s) concerning pending or contemplated litigation or a settlement offer, or on any matter in which the duty of the attorney to the Board and the Authority to maintain confidentiality under the Rules of Professional Conduct of the State Bar of Texas clearly conflicts with the Open Meetings Act, including without limitation, consultation regarding legal issues related to matters on this Agenda;
2. Section 551.072: To deliberate the purchase, exchange, lease, or value of real property if deliberation in an open meeting would have a detrimental effect on the position of the Authority in negotiations with a third person;
3. Section 551.074: To (1) deliberate the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of an Authority officer or employee; or (2) to hear a complaint or charge against an officer or employee; or

4. Section 551.074: To deliberate the deployment, or specific occasions for implementation, of security personnel or devices or a security audit.

VIII. RECONVENE FROM CLOSED SESSION

The Board may act on any agenda item discussed during the Closed Session.

IX. ADJOURNMENT

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1361	**Title:** Approval board minutes August 20, 2018

RECOMMENDATION:

It is recommended that the Board of Directors approve the minutes for board meeting on August 20, 2018.

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:** _____Approved
_____Denied
_____Continued until ______________

MINUTES

METROPOLITAN AREA EMS AUTHORITY
D/B/A MEDSTAR MOBILE HEALTHCARE
BOARD OF DIRECTORS MEETING

2900 Alta Mere Dr., Fort Worth, TX 76116
August 20, 2018

The Metropolitan Area EMS Authority, MedStar Mobile Healthcare Board of Directors met on August 20, 2018 at MedStar Mobile Healthcare offices.

I. CALL TO ORDER

Chairman Brian Byrd called the meeting to order at 3:03 p.m.

MedStar Board members present: Dr. John Geesbreght, Stephen Tatum, Paul Harral, Dr. Rajesh Gandhi, Douglas Hooten (Ex-officio), Dr. Neal Richmond (Ex-officio), Fire Chief Kirt Mays (Ex-officio), and Kristofer Schleicher, General Counsel for MAEMSA d/b/a MedStar Mobile Healthcare. Not present: Dr. Janice Knebl and Interim Fire Chief Kenneth Stevens (Ex-officio).

II. INTRODUCTION OF GUESTS

Others present: Dr. Gary Floyd, EPAB; Dr. Veer Vithalani, Dr. Matthew Cobb, Fellow of OMD, Dwayne Howerton, Matt Zavadsky, Ken Simpson, Joan Jordan, and Marianne Schmidt, all with MedStar.

III. NEW BUSINESS

Douglas Hooten reviewed PowerPoint of the MAEMSA Budget FY-2019.

IV. OTHER DISCUSSIONS

A. Request for future agenda items of discussion: None.

V. CLOSED SESSION

No closed session.

VI. ADJOURNMENT

There being no further business, Chairman Byrd adjourned the meeting at 4:10 p.m.

Respectfully submitted,

Paul Harral
Acting Secretary

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1362	**Title:** Approval board minutes August 22, 2018

RECOMMENDATION:

It is recommended that the Board of Directors approve the minutes for board meeting on August 22, 2018.

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:**
_____Approved
_____Denied
_____Continued until ______________

MINUTES

METROPOLITAN AREA EMS AUTHORITY
D/B/A MEDSTAR MOBILE HEALTHCARE
BOARD OF DIRECTORS MEETING

2900 Alta Mere Dr., Fort Worth, TX 76116
August 22, 2018

The Metropolitan Area EMS Authority Board of Directors met on August 22, 2018 at MedStar Mobile Healthcare offices.

I. CALL TO ORDER

Chairman Brian Byrd called the meeting to order at 10:20 a.m.

MedStar Board members present: Stephen Tatum, Paul Harral, Dr. Rajesh Gandhi, Douglas Hooten (Ex-officio), Dr. Neal Richmond (Ex-officio), Fire Chief Kirt Mays (Ex-officio), Interim Fire Chief Kenneth Stevens (Ex-officio) and Kristofer Schleicher, General Counsel for MAEMSA d/b/a MedStar Mobile Healthcare. Not present: Dr. John Geesbreght, Dr. Janice Knebl.

II. INTRODUCTION OF GUESTS

There were no guests for introductions. Others present were Fire Chief Casey Davis, Fire Chief Michael Christensen, Fire Chief Doug Spears, Jeremy Bishop of Local Board 440 Fort Worth Professional Fire Fighters Association, Dr. Veer Vithalani, Dr. Matthew Cobb, OMD Fellows, Ken Simpson, Joan Jordan, Matt Zavadsky, Dwayne Howerton, Tina Smith, Chris Cunningham, Shaun Curtis, Mike Potts, Macara Trusty, Pete Rizzo, Heath Stone, Daniel Ebbett and Marianne Schmidt, all with MedStar.

III. CONSENT AGENDA

BC – 1354 Approval of minutes for the June 7, 2018 meeting.
BC – 1355 Approval of Check History for June, 2018.
BC – 1356 Approval of Check History for July, 2018.

The motion to approve all was made by Dr. Raj Gandhi and seconded by Paul Harral.
The motions to approve all were carried unanimously.

IV. OLD BUSINESS

BC – 1352 Approval of Contract for Associate Medical Director for Tactical Medicine.
The motion to table this until Dr. Geesbreght was present was made by Dr. Byrd and seconded by Dr. Raj Gandhi. The motion to wait was carried unanimously.

V. NEW BUSINESS

BC – 1357 Approval of FY-2019 budget.
The motion to approve was made by Paul Harral and seconded by Stephen Tatum.
The motions to approve were carried unanimously.

BC – 1358 Approval to purchase 12 Dodge 4500 Chassis for Fleet replacement FY-2019.
BC – 1359 Approval to purchase 12 ambulance conversions from Demers for Fleet replacement FY-2019.
The motion to approve both was made by Dr. Raj Gandhi and seconded by Paul Harral.
The motions to approve were carried unanimously.

BC – 1360 Approval to enter into Phase II of North Deployment Center agreement to complete construction drawings and land agreement with HCP Corporation.
The motion to approve was made by Dr. Raj Gandhi and seconded by Stephen Tatum.
The motions to approve were carried unanimously.

VI. MONTHLY REPORTS

A. Chief Executive Officer: Douglas Hooten reported now that Phase II of the North Deployment Center has been approved by the board, we will start working on the terms, etc. Two of the new ambulances have arrived, please take a look at them – they are a lot different than the Type III's we have now, they are Type I's. Drivers training will be starting for these new ambulances. By mid-September, these trucks will be on the roads.

B. Chief Financial Officer: Joan Jordan reviewed Tab B.

C. Chief Operations Officer: Ken Simpson reviewed Tab C.

D. Human Resources Report: Tina Smith reviewed Tab D and the MedStar Employee Climate 2018 Survey Report. The main reason people leave MedStar is for personal reasons. Ms. Smith informed the board that the survey was available to read and that she would send the report to everyone on the board.

E. FRAB: Fire Chief Kirt Mays reported on the FRAB meeting that was held earlier this morning. The FRAB's number one concern is that an interim Medical Director be in place on October 1st.

F. Office of the Medical Director: Dr. Vithalani reviewed Tab F.

G. Compliance / Legal Reports: Kristofer Schleicher reviewed Tab G for Chad Carr who is on vacation. Dr. Gandhi asked that when there are narcotic anomalies, he would like for them to be line itemed out on the report.

H. Chief Strategic Integration Officer: Matt Zavadsky reviewed Tab H. Also, we would like to thank the Fort Worth Police department for allowing us to use their driving training tracks for our ambulance drivers training course.

VII. OTHER DISCUSSIONS

A. There were no other topics for discussion.

VIII. CLOSED SESSION

The board of directors entered closed session at 11:10 a.m. pursuant to section 551.071 of the Open Meetings Act.

IX. RECONVENE FROM CLOSED SESSION

The board of directors returned from closed session at 11:40 a.m.

X. ADJOURNMENT

There being no further business, Chairman Byrd adjourned the meeting at 11:43 a.m.

Respectfully submitted,

Paul Harral
Acting Secretary

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1363	**Title:** Approval of check register for the month of August 2018.

RECOMMENDATION:

It is recommended that the Board of Directors approve the check register for payments over $5,000 for the month August 2018.

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:**
_____Approved
_____Denied
_____Continued until ______________

MedStar - Area Metropolitan Ambulance Authority
Check History and Description Report for Checks Over $5,000
Activity From 08-01-2018 to 08-31-2018

CHECK NUMBER	CHECK DATE	DESCRIPTION	CHECK AMOUNT
93222	8/3/18	AT&T Mobility Telephone Base-Admin	18,116.68
93226	8/3/18	Bound Tree Medical LLC Medical Supplies - Logistics	20,303.43
93233	8/3/18	Direct Energy Business Utilities-Admin	15,914.66
93238	8/3/18	Fort Worth Heat & Air Facilities Maint - Logistics	8,758.75
93240	8/3/18	Fulcrum Group Monthly support + Zoom Call recording	21,089.55
93242	8/3/18	Innovative Developers, Inc. Buildings - Admin	8,067.52
93246	8/3/18	Priority Dispatch (NAEMD) Continuing Education-Cc Dply	6,050.00
93249	8/3/18	ReCept Pharmacy Medical Supplies-Logistics	5,152.11
93259	8/3/18	Tyler Technologies Implementation ERP	6,636.95
93267	8/3/18	ZirMed Inc Invoice & Forms Processing-Adm	13,124.54
93270	8/7/18	Modern Mobility LLC Ambulances	639,492.00
93276	8/10/18	Arrow International, Inc. Medical Supplies-Logistics	5,509.98
93280	8/10/18	Bound Tree Medical LLC Medical Supplies-Logistics	7,675.57
93290	8/10/18	Delta Dental Insurance Comany Dental Ins-Admin	18,416.69
93306	8/10/18	Maintenance of Ft Worth, Inc. Janitorial services	11,275.59
93314	8/10/18	O'Rourke Petroleum Fuel-Fleet	5,081.10
93316	8/10/18	Pearson Education EMT Course Expense	6,875.74
93317	8/10/18	Priority Dispatch (NAEMD) Prepaid Expense	14,394.00
93318	8/10/18	Priority Solutions Prepaid Expense	15,900.00
93320	8/10/18	PRUDENTIAL GROUP INSURANCE Life/AD&D Ins-Admin	19,080.47
93321	8/10/18	ReCept Pharmacy Medical Supplies-Logistics	19,701.21
93324	8/10/18	Solutions Group Verification Services-Admin	31,975.08

MedStar - Area Metropolitan Ambulance Authority
Check History and Description Report for Checks Over $5,000
Activity From 08-01-2018 to 08-31-2018

CHECK NUMBER	CHECK DATE	DESCRIPTION	CHECK AMOUNT
93334	8/10/18	Whitney Smith Company Compensation Analysis-HR	19,885.00
93357	8/17/18	Bound Tree Medical LLC Medical Supplies-Logistics	34,002.07
93361	8/17/18	Care Now Corporate Pre-Employment Health & Bkgr	6,789.00
93366	8/17/18	Continental Benefits Health Ins-Admin	55,794.67
93371	8/17/18	Fort Worth Heat & Air Buildings - Admin	6,589.71
93398	8/17/18	ReCept Pharmacy Medical Supplies-Logistics	10,319.27
93403	8/17/18	Tarrant County College Paramedic Class Expense	5,027.00
93408	8/17/18	Tyler Technologies Computer Software - IT	5,288.35
93410	8/17/18	XL Parts Maintenance-Fleet	6,200.57
93464	8/24/18	AT&T Telephone Base-Admin	8,317.68
93467	8/24/18	Bound Tree Medical LLC Medical Supplies-Logistics	9,317.71
93472	8/24/18	Continental Benefits Prepaid Expense	55,842.87
93493	8/24/18	ReCept Pharmacy Medical Supplies-Logistics	10,388.77
93499	8/24/18	SWC Health Solutions Collection Services-Admin	14,279.88
93507	8/24/18	Zoll Medical Corporation Repair & Maint Equip-Logistics	8,337.12
93508	8/27/18	Veteran's Administration Patient Accounts Receivable	14,888.54
93524	8/30/18	Bound Tree Medical LLC Medical Supplies-Logistics	22,335.81
93531	8/30/18	Direct Energy Business Utilities-Admin	14,299.48
93543	8/30/18	JP Morgan Chase Bank, N.A. Constr Loan - Chase	75,720.16
93550	8/30/18	NRS Collection Services-Admin	25,314.84
93554	8/30/18	ReCept Pharmacy Medical Supplies-Logistics	19,003.48
93563	8/30/18	Tyler Technologies Computer Software - IT	10,942.89

MedStar - Area Metropolitan Ambulance Authority
Check History and Description Report for Checks Over $5,000
Activity From 08-01-2018 to 08-31-2018

CHECK NUMBER	CHECK DATE	DESCRIPTION	CHECK AMOUNT
93568	8/30/18	ZirMed Inc	13,107.42
		Invoice & Forms Processing-Adm	
93569	8/30/18	Zoll Data Systems Inc	7,262.47
		Prepaid Expense	
ACH945405016	8/30/18	Dr. Veer D. Vithalani	17,050.00
		Medical Director - EPAB	
ACH945405016	8/30/18	Dr. Neal J. Richmond	23,873.00
		Medical Director - EPAB	
Wire #50912285	8/9/18	American Express	19,058.67
		MedStar Business Expenses	
Wire #51270394	8/21/18	WEX Bank	106,402.32
		Fuel	
Wire #51270395	8/21/18	Chase Ink	10,403.86
		OMD Business Expenses	
			1,554,634.23
		TOTAL ACCOUNTS PAYABLE	1,677,472.41
		TOTAL PAYROLL EXPENSE	2,140,620.52
			3,818,092.93

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1364	**Title:** Approval for land purchase from HCA.

RECOMMENDATION:

Approval of REAL ESTATE SALE, PURCHASE AND DEVELOPMENT AGREEMENT with HCA Health Services of Texas, for purchase of 3.5 acres of land at 3101 N. Tarrant Parkway, Fort Worth, Texas, for One Million Eighty Thousand and No/100 Dollars ($1,080,000). Land will be site for the North Deployment Center.
Development of the project is subject to approval of construction plans by HCA and contains covenants not to use the property to compete with the adjacent hospital (Medical City Alliance). Transfer of the property to certain classes of competitors would require approval from the Hospital. MAEMSA is not required to close unless final construction plans, as approved by the seller, are also be acceptable to the MAEMSA board. The contract contains the following timetable:

Agreement Date - $100 earnest money
- Drawings and Specs submitted promptly
- 5 Days -- Earnest Money due (25k or 5k)
- 30 Days -- Hospital to deliver survey at hospital's cost (HCA says we pay)
- 120 Days -- Inspection Period ends, all conditions to closing satisfied

Closing Date – 180 Days or 60 days after all conditions satisfied or waived
- Balance of purchase price due; deed delivered
- 60 days -- building permit obtained
- 90 days -- Projected Commencement Date
- 12 Months -- Projected Completion Date

Required Completion Date – 90 days after Projected Completion Date

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:**
_____Approved
_____Denied
_____Continued until _____________

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1365	**Title:** Approval of Interim Medical Directors Contract.

RECOMMENDATION:

It is recommended that the Board of Directors approve the Interim Medical Directors Contract.

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:** _____Approved
_____Denied
_____Continued until ______________

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1366	**Title:** Approval of Interim Associate Medical Director Contract

RECOMMENDATION:

It is recommended that the Board of Directors authorize a contract with an Interim Associate Medical Director.

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:** _____Approved
_____Denied
_____Continued until ______________

MAEMSA
BOARD COMMUNICATION

Date: 09/26/18	**Reference #:** BC-1367	**Title:** Approval of NICE Software Update for Comms

RECOMMENDATION:

It is recommended that the Board of Directors approve the purchase of software updates for NICE software for communications.

DISCUSSION:

N/A

FINANCING:

N/A

Submitted by: **Douglas Hooten** **Board Action:** _____Approved
_____Denied
_____Continued until ______________

***** INFORMATION MUST BE TYPED ***** SHADED AREAS ARE COMPUTER FORMATED ****

MedStar
REQUEST FOR CAPITAL EXPENDITURE (RCE)

DATE	REQUISITIONER	DEPARTMENT	COST CENTER	ACCT CODE	CAPITAL TRACKING #
09/20/18	Dale Rose	Comm 3000			

Budgeted Funds?

	IF YES - LIST BUDGET NUMBER (s)					
	BUDGET #	AMOUNT	MONTH	BUDGET #	AMOUNT	MONTH
X Yes		$105,650				
No						

PROJECT TITLE: NICE Recording Software Upgrade

CAPITAL CATEGORY: Choose "X" only one (prioority) 1 2 3

DESCRIPTION OF ITEMS BEING REQUESTED:

NICE Recording Software upgrade from Inform v7 to Inform v8 Professional to include AQUA (EMD QA Software) integration and Evaluator components.

QUALITATIVE JUSTIFICATION: (Attach supporting documentation if necessary)

The MedStar Communications QA/QI team currently reviews 700-900 emegency calls monthly as part of our Quality Assurance process utilizing Priority Dispatch AQUA software. With the NICE/AQUA integration, it will eliminate several minutes per call of searching for recordings within a seperate recording system. This integration allows the evaluator to conveniently playback call audio recordings related to the case of interest directly from their AQUA interface. This alone could save upwards of 40-60 hours/month in searching for audio.

Non-emergency transports are currently reviewed for Qualtiy Assurance utilizing Microsoft Excel documents with audio from the NICE recorder, making it difficult for reporting. The NICE Evaluator component automates manual processes directly within the NICE software utilizing customizable forms that are designed to be agency specific. The Evaluator component allows reporting directly from the software versus a manual process to provide insight on the overall performance and service quality to our communications center based on individual, teams and the entire center.

***** PURCHASE REQUISITION(s) & ALL QUOTES/CONTRACTS/LEASE DOCUMENTS MUST BE ATTACHED *****

DATE	SIGNATURES	REQUESTED EXPENDITURE		
9/20/18	DEPT./DIRECTOR LEVEL: [signature]	PROPOSED CAPITAL (Tax Exempt)	$	105,649.50
9/20/18	CHIEF FINANCIAL OFFICER [signature]	OTHER RELATED EXPENSE (EXPLAIN ABOVE)	$	{Annual} 0
	EXECUTIVE DIRECTOR	PROPOSED PROJECT TOTAL (Total of capital & other exp.)	$	105,649.50
	CHAIRMAN OF THE BOARD OF DIRECTORS	Opened:	Closed:	Actual:
Revised 09/12				

Area Metrro Ambulance MedStar Emergency Medical Services
2900 Alta Mere Drive
Fort Worth, Texas 76116

September 18, 2018

Bill Kennedy
Sr. Sales Representative
817-789-8610
bkennedy@crosspointcomm.com

Dale Rose
Kenneth Simpson

Proposal Description: Proposal provides for an Inform upgrade from v7.x to 8 Professional; replacing an existing NRX with new NIR Logging server- recording 40 channels of Vesta v7 VoIP Existing NRX Data base will move to existing Inform server new 2016 SQL and OS are proposed Inform 8 Professional integrates with an existing IP radio Logger Includes Evidence Pack, QA and Screen Recording

PRODUCTS

Quantity	Part Number	Description	HGAC CONTRACT PRICE	Total Sell Price
PRODUCTS				
120	TT06314AA	QA PACK site license. Adds Evaluator - New	187	22440
15	TT06306AA	1 Inform Professional/Elite Software Screen Recording channel license, including Inform Professional/Elite application support - New	467.5	7012.5
1	DDN2521A	MS SQL 2016 64 bit Server Client Access License	340	340
15	DDN2522A	MS SQL 2016 64 bit User/Device Client Access License	340	5100
1	DDN2523A	MySQL Server license (Standard Edition)	374	374
2	DDN2110A	HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive for Gen9 ML350, DL180 and DL360	2380	4760
120	TT06303AA	1 Primary Inform Professional Audio channel license, including Inform Professional applications site license, User Registration application, Record-on-Demand application, CTD, telephony CDR, CTI and ANI/ALI support. - Upgrade	607.75	72930
40	TT06305AA	Additional channel premium for a P25 TR channel - Upgrade	187	7480
120	TT06313AA	Evidence Compliance PACK site license. Adds Organizer and Media Player - Upgrade	187	22440
1	DDN2525A	Windows Server 2016 64Bit, Embedded, Standard, Multi Language, 16 Cores	833	833
1	TT3290A	Single Telephony Recorder Base Bundle	11050	11050

DISCOUNT

96800	DDN2644A	NICE UPGRADE DISCOUNT	-1.00	96800

Total Products:	154,759.50
TOTAL ECAT w/Discounts	57,959.50

PROFESSIONAL SERVICES

Description	Part Number	Quantity	UNIT PRICE	Discount (%)	Unit Sell Price	Total Sell Price
EDUCATION SERVICES						
NICE Inform 2-day instructor led training for up to 6 students held at the client site. Covers Verify, Monitor, Reconstruction, Organizer and Reporter, as well as adminstration applications. (Excludes Evaluator QA).	PS-TR-EU12-PS	1	8100			8100
Additional day of instructor led NICE Inform Evaluator QA training for up to 6 students held at the client site, in addition to PS-TR-EU12-PS	PS-TR-EU14-PS	1	4050			4050
Online self-paced applications training for NICE Recording - 1 year access (price per user)	PS-TR-EP-NR01-PS	1	405			405
Instructor travel and expenses per trainer for 3 days	PS-TR-INTE-03-PS	1	2025			2025
INSTALLATION/INTEGRATION						
First day on site per person per week. Not required for remote installations.	PS-IN-RPI31-PS	1	1350			1350
Installation/Configuration of CTI/CDR/CTD integration, per NIR Core	PS-IN-ASC02-PS	1	2700			2700
T&E per person per week North America. Not required for remote installations.	PS-IN-RPI36-PS	1	3375			3375
Stand alone ANI/ALI Install and configuration	PS-IN-ASC17-PS	1	1350			1350
Uplift for configuration of NICE Inform Evaluator - up to 50 PS Operators	PS-IN-ASC24-PS	1	1350			1350
Uplift for installation/configuration of Software Screen Recording Satellite	PS-IN-ASC37-PS	1	675			675
Remote installation/configuration of ProQA AQUA integration to NICE Inform per concurrent user - max 2 workstations configured	PS-IN-ASC40-PS	5	1350			6750
Daily services fee for Moves/Adds/Changes, Monday - Friday, 8 - 5 local time	PS-UG-01-PS	1	2025			2025
Migrate NICELog legacy data source to new location (per CLS/IC)	PS-UG-06-PS	1	4050			4050
Cold Install on Server	SVC03SVC0124D	1	710			710
TECHNICAL IMPLEMENTATION BUNDLE						
Tech Implementation: First Recording System, up to 48 audio channels	PS-TEC-IEIP-01-PS	1	8775			8775
					Total	

Total Services:	46980

TOTAL	105,649.50
	$ 105,649.50

Call Playback within Priority Dispatch AQUA™

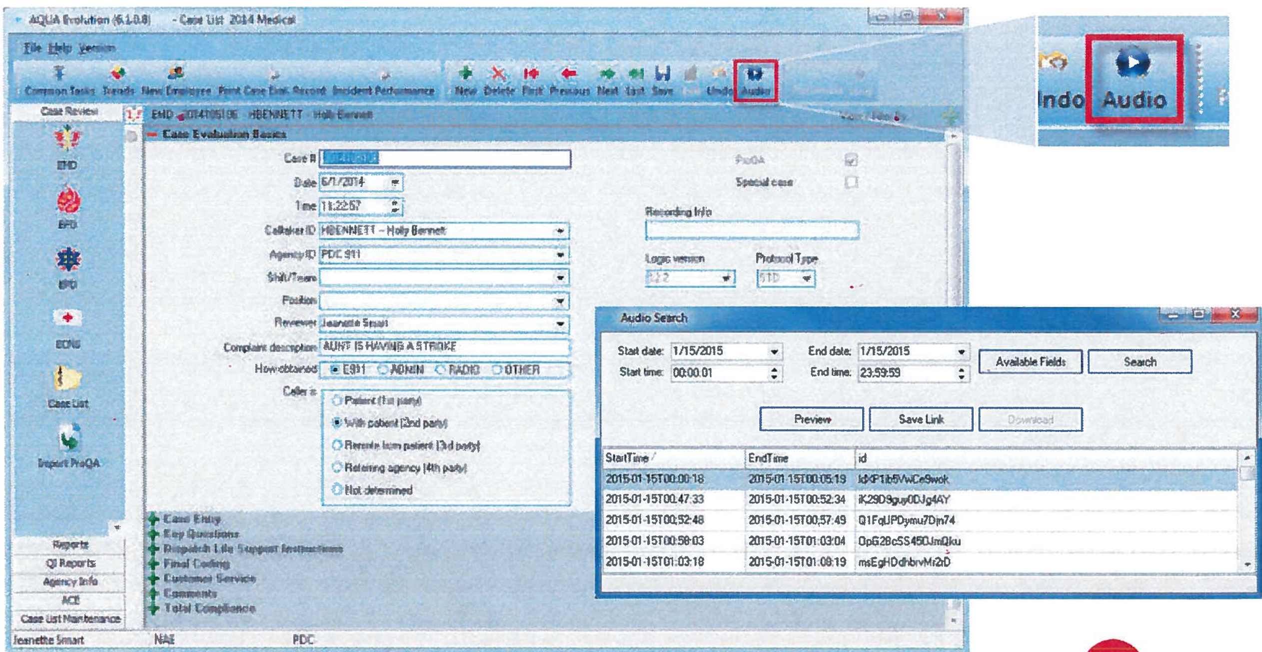
Streamline QA Case Review Workflow with Integrated Call Recording

Priority Dispatch and NICE Systems are helping streamline the case review process and make your job much easier. Now you can conveniently playback call audio recordings related to cases of interest directly from your AQUA Evolution™ case review interface – eliminating time-consuming need to search for recordings within a separate recording system and toggle between different applications while performing a quality evaluation.

Save Time with Convenient Access to Recorded Calls

With the addition of **NICE Inform** communications recording, Priority Dispatch AQUA Evolution users can conveniently playback call audio recordings related to the case of interest directly from their AQUA interface.

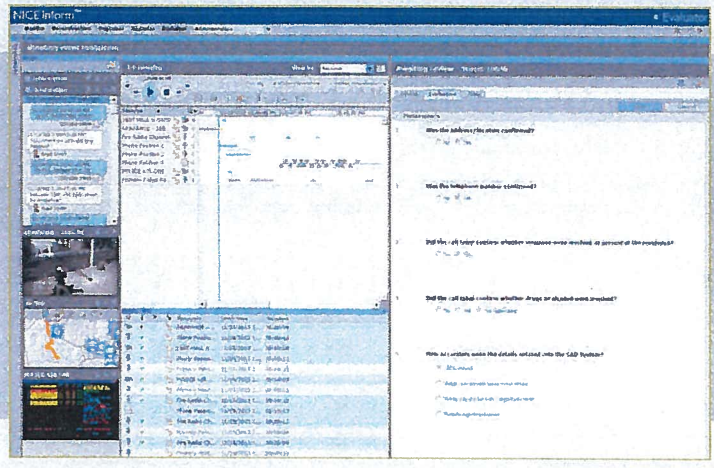
- ProQA, which drives caller interrogation processes via a set of questions in sequence per standardized protocols, automatically relays collected information to the CAD system for dispatch and AQUA Evolution pinpoints specific training needs and liability risks.
- Within AQUA Evolution Case Review, clicking the **Audio** button on a case for the first time opens up an **Audio Search** window. Audio searches can be fine-tuned using the date/time range and any other available search fields. Clicking the **Search** button invokes a call to the NICE Inform API to retrieve matching call recording(s) stored within NICE's database.
- When the correct recording has been identified, clicking the **Save Link** button inserts and stores a link identifier into the **Recording Info** field for that case. Clicking the **Audio** button again, at any point in the future, then automatically plays back the audio recording in a standard, open source (VLC) media player.

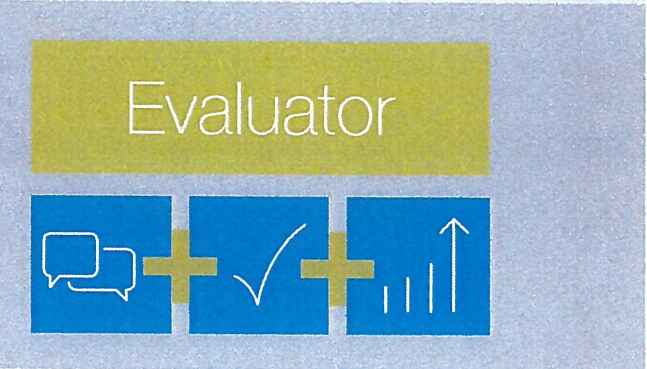


- Integration implemented and supported by NICE partner Word Systems, Inc.

NICE ▪ Inform

Elevate Your Quality Assurance with Workflow Automation





"In addition to cost savings, we experienced improved employee morale at the same time that our staff was becoming more efficient and professional."

– Jhonnie Ortiz, Public Safety Support Manager, Fort Worth Police Department, Texas

NICE Inform Evaluator is a public safety quality assurance and improvement (QA/QI) solution that helps PSAPs reduce risk and improve emergency response – by identifying telecommunicator knowledge gaps and compliance weaknesses, so they can be proactively addressed through coaching and training. By involving telecommunicators in the QA process, providing specific feedback and recognizing exemplary performance, PSAPs can also improve employee engagement, accountability, professionalism and job satisfaction.

Automates Manual Processes

Manually hunting for the correct number and type of prescribed calls to evaluate is very time consuming. This could be better spent coaching employees, or even reviewing more calls. NICE Evaluator's automated, rules-based call selection cuts evaluation time in half, while increasing objectivity and consistency of your QA/QI program – which instills employee confidence.

Support for APCO NENA QA/QI and CALEA Standards

NICE Evaluator can be easily configured to support evaluation forms recommended by the latest APCO NENA ANSI-approved standard for QA/QI. The evaluation forms can be adapted to your agency's requirements. Customizable reports help management identify best practices and areas requiring attention to ensure continuous improvement.

Seamless Experience with One Interface

As an integrated module within the NICE Inform application suite, NICE Evaluator uses the same interface as the recording and incident reconstruction solution so you have everything you need, right at your fingertips.

Customizable Forms for Objective Review

Maximize the impact of your evaluations with customized call taking and dispatch QA evaluation forms. QA analysts and supervisors can easily score for protocol compliance, knowledge, empathy and other important criteria. You can tailor evaluation questions and forms to different job responsibilities, seniority, types of incidents, or anything else that's important to you. In addition to measuring individual performance, you can assess whether call-taking and dispatching processes are functionally efficient.

Evaluate Single Calls or Entire Incidents

Evaluate a single call, a text message interaction, or the entire incident. Armed with complete incident information, management can gain substantially more insight into the incident handling process, teamwork, and individual contributions, which helps them identify best practices and areas requiring attention and improvement.

NICE Inform Reporter

The NICE Inform Reporter module not only provides QA reports on individual employee and incident performance, it also delivers valuable insights on the overall performance and service quality of your communications center.

- **QA Reporting** – Based on ongoing QA reviews, these reports provide insight on the performance of individual telecommunicators, teams/shifts and the entire center.
- **Call Activity Reporting** – Get insight into the volume of phone calls and radio communications on various days and times, so you can make better staffing decisions.

About NICE Public Safety

NICE Public Safety solutions integrate and put into context information from many sources to help emergency communications centers and investigation departments reconstruct and understand the who, what, when, where and why of an incident. NICE Inform, the industry-leading digital evidence management (DEM) solution, gives emergency communications centers better insight into how to continuously improve their operations. NICE Investigate is the first digital investigation solution for law enforcement that automates and expedites the entire digital investigation process, helping to solve more cases faster. Over 3,000 organizations worldwide rely on NICE Public Safety solutions.

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Tab A – Chief Executive Officer

Tab B – Chief Financial Officer

Metropolitan Area EMS Authority dba MedStar Mobile Healthcare
Finance Report – September 26, 2018

The following summarizes significant items in the August, 2018 Financial Reports:

Balance Sheet:

- Accounts Receivable – Current year exceeds prior year by approximately $6million due primarily to timing of write-offs as well as increased transports in current year.

Statement of Revenues and Expenses:

- Benefits and Taxes – under budget by $219,766 due to reimbursement from Stop Loss Carrier for large claims.
- Professional Fees – over budget by $30,187 due to additional services from Solutions Group and Nationwide Recovery offset by additional collections.
- Educational Expense – over budget by $33,612 due to purchases of books and other materials prior to the start of the next EMT class in September.
- Overall, net retained earnings for the 11 months ended is $3,202,883 as compared to budgeted earnings of $3,055,634 for a positive variance of $147,249.

Key Financial Indicators:

- Current Ratio – MedStar has $24.29 in current assets (Cash, receivables) for every dollar in debt. (Goal: a score of $1.00 would mean sufficient current assets to pay debts.)
- Cash as % of Annual Expenditures – Our goal is 50% of annual estimated expenditures held in cash accounts. Currently, cash is 54.55% of expense.
- Accounts Receivable Turnover – This statistic indicates MedStar's effectiveness in extending credit and collecting debts by indicating the average age of the receivables. MedStar's goal is a ratio greater than 3.0 times; current turnover is 2.44 times.
- Return on Net Assets – This ratio determines whether the agency is financially better off than in previous years by measuring total economic return. An improving trend indicates increasing net assets and the ability to set aside financial resources to strengthen future flexibility. Management has budgeted a return of 8.77% on assets. Through August, the return is an estimated 8.80%.

Billing Trends:

- 104,549 encounters have been billed at a cost of $1,738,297 for a cost per claim of $16.63. This is slightly lower than FY17 overall $16.95 cost per claim. Budgeted cost per claim for FY18 is $17.36.

MedStar - July 2018 - Summary and Trends

Net Income Trend	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18
Revenue	$ 4,022,213	$ 3,997,737	$ 4,231,994	$ 3,946,304	$ 4,146,038	$ 4,083,450
Expenses	$ 3,827,378	$ 3,696,603	$ 3,857,923	$ 4,037,212	$ 3,781,939	$ 3,673,086
Net Income	$ 194,835	$ 301,134	$ 374,071	$ (90,908)	$ 364,099	$ 410,364

Notes: Jun 18 included 3 payrolls plus a holiday, causing the excess in expenses.

Net Earnings Annual:	
YTD 2018	$ 3,202,883
9/30/2017	$ 8,841,414
9/30/2016	$ 9,469,805
9/30/2015	$ 6,718,929
9/30/2014	$ 5,755,653
9/30/2013	$ 5,821,481
9/30/2012	$ 2,788,129

Cash in Bank	
Current Month	$ 21,192,817
9/30/2017	$ 22,701,779
9/30/2016	$ 24,621,458
9/30/2015	$ 19,065,406
9/30/2014	$ 23,308,668
9/30/2013	$ 24,307,199
9/30/2012	$ 19,053,393

Billed Transports:	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18
Emergency	8,364	8,235	8,676	8,286	8,713	8,822
Non Emergency	1,093	1,012	1,093	972	1,020	1,041
Total	9,457	9,247	9,769	9,258	9,733	9,863

	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18
Cash Collections:	$ 4,502,022	$ 3,583,205	$ 3,966,581	$ 3,520,950	$ 3,884,400	$ 3,723,658

Metropolitan Area EMS Authority dba MedStar Mobile Healthcare
Balance Sheet as of August 31, 2018

ASSETS

	Aug-18	Aug-17
Current Assets		
Cash and Equivalents	$ 21,192,817.10	$ 22,010,866.68
Patient Accounts Receivable	19,251,434.69	13,810,229.75
Other Receivable	439,776.13	271,966.55
Inventory	299,899.39	279,522.33
Prepaid Insurance and Expemse	997,218.40	690,155.26
Total Current Assets	$ 42,181,145.71	$ 37,062,740.57
Property and Equipment	$ 30,360,215.12	$ 28,618,478.41
Total Assets	$ 72,541,360.83	$ 65,681,218.98

LIABILITIES AND CAPITAL

	Aug-18	Aug-17
Current Liabilities		
Accounts Payable	$ 186,245.46	$ 590,001.69
Interest Payable	3,859.98	3,859.98
Payroll Taxes and Benefits Payable	1,546,429.60	1,457,659.61
Total Current Liabilities	$ 1,736,535.04	$ 2,051,521.28
Long-Term Liabilities		
Consulting Retainer	2,370.46	2,370.46
Deferred Subscription Income	165,050.21	189,643.57
Construction Loan Chase	4,413,893.50	5,209,838.98
Total Long-Term Liabilities	$ 4,581,314.17	$ 5,401,853.01
Total Liabilities	$ 6,317,849.21	$ 7,453,374.29
Net Assets <Deficit>		
Capital Contribution	$ 316,920.50	$ 316,920.50
Retained Earnings - Unrestricted	$ 62,095,088.05	53,822,376.67
Retained Earnings - Restricted	$ 608,619.69	-
Net Income	$ 3,202,883.38	4,088,547.52
Total Net Assets <Deficit>	$ 66,223,511.62	$ 58,227,844.69
Total Liabilities & Net Assets <Deficit>	$ 72,541,360.83	$ 65,681,218.98

Metropolitan Area EMS Authority dba MedStar Mobile Healthcare
Statement of Revenues and Expenditures
11 Months Ended August 31, 2018
[Actual compared with Budget]

	Current Month	Current Month	Currrent Month	Year to Date	Year to Date	Year to Date
Revenues						
Patient Fees-Service	13,967,892.33	13,604,235.00	363,657.33	150,716,879.45	151,395,311.00	(678,431.55)
Less: Contractual Allowances	(5,990,137.76)	(3,822,742.00)	(2,167,395.76)	(60,132,532.18)	(42,529,740.00)	(17,602,792.18)
Less: Provsion for Uncollectibles	(4,054,919.96)	(5,973,168.00)	1,918,248.04	(47,547,919.91)	(66,496,060.00)	18,948,140.09
Patient Fees - NET	3,922,834.61	3,808,325.00	114,509.61	43,036,427.36	42,369,511.00	666,916.36
Special Events	28,911.00	44,507.00	(15,596.00)	409,341.00	489,585.00	(80,244.00)
Subsidy	1,820.54	1,821.00	(0.46)	25,999.06	26,003.00	(3.94)
Education	16,772.33	2,474.00	14,298.33	125,352.20	82,246.00	43,106.20
Other	44,143.46	26,781.00	17,362.46	711,204.56	302,582.00	408,622.56
Mobile Integrated Health Projects	68,968.21	40,515.00	28,453.21	607,148.61	445,665.00	161,483.61
Clinical Research	0.00	1,000.00	(1,000.00)	9,115.00	11,000.00	(1,885.00)
Total Revenues	$ 4,083,450.15	$ 3,925,423.00	158,027.15	$ 44,924,587.79	$ 43,726,592.00	1,197,995.79
Payroll	2,196,109.28	2,130,333.00	65,776.28	24,664,489.05	24,031,804.00	632,685.05
Benefits and Taxes	312,652.95	532,419.00	(219,766.05)	5,459,342.77	6,072,576.00	(613,233.23)
Fuel	114,729.14	72,000.00	42,729.14	1,039,585.32	792,000.00	247,585.32
Oxygen	6,834.30	5,161.00	1,673.30	68,126.71	56,771.00	11,355.71
Medical Supplies	165,339.77	176,761.00	(11,421.23)	1,855,080.72	1,944,371.00	(89,290.28)
Other Vehicle & Equipment	62,999.11	56,677.00	6,322.11	650,246.97	624,041.00	26,205.97
Rent & Utilities	56,520.11	45,666.00	10,854.11	523,024.90	481,352.00	41,672.90
Repairs & Maintenance Facility & Equipmnt	33,606.74	17,203.00	16,403.74	333,362.86	204,802.00	128,560.86
Postage & Shipping	19,305.00	29,453.00	(10,148.00)	187,968.77	323,984.00	(136,015.23)
Equipment Rental	6,377.01	6,649.00	(271.99)	42,898.08	73,139.00	(30,240.92)
Insurance	28,100.25	33,581.00	(5,480.75)	343,224.79	369,390.00	(26,165.21)
Advertising & Public Relations	6,273.50	6,329.00	(55.50)	55,220.31	48,547.00	6,673.31
Printing	4,857.17	3,225.00	1,632.17	50,274.52	35,466.00	14,808.52
Travel & Entertainment	10,292.76	5,711.00	4,581.76	110,164.78	140,803.00	(30,638.22)
Professional Fees	148,536.98	118,350.00	30,186.98	1,510,209.55	1,406,420.00	103,789.55
Non-Capital Equipment	5,371.26	11,479.00	(6,107.74)	154,251.33	168,671.00	(14,419.67)
Educational Expense/Training	45,540.66	11,929.00	33,611.66	253,584.07	259,030.00	(5,445.93)
Office Equip Maint	124,077.34	92,181.00	31,896.34	1,299,691.84	1,013,991.00	285,700.84
Bank Service Charges	8,303.74	11,181.00	(2,877.26)	80,825.31	122,991.00	(42,165.69)
Dues & Subscriptions	5,037.60	5,370.00	(332.40)	65,213.03	82,049.00	(16,835.97)
Computer Related Costs	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous	41.51	145.00	(103.49)	4,900.36	1,595.00	3,305.36
Total Expenses	$ 3,360,906.18	$ 3,371,803.00	(10,896.82)	$ 38,751,686.04	$ 38,253,793.00	497,893.04
Earnings before Interest & Depreciation	722,543.97	553,620.00	168,923.97	6,172,901.75	5,472,799.00	700,102.75
Interest	9,391.37	9,856.00	(464.63)	99,736.83	108,407.00	(8,670.17)
Depreciation	302,788.47	209,887.08	92,901.39	2,870,281.54	2,308,757.88	561,523.66
Net Retained Earnings	$ 410,364.13	$ 333,876.92	76,487.21	$ 3,202,883.38	$ 3,055,634.12	147,249.26

Metropolitan Area EMS Authority dba MedStar Mobile Healthcare
Statement of Revenues and Expenditures
11 Months Ended August 31, 2018
[Actual compared with Prior Year]

	Current Month	Prior Month	Currrent Month	Year to Date	Prior Year Actual	Year to Date
Revenues						
Patient Fees-Service	13,951,469.06	13,800,104.72	151,364.34	150,512,789.98	145,764,370.06	4,748,419.92
Less: Contractual Allowances	(5,990,137.76)	(5,475,986.88)	(514,150.88)	(60,132,532.18)	(58,389,652.98)	(1,742,879.20)
Less: Provsion for Uncollectibles	(4,054,919.96)	(4,362,073.98)	307,154.02	(47,547,919.91)	(45,639,690.87)	(1,908,229.04)
Patient Fees - NET	3,906,411.34	3,962,043.86	(55,632.52)	42,832,337.89	41,735,026.21	1,097,311.68
Special Events	28,911.00	21,239.00	7,672.00	409,341.00	416,010.00	(6,669.00)
Subsidy	1,820.54	1,820.54	0.00	25,999.06	25,999.06	0.00
Education	16,772.33	14,586.14	2,186.19	125,352.20	110,011.58	15,340.62
Other	44,143.46	124,107.10	(79,963.64)	711,204.56	410,651.17	300,553.39
Mobile Integrated Health Projects	85,391.48	47,094.50	38,296.98	811,238.08	600,385.99	210,852.09
Clinical Research	0.00	2,100.00	(2,100.00)	9,115.00	25,546.00	(16,431.00)
Total Revenues	$ 4,083,450.15	$ 4,172,991.14	(89,540.99)	$ 44,924,587.79	$ 43,323,630.01	1,600,957.78
Payroll	2,196,109.28	2,084,748.02	111,361.26	24,664,489.05	23,314,273.27	1,350,215.78
Benefits and Taxes	312,652.95	512,725.09	(200,072.14)	5,459,342.77	5,697,919.52	(238,576.75)
Fuel	114,729.14	78,429.96	36,299.18	1,039,585.32	739,054.51	300,530.81
Oxygen	6,834.30	5,497.75	1,336.55	68,126.71	56,303.80	11,822.91
Medical Supplies	165,339.77	195,327.78	(29,988.01)	1,855,080.72	1,958,941.18	(103,860.46)
Other Vehicle & Equipment	64,557.09	58,493.97	6,063.12	658,531.69	604,463.02	54,068.67
Rent & Utilities	56,520.11	43,594.17	12,925.94	523,024.90	449,836.97	73,187.93
Repairs & Maintenance Facility & Equipmnt	33,606.74	14,675.67	18,931.07	333,362.86	180,205.20	153,157.66
Postage & Shipping	19,305.00	14,173.87	5,131.13	187,968.77	164,123.85	23,844.92
Equipment Rental	4,819.03	3,373.33	1,445.70	34,613.36	58,988.33	(24,374.97)
Insurance	28,100.25	26,682.27	1,417.98	343,224.79	353,328.62	(10,103.83)
Advertising & Public Relations	6,273.50	10,731.14	(4,457.64)	55,220.31	104,105.54	(48,885.23)
Printing	4,857.17	7,253.46	(2,396.29)	50,274.52	36,392.17	13,882.35
Tehnical Support	0.00	0.00	0.00	0.00	0.00	0.00
Travel & Entertainment	10,292.76	24,343.65	(14,050.89)	110,164.78	124,892.96	(14,728.18)
Professional Fees	148,536.98	177,430.07	(28,893.09)	1,510,209.55	1,406,595.08	103,614.47
Non-Capital Equipment	5,371.26	23,109.31	(17,738.05)	154,251.33	132,695.18	21,556.15
Educational Expense/Training	45,540.66	17,919.73	27,620.93	253,584.07	204,936.97	48,647.10
Office Equip Maint	124,077.34	108,792.92	15,284.42	1,299,691.84	1,065,848.41	233,843.43
Bank Service Charges	8,303.74	9,378.41	(1,074.67)	80,825.31	110,134.60	(29,309.29)
Dues & Subscriptions	5,037.60	6,215.71	(1,178.11)	65,213.03	71,329.59	(6,116.56)
Computer Related Costs	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous	41.51	140.78	(99.27)	4,900.36	2,683.04	2,217.32
Total Other Expenses	$ 3,360,906.18	$ 3,423,037.06	(62,130.88)	$ 38,751,686.04	$ 36,837,051.81	1,914,634.23
Earnings before Interest & Depreciation	722,543.97	749,954.08	(27,410.11)	6,172,901.75	6,486,578.20	(313,676.45)
Interest	9,391.37	10,016.19	(624.82)	99,736.83	114,179.74	(14,442.91)
Depreciation	302,788.47	230,120.44	72,668.03	2,870,281.54	2,283,850.94	586,430.60
Net Retained Earnings	$ 410,364.13	$ 509,817.45	(99,453.32)	$ 3,202,883.38	$ 4,088,547.52	(885,664.14)

Metropolitan Area EMS Authority dba MedStar Mobile Healthcare
Statement of Revenues and Expenditures
11 Months Ended August 31, 2018
[Office of the Medical Director]

	Current Month	Current Month	Currrent Month	Year to Date	Year to Date	Year to Date
Revenues						
Patient Fees-Service	0.00	0.00	0.00	0.00	0.00	0.00
Less: Contractual Allowances	0.00	0.00	0.00	0.00	0.00	0.00
Less: Provsion for Uncollectibles	0.00	0.00	0.00	0.00	0.00	0.00
Patient Fees - NET	0.00	0.00	0.00	0.00	0.00	0.00
Special Events	0.00	0.00	0.00	0.00	0.00	0.00
Subsidy	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.00	5,000.00	0.00	5,000.00
Mobile Integrated Health Projects	0.00	0.00	0.00	0.00	0.00	0.00
Clinical Research	0.00	1,000.00	(1,000.00)	9,115.00	11,000.00	(1,885.00)
Total Revenues	$ 0.00	$ 1,000.00	(1,000.00)	$ 14,115.00	$ 11,000.00	3,115.00
Payroll	55,229.27	65,948.00	(10,718.73)	699,236.62	732,757.00	(33,520.38)
Benefits and Taxes	5,819.23	8,277.00	(2,457.77)	89,896.48	97,879.00	(7,982.52)
Fuel	0.00	0.00	0.00	0.00	0.00	0.00
Oxygen	0.00	0.00	0.00	0.00	0.00	0.00
Medical Supplies	0.00	0.00	0.00	0.00	0.00	0.00
Other Vehicle & Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Rent & Utilities	298.44	3,775.00	(3,476.56)	11,548.06	20,525.00	(8,976.94)
Repairs & Maintenance Facility & Equipmnt	0.00	0.00	0.00	0.00	0.00	0.00
Postage & Shipping	0.00	0.00	0.00	0.00	0.00	0.00
Equipment Rental	1,557.98	792.00	765.98	8,284.72	8,712.00	(427.28)
Insurance	0.00	1,917.00	(1,917.00)	22,157.40	21,087.00	1,070.40
Advertising & Public Relations	0.00	0.00	0.00	0.00	0.00	0.00
Printing	0.00	125.00	(125.00)	665.09	1,375.00	(709.91)
Travel & Entertainment	4,954.02	525.00	4,429.02	22,449.79	33,342.00	(10,892.21)
Professional Fees	44,509.50	46,657.00	(2,147.50)	452,739.50	513,227.00	(60,487.50)
Non-Capital Equipment	0.00	0.00	0.00	373.63	5,000.00	(4,626.37)
Educational Expense/Training	4,697.60	0.00	4,697.60	18,295.79	14,400.00	3,895.79
Office Equip Maint	0.00	0.00	0.00	0.00	0.00	0.00
Bank Service Charges	0.00	0.00	0.00	0.00	0.00	0.00
Dues & Subscriptions	0.00	1,728.00	(1,728.00)	8,441.75	21,371.00	(12,929.25)
Computer Related Costs	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous	0.00	0.00	0.00	0.00	0.00	0.00
Total Expenses	$ 117,066.04	$ 129,744.00	(12,677.96)	$ 1,334,088.83	$ 1,469,675.00	(135,586.17)
Earnings before Interest & Depreciation	(117,066.04)	(128,744.00)	11,677.96	(1,319,973.83)	(1,458,675.00)	138,701.17
Interest	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Net Retained Earnings	($ 117,066.04)	($ 128,744.00)	11,677.96	($ 1,319,973.83)	($ 1,458,675.00)	138,701.17

Metropolitan Area EMS Authority dba MedStar Mobile Healthcare
Key Financial Indicators
August 31, 2018

	Goal	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Current Ratio	**> 1**	**19.79**	**14.11**	**19.79**	**19.79**	**24.29**

Ratio should be greater than 1, so that assets are available to retire debt when due.

	Goal	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Cash as % of Annual Expenditures	**> 50%**	**69.01%**	**49.02%**	**65.31%**	**55.06%**	**54.55%**

Indicates compliance with Ordinance which specifies 3 months cash on hand. Debt covenants specify 50% of annual cash expenditures.

	Goal	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Accounts Receivable Turnover	**>3**	**8.26**	**5.47**	**4.16**	**3.40**	**2.44**

A measure of how these resources are being managed. Indicates how long accounts receivable are being aged prior to collection. Our goal is a turnover rate of greater than 3 .

	Goal	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Return on Net Assets	**8.77%**	**15.11%**	**16.66%**	**21.13%**	**15.48%**	**8.80%**

Reveals management's effectiveness in generating profits from the assets available. Budgeted return on net assets for FY18 is 8.77%.

MAEMSA/Medstar - Capital Tracking FY2017-2018

Item Description	Dept		FY2018	Expended	Remaining
Carryover from FY16-17					
ERP Software	Admin		$ 450,000	$ 58,004	$ 391,996
Billing Software	Admin		$ 250,000	$ -	$ 250,000
Cardiac Monitors (Approved Aug 17)	Logistics		$ 2,450,000	$ 1,997,388	$ -
i-STAT	CHP		$ 10,000	$ 20,069	$ (10,069)
NICE recorder Aqua revolution upgrade	Comms		$ 105,000	$ -	$ 105,000
Remount 6 ambulances	Fleet		$ 420,000	$ 467,932	$ -
Purchase 60 ambulances over 5 years	Fleet		$ 2,475,000	$ 610,056	$ 1,864,944
Equipment needed for 3 addl ambulances	Fleet		$ 153,337	$ 137,643	$ -
Cloverleaf hospital connections	IT		$ 50,000	$ -	$ 50,000
Blade Chassis carry forward	IT		$ 242,000	$ -	$ 242,000
End User Technology Refresh	IT		$ 41,800	$ -	$ 41,800
Server Technology Refresh	IT		$ 30,000	$ -	$ 30,000
Spot Cooler for Data Center	IT		$ 7,500	$ -	$ 7,500
In-Dash GPS Units	IT		$ 23,030	$ -	$ 23,030
Network Enhancements	IT		$ 20,000	$ -	$ 20,000
Tablet Replacements	IT		$ 67,827	$ 37,125	$ 30,702
Anti virus upgrade	IT		$ 25,000	$ -	$ 25,000
ImageTrend Data Mart	IT		$ 35,000	$ -	$ 35,000
Refresh gateways in ambulances 1/3 per year	IT		$ 25,000	$ 21,623	$ 3,377
Replace portable radios	Logistics		$ 150,000	$ 65,946	$ 84,054
Additional Capital Items FY 2017-2018					
Purchase 12 Dodge Chassis (Sep 2017 Mtg)	Fleet		$ 513,732	$ 527,872	$ -
Diagnostic Software and tools (Sep 2017 Mtg)	Fleet		$ 21,074	$ -	$ 21,074
Building Retrofit (Sep 2017 Mtg)	Fleet		$ 214,278	$ 222,514	$ -
Quality Air and Lift (4) (Sep mtg)	Fleet		$ 85,722	$ 63,477	$ -
Compter room dehumidification	IT		$ 25,547	$ 25,547	$ -
Restroom Privacy Modifications	Facility		$ 43,936	$ 43,936	$ (0)
North Deployment Center (Feb 2018 mtg) Phase I	Facility		$ 3,000	$ 21,393	$ (18,393)
Logis Solutions - FRO interfaces	IT		$ 24,000	$ 24,000	$ -
T-Mobile Apple Iphones	IT		$ 15,600	$ 15,600	$ 0
CHP Chevy Malibu	CHP		$ 28,233		
Painting	Facility			$ 16,917	
North Parking Lot repairs	Facility			$ 12,195	
Total Capital Request			**$ 8,005,616**	**$ 4,389,237**	**$ 3,197,014**

Business Gold Rewards
MEDSTAR/AMAA
DOUGLAS R HOOTEN
Closing Date 08/28/18 Next Closing Date 09/27/18

Account Ending [redacted]

New Balance	**$10,061.91**
Please Pay By	**09/12/18‡**

‡Payment is due upon receipt. We suggest you pay by the Please Pay By date. You may have to pay a late fee if your payment is not received by the Next Closing Date.

See page 2 for important information about your account.

Membership Rewards® Points
Available and Pending as of 07/31/18
877,425
For more details about Rewards, please visit **americanexpress.com/rewardsinfo**

Account Summary

Previous Balance	$19,058.67
Payments/Credits	-$19,058.67
New Charges	+$10,061.91
Fees	+$0.00
New Balance	**$10,061.91**

Days in Billing Period: 32

Customer Care

Pay by Computer
open.com/pbc

Customer Care
1-800-492-3344

Pay by Phone
1-800-472-9297

See Page 2 for additional information.

Douglas R Hooten 9/4/18

↓ Please fold on the perforation below, detach and return with your payment ↓

Payment Coupon
Do not staple or use paper clips

Pay by Computer
open.com/pbc

Pay by Phone
1-800-472-9297

Account Ending [redacted]

Enter 15 digit account # on all payments.
Make check payable to American Express.

DOUGLAS R HOOTEN
MEDSTAR/AMAA
2900 ALTA MERE DR
FORT WORTH TX 76116-4115

Please Pay By
09/12/18

Amount Due
$10,061.91

☐ Check here if your address or phone number has changed. Note changes on reverse side.

AMERICAN EXPRESS
P.O. BOX 650448
DALLAS TX 75265-0448

0000349991382953784 001006191001006191 24 4

Payments and Credits

Summary

	Total
Payments	-$19,058.67
Credits	$0.00
Total Payments and Credits	**-$19,058.67**

Detail

*Indicates posting date

Payments			Amount
08/09/18*	DOUGLAS R HOOTEN	CHECKLESS PYMT RECEIVED-THANK YOU	-$19,058.67

New Charges

Summary

	Total
DOUGLAS R HOOTEN	$9,900.64
JOAN E JORDAN	$161.27
Total New Charges	**$10,061.91**

Detail

DOUGLAS R HOOTEN
Card Ending

Date	Description	City	State	Note	Amount
07/27/18	NTTA CUST SVC TOLLS ONLINE TOLL FEES	PLANO	TX	Tolls	$72.00
07/30/18	JIMMY JOHNS - 1911 - MOTO 000000001 8177170434 EMT Skills lunch	FORT WORTH	TX	PO 17372	$143.79
07/31/18	SLADEK CONFERENCE SERVICE 899000002503 MISC PERSONAL SERVICE 2018 TX EMS Conf. registration for 3 ppl	HUTTO	TX	PO 17394, 17395, 17396	$1,225.00
07/31/18	JIMMY JOHNS - 1911 - MOTO 000000001 8177170434 EMT Skills lunch	FORT WORTH	TX	PO 17372	$22.17
07/31/18	CONCUR TECHNOLOGIE 542929806820874 5888954815 Travel website dues	BELLEVUE	WA	690900-1000	$150.00
08/01/18	CAAS 000000001 8476576828 Accredited vehicle stickers for Ambulances	GLENVIEW	IL	PO 17390	$106.00
08/01/18	TXST ALERRT M.Potts to attend ALERRT EDUCATIONAL 2018 Conf. at Gaylord	SAN MARCOS	TX	PO 17389	$250.00
08/01/18	FULLBARS CELL PHONE AND C 00-080311605 ELECTRONICS REPAIR Fix cells phones: LCD screens, charging ports	FORT WORTH	TX	PO 17391	$423.00
08/03/18	AMERICAN AIRLINES 45105572 AMERICAN AIRLINES Ticket Number: 0010629671135 Passenger Name: HOOTEN/DOUGLAS Document Type: CLUB MEMBERSHIP FEE	DALLAS Date of Departure: 08/03	TX	690900-1000	$475.00
08/04/18	WEBSITEHOSTINGBILLCOM WEBSITEHOSTINGB 4059488300	OKLAHOMA CITY	OK	680540-7000	$69.00
08/08/18	AMZN MKTP US BOOK STORES Nylon laundry bag w/Strap - for dry cleaning of Rodeo Shirts	AMZN.COM/BILL	WA	PO 17507	$39.37 3
08/10/18	MARRIOTT SUGAR LAND TWNSQ Arrival Date 08/08/18 Departure Date 08/09/18 00000000	SUGAR LAND	TX	690330-5000 Hotel stay for Ken Simpson - Safe Driving award	$137.58

Continued on reverse

Detail Continued

Date	Description	City	State	Note	Amount
08/10/18	BUFFALO WEST 021770021435755 8177322370 Qtrly IT Team luncheon	FORT WORTH	TX	PO 17568	$127.17
08/15/18	SHRM*SHRMSTORE100172238 SHRM 100172238 76116 SHRM*SHRMSTORE100172238 STORE.SHRM.ORG 18004445006 TX & Fed labor law poster set w/1-yr update service - English & Spanish versions	ALEXANDRIA	VA	PO 17631	$203.12
08/15/18	AMERICAN AMBULANCE ASSOC 0151 703-610-9000 2018 Annual Conf. Sponsorship	MCLEAN	VA	PO 17713	$5,000.00
08/16/18	OFFICE DEPOT #216 000000216 8004633768 Binders for BOD budget books MAILER,POLY,BUBBLE,#7,6PK	FT WORTH	TX	PO 17714	$44.36
08/16/18	PANERA BREAD #601542 6015 6015421534365904076132 Skill testing for EMT class FOOD/BEVERAGE	FORT WORTH	TX	PO 17749	$245.66
08/17/18	OFFICE DEPOT #216 000000216 Binders for BOD budget books 8004633768 BINDER,INP,VW,DR,1",DARK RED	FT WORTH	TX	PO 17714	$77.81
08/20/18	FULLBARS CELL PHONE AND C 00-080311605 ELECTRONICS REPAIR Fix LCD screen and charging port	FORT WORTH	TX	PO 17712	$184.00
08/21/18	PANERA BREAD #601542 6015 7811971 76132 Snacks for BOD budget review meeting FOOD/BEVERAGE	FORT WORTH	TX	PO 17715	$118.98
08/24/18	AMZN MKTP US BOOK STORES Brush wall plates for ambulances	AMZN.COM/BILL	WA	PO 17908	$44.23
08/27/18	FROSCH/GANT TRAVEL MANAGE AMERICAN AIRLINES From: DALLAS/FORT WORTH To: NASHVILLE, DALLAS/FORT WORTH Carrier: AA, AA Class: N, S Ticket Number: 00171923729600 Passenger Name: MATHEWS/EVAN R Document Type: PASSENGER TICKET Date of Departure: 10/30	BLOOMINGTON	IN	690330-2500 Attending EMS World EXPO in Nashville, TN	$262.40
08/27/18	FROSCH/GANT TRAVEL MANAGE TRAVEL AGENCY SERVICE Ticket Number: 89007470189072 Passenger Name: MATHEWS/EVAN R Document Type: TRAVEL AGENCY FEE	BLOOMINGTON	IN	690330-2500 Travel fee	$5.00
08/27/18	NACCME EMS World EXPO 6093711137 Registration of Evan Mathews	6093711137	NJ	690330-2500	$475.00

JOAN E JORDAN
Card Ending

Date	Description	City	State	Note	Amount
07/28/18	PANTHEON SYSTEMS INC 8559279387	SAN FRANCISCO	CA	PO 17397	$25.00
07/31/18	TWILIO TWILIO 8778894546	SAN FRANCISCO	CA	680540-7000	$10.01
08/01/18	INDEED Recruiting for IT position INTERNET ADS	(203)564-2400	CT	650440-6000	$18.25
08/02/18	PAYFLOW/PAYPAL 0045 888-883-9770	LAVISTA	NE	680540-7000	$31.20
08/18/18	TWILIO, INC. DIRECT MKTG INTERNET	SAN FRANCISCO		680540-7000	$10.01
08/21/18	TUFF BAKERY INC 0000 650-302-7498 Hiring process breakfast	FORT WORTH	TX	PO 17727	$31.80
08/28/18	PANTHEON SYSTEMS INC 8559279387	SAN FRANCISCO	CA	680540-7000	$35.00

Continued on next page

Tab C – Operations Report

MedStar Response Time Reliability and AVG Response Time Performance

Period: Aug 2018

		Current Month							100 Response Compliance Period		
Member City	Pri	Calls	On Scene	Avg RT	Late Responses	On Time %	Extended Responses Count	%	Compliance Calculated Responses	Late Responses	On Time %
Blue Mound	1	1	1	00:04:24	0	100.0%	0	0.0%	52	3	94.2%
	2	15	15	00:06:41	0	100.0%	0	0.0%	99	6	93.9%
	3	2	2	00:07:29	0	100.0%	0	0.0%	35	2	94.3%
Total Blue Mound		18	18								
Burleson	1	67	66	00:07:01	7	89.6%	0	0.0%	67	7	89.6%
	2	146	135	00:07:27	11	92.5%	2	1.4%	146	11	92.5%
	3	66	61	00:09:31	4	93.9%	0	0.0%	66	4	93.9%
	4	166	165	00:26:43	2	98.8%	1	0.6%	166	2	98.8%
Total Burleson		445	427								
Edgecliff Village	1	3	3	00:06:30	0	100.0%	0	0.0%	50	3	94.0%
	2	8	8	00:07:06	0	100.0%	0	0.0%	95	4	95.8%
	3	7	5	00:08:16	0	100.0%	0	0.0%	41	1	97.6%
Total Edgecliff Village		18	16								
Forest Hill	1	41	40	00:07:47	4	90.2%	1	2.4%	88	6	93.2%
	2	84	76	00:08:46	7	91.7%	0	0.0%	84	7	91.7%
	3	34	31	00:11:09	3	91.2%	1	2.9%	78	6	92.3%
Total Forest Hill		159	147								
Fort Worth	1	2593	2489	00:07:46	290	88.8%	26	1.0%	2593	290	88.8%
	2	5102	4644	00:08:05	384	92.5%	32	0.6%	5102	384	92.5%
	3	2765	2565	00:09:37	174	93.7%	27	1.0%	2765	174	93.7%
	4	1020	1015	00:23:19	53	94.8%	25	2.5%	1020	53	94.8%
Total Fort Worth		11480	10713								
Haltom City	1	80	79	00:08:29	15	81.3%	1	1.3%	80	15	81.3%
	2	145	129	00:08:37	19	86.9%	1	0.7%	145	19	86.9%
	3	98	87	00:09:55	8	91.8%	1	1.0%	98	8	91.8%
	4	3	3	00:05:20	0	100.0%	0	0.0%	17	0	100.0%
Total Haltom City		326	298								
Haslet	1	11	10	00:07:13	0	100.0%	0	0.0%	77	9	88.3%
	2	14	13	00:07:18	0	100.0%	0	0.0%	66	8	87.9%
	3	11	11	00:08:35	1	90.9%	1	9.1%	94	5	94.7%

MedStar Response Time Reliability and AVG Response Time Performance

Period: Aug 2018

		Current Month							100 Response Compliance Period		
Member City	Pri	Calls	On Scene	Avg RT	Late Responses	On Time %	Extended Responses Count	%	Compliance Calculated Responses	Late Responses	On Time %
	4	11	11	00:38:11	2	81.8%	0	0.0%	84	6	92.9%
Total Haslet		**47**	**45**								
Lake Worth	1	34	34	00:07:11	3	91.2%	0	0.0%	34	3	91.2%
	2	72	67	00:06:49	7	90.3%	0	0.0%	133	8	94.0%
	3	24	23	00:10:29	2	91.7%	0	0.0%	80	3	96.3%
	4	3	3	00:10:06	0	100.0%	0	0.0%	29	2	93.1%
Total Lake Worth		**133**	**127**								
Lakeside	2	7	5	00:09:45	2	71.4%	0	0.0%	81	14	82.7%
	3	2	2	00:25:50	1	50.0%	1	50.0%	25	5	80.0%
Total Lakeside		**9**	**7**								
River Oaks	1	21	21	00:08:13	4	81.0%	0	0.0%	99	17	82.8%
	2	22	21	00:08:37	1	95.5%	0	0.0%	98	9	90.8%
	3	17	16	00:11:59	3	82.4%	0	0.0%	32	3	90.6%
Total River Oaks		**60**	**58**								
Saginaw	1	33	33	00:08:28	3	90.9%	1	3.0%	33	3	90.9%
	2	66	57	00:08:08	4	93.9%	2	3.0%	66	4	93.9%
	3	28	23	00:08:21	0	100.0%	0	0.0%	66	2	97.0%
Total Saginaw		**127**	**113**								
Sansom Park	1	18	18	00:05:58	1	94.4%	0	0.0%	94	7	92.6%
	2	30	30	00:07:11	1	96.7%	0	0.0%	100	5	95.0%
	3	21	20	00:11:24	4	81.0%	0	0.0%	36	6	83.3%
	4	2	2	00:04:19	0	100.0%	0	0.0%	14	1	92.9%
Total Sansom Park		**71**	**70**								
Westworth Village	1	12	12	00:07:57	2	83.3%	0	0.0%	96	9	90.6%
	2	28	27	00:08:36	0	100.0%	0	0.0%	106	9	91.5%
	3	15	14	00:11:45	3	80.0%	0	0.0%	72	6	91.7%
Total Westworth Village		**55**	**53**								
White Settlement	1	52	52	00:06:39	4	92.3%	0	0.0%	52	4	92.3%
	2	114	109	00:06:29	2	98.2%	0	0.0%	114	2	98.2%
	3	52	48	00:07:41	0	100.0%	0	0.0%	113	1	99.1%

MedStar Response Time Reliability and AVG Response Time Performance

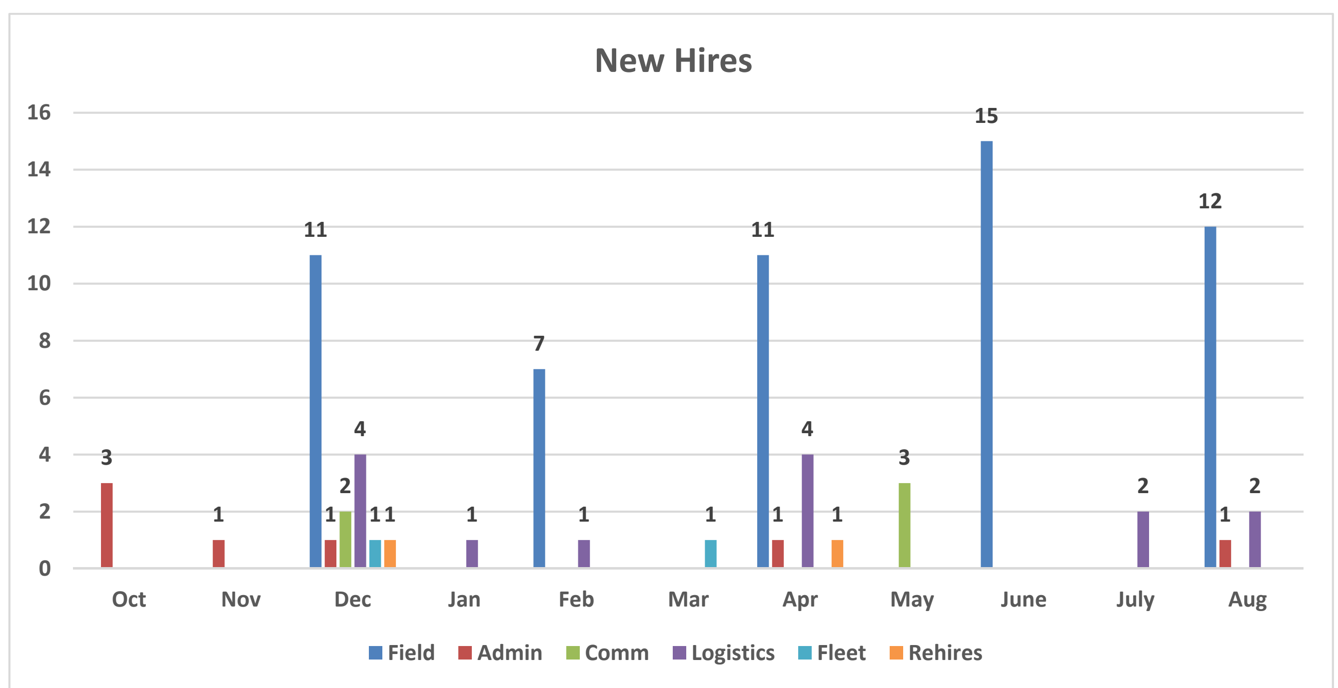
Period: Aug 2018

		Current Month							100 Response Compliance Period		
Member City	Pri	Calls	On Scene	Avg RT	Late Responses	On Time %	Extended Responses Count	%	Compliance Calculated Responses	Late Responses	On Time %
	4	8	7	00:05:28	0	100.0%	0	0.0%	68	3	95.6%
Total White Settlement		226	216								
System Wide	1	2966	2858	00:07:44	333	88.8%	29	1.0%	3455	390	88.7%
	2	5853	5336	00:08:02	438	92.5%	37	0.6%	6445	491	92.4%
	3	3142	2908	00:09:39	203	93.5%	31	1.0%	3606	226	93.7%
	4	1213	1206	00:23:43	57	95.3%	26	2.1%	1425	69	95.2%
Total System Wide		13174	12308								

Tab D – Human Resources

Recruiting & Staffing Reports

Fiscal Year 2017-2018



Separations

86

13

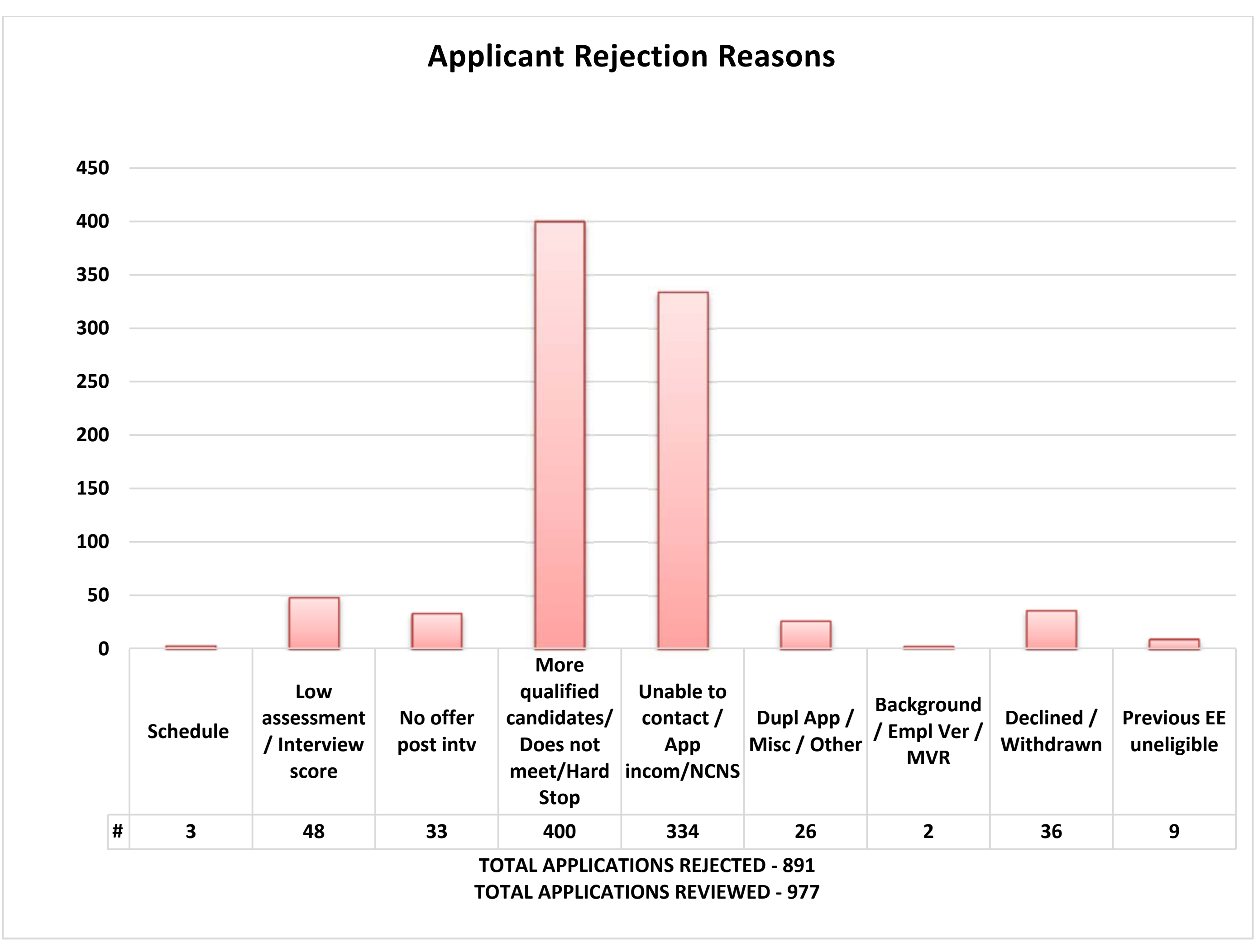
15%

Hires

Terms

Separation Reasons

2- Dissatisfied with Job
1- Attendance
2- Job Abandonment
1- Falsified Application
1- Krum FD
1- Conduct – Outside of Protocol
1- Career Change
1- Transportation
1- Return to Previous Employer
1- Schedule
1- Unable to accommodate ADA


Applicant Rejection Reasons
450
400
350
300
250
200
150
100
50
0
Schedule
Low assessment / Interview score
No offer post intv
More qualified candidates/ Does not meet/Hard Stop
Unable to contact / App incom/NCNS
Dupl App / Misc / Other
Background / Empl Ver / MVR
Declined / Withdrawn
Previous EE uneligible
#
3
48
33
400
334
26
2
36
9
TOTAL APPLICATIONS REJECTED - 891
TOTAL APPLICATIONS REVIEWED - 977

FMLA Leave of Absence (FMLA Detailed Report)
Fiscal Year 10/1/17 - 9/30/18
Percentages by Department/Conditions

Conditions	
Adoption	1
Asthma	1
Back	3
Cardiology	1
Chronic Illness	5
Circulatory Condition	1
Diverticulitis	1
FMLA - Child	6
FMLA - Parent	15
FMLA - Spouse	4
Gynocological	1
Headaches	1
Hip	1
Kidney Stones	1
Migraines	2
Pregnancy	6
Psychological	6
Rheumatoid Arthritis	1
Grand Total	**57**

Percentages by Department

	#of EEs	# on FMLA	FTE	% by FMLA	% by Dep
Advanced	124	13	2.95%	22.81%	10.48%
Basics	137	16	3.64%	28.07%	11.68%
Business Intelligence - Deployment, QI, Scheduler	4	1	0.23%	1.75%	25.00%
Business Office	29	11	2.50%	19.30%	37.93%
Communications	35	3	0.68%	5.26%	8.57%
Controller - Payroll, A/P, Purchasing	4	2	0.45%	3.51%	50.00%
Mobile Integrated Health	16	4	0.91%	7.02%	25.00%
Office of the Medical Director	8	2	0.45%	3.51%	25.00%
Support Services - Facilities, Fleet, S.E., Logistics, S.E., Logistics	38	5	1.14%	8.77%	13.16%
Grand Totals	**395**	**57**			

Total # of Full Time Employees - April 2018	**440**
% of Workforce using FMLA	**12.95%**

TYPE OF LEAVES UNDER FMLA	# of Ees	% on Leave
Intermittent Leave	48	84.21%
Block of Leave	9	15.79%
Total	**57**	100.00%

LIGHT DUTY for Fiscal Year 2017-2018													
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Goal
Hours/Mo	151:32	47:55	329:08	350:49	340:49	179:30	429:02	821:33	564:16	465:01	298:38	0:00	
FY 2017	151:32	199:27	528:35	879:24	1220:13	1399:43	1828:45	2650:18	3214:34	3679:35	3978:13	3978:13	3846:39
FY 2016	101:47	190:15	510:11	950:15	1153:25	1459:51	2019:41	2284:10	2539:01	3208:28	3778:03	4274:04	

GOAL: Reduce number of lost hours due to job-related injuries by 10%

Worker's Comp LOA for Fiscal Year 2017-2018													
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Goal
Hours/Mo	0:00	12:00	24:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	
FY 2017	0:00	12:00	36:00	36:00	36:00	36:00	36:00	36:00	36:00	36:00	36:00	36:00	1125:51
FY 2016	192:00	233:45	358:22	401:38	490:08	510:29	678:46	917:57	1097:57	1145:57	1181:57	1250:57	

GOAL: Reduce number of lost hours due to job-related injuries by 10%

FMLA LOA for Fiscal Year 2017-2018													
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	AVG
Hours/Mo	1536:38	1470:57	1455:45	1617:29	1236:40	1836:43	1967:18	2310:11	1096:09	1144:54	816:09	0:00	1567:16
FY 2017	1536:38	3007:35	4463:20	6080:49	7317:29	9154:12	11121:30	13431:41	14527:50	15672:44	16488:53	16488:53	
FY 2016	954:44	1667:45	2150:28	2709:24	3277:17	3922:35	4392:34	4937:28	5492:41	6282:42	7564:55	8673:49	722:49

Military Leave for Fiscal Year 2017-2018*													
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	AVG
Hours/Mo	85:58	110:07	84:00	108:00	132:00	147:00	72:00	120:00	216:00	132:00	144:00	0:00	120:42
FY 2017	85:58	196:05	280:05	388:05	520:05	667:05	739:05	859:05	1075:05	1207:05	1351:05	1351:05	

*Unfilled shifts only

Total Leave Hours													
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	AVG
Hours/Mo	1774:08	1640:59	1892:53	2076:18	1709:29	2163:13	2468:20	3251:44	1876:25	1741:55	1258:47	0:00	2059:32
FY 2017	1774:08	3415:07	5308:00	7384:18	9093:47	11257:00	13725:20	16977:04	18853:29	20595:24	21854:11	21854:11	

	Goals and Projection					August		
	Light Duty	Worker's Comp	FMLA	Military	Total	Actual Scheduled shifts	# of 12 hour shifts August	% of Shifts for LOA
YTD	3978:13	36:00	16488:53	1351:05	21854:11	23579	2259	9.58%
Projection	***4339:52***	***216:00***	***17987:52***	***1473:54***	24017:39			
Goal-Compare	3846:39	1125:51	8673:49	1757:24	15403:43			

MedStar Mobile Health Care Separation Statistics - August 2018

	Current Month			Year to Date			Compared to Aug '17		Headcount
	Vol	Invol	Total	Vol	Invol	Total	17-Aug	%inc/dec	August
Full Time Separations	4	5	9	41	18	59	59	0.0%	440
Part Time Separations	1	1	2	19	2	21	15	40.0%	71
Total Separations	5	6	11	60	20	80	74	8.1%	511

	Full Time	Part Time	Total	Full Time	Part Time	Total
Total Turnover %	2.05%	2.82%	2.15%	13.41%	29.58%	15.66%

Separations by Department

Full time

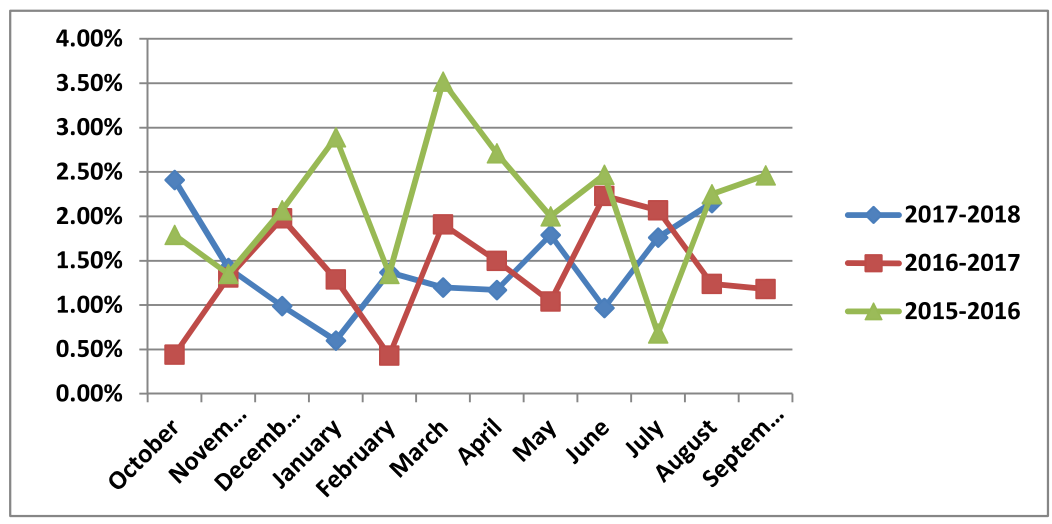
	Current Month			Year to Date			Headcount
	Vol	Invol	Total	Vol	Invol	Total	18-Aug
Administration							1
Advanced	3	2	5	13	5	18	124
Basics	0	1	1	11	5	16	137
Business Intelligence - Deployment, QI, Scheduler							4
Business Office				1	3	4	29
Communications	0	1	1	2	2	4	35
Compliance							1
Controller - Payroll, Purchasing, A/P							4
Customer Integration							1
Executives							6
Field Manager/Supervisors - Operations							10
Human Resources				1	0	1	6
Information Technology	0	1	1	1	1	2	4
Medical Records							2
Mobile Integrated Health Department				1	0	1	16
MTAC - MedStar Training Academy							12
Office of the Medical Director				2	0	2	8
Risk and Safety							2
Support Services - Facilities, Fleet, S.E., Logistics	1	0	1	9	2	11	38
Total	4	5	9	41	18	59	440

Part Time

	Current Month			Year to Date			Headcount
	Vol	Invol	Total	Vol	Invol	Total	18-Aug
Advanced	0	1	1	9	1	10	31
Basics	1	0	1	6	1	7	30
Business Intelligence - Deployment, QI, Scheduler							
Business Office							
Communications				2	0	2	3
Compliance							
Controller - Payroll, Purchasing, A/P							
Customer Integration							
Deployment							
Directors							
Field Manager/Supervisors							
Fleet							
Human Resources				1	0	1	1
Information Technology							
Medical Records							
Mobile Integrated Health Department							2
MTAC - MedStar Training Academy							
Office of the Medical Director							
Risk and Safety							
Support Services - Facilities, Fleet, S.E., Logistics				1	0	1	4
Total	1	1	2	19	2	21	71

MedStar Mobile Healthcare Turnover
Fiscal Year 2017-2018

	Monthly Turnover By Fiscal Year		
	2017-2018	2016-2017	2015-2016
October	2.41%	0.44%	1.79%
November	1.42%	1.31%	1.35%
December	0.99%	1.98%	2.07%
January	0.60%	1.29%	2.89%
February	1.37%	0.43%	1.35%
March	1.20%	1.91%	3.52%
April	1.17%	1.50%	2.71%
May	1.79%	1.04%	2.00%
June	0.97%	2.23%	2.47%
July	1.76%	2.07%	0.68%
August	2.15%	1.24%	2.25%
September		1.18%	2.46%
Projected	17.269%	16.620%	25.540%



Tab E – FRAB

Tab F – OMD

Medical Director's Report

Discussion

- Mutual aid agreements
- MEDS Committee

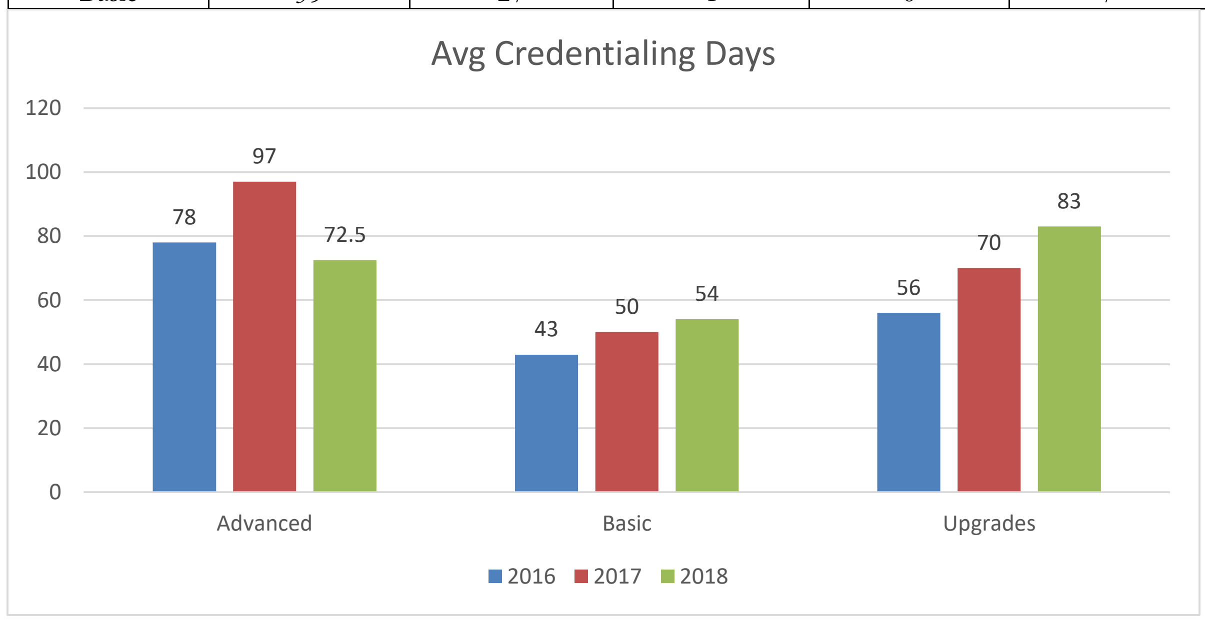
Education and Training

- Education
  - OMD Quarterly CE started Sept 17
    - EtCO2 in Sepsis and other Metabolic Emergencies
    - Patient Assessment
    - OB Emergencies

- Training
  - Updated FTO manual and new trainee progression process currently in use.

Credentialing

2018	Candidates	Credentialed	Pulled	Separated	In-training
Advanced	14	6	1	0	7
Adv Upgrade	13	8	2	1	2
Basic	35	27	1	0	7



QA

Case Acuity

Acuity	June 2018	July 2018	August 2018
High	6 *(11.1%)*	5 *(8.8%)*	5 *(9.6%)*
Moderate	18 *(33.3%)*	22 *(38.6%)*	15 *(28.8%)*
Low	27 *(50.0%)*	28 *(49.1%)*	21 *(40.4%)*
Non QA/QI	3 *(5.6%)*	2 *(3.5%)*	11 *(21.2%)*
Grand Total	54 *(100.0%)*	57 *(100.0%)*	52 *(100.0%)*

Case Disposition

Disposition	June 2018	July 2018	August 2018
Clinically Appropriate	3 *(5.6%)*		
Needs Improvement	13 *(24.1%)*	5 *(8.8%)*	10 *(19.2%)*
Clinically Inappropria..	4 *(7.4%)*		
Forwarded	10 *(18.5%)*	25 *(43.9%)*	16 *(30.8%)*
No Fault	13 *(24.1%)*	9 *(15.8%)*	14 *(26.9%)*
Pending	11 *(20.4%)*	18 *(31.6%)*	12 *(23.1%)*
Grand Total	54 *(100.0%)*	57 *(100.0%)*	52 *(100.0%)*

Case Metrics (Time to MD Review, Time to Closure)

Acuity	Avg. Created-Review Days	Avg. Review-Closure Days	Avg. Created-Closure Days
High	1.400 days	1.636 days	2.909 days
Low	4.600 days	0.000 days	4.348 days
Moderate	5.038 days	2.435 days	6.087 days
Non QA/QI	0.667 days	0.000 days	3.167 days
Grand To..	4.064 days	0.661 days	4.438 days

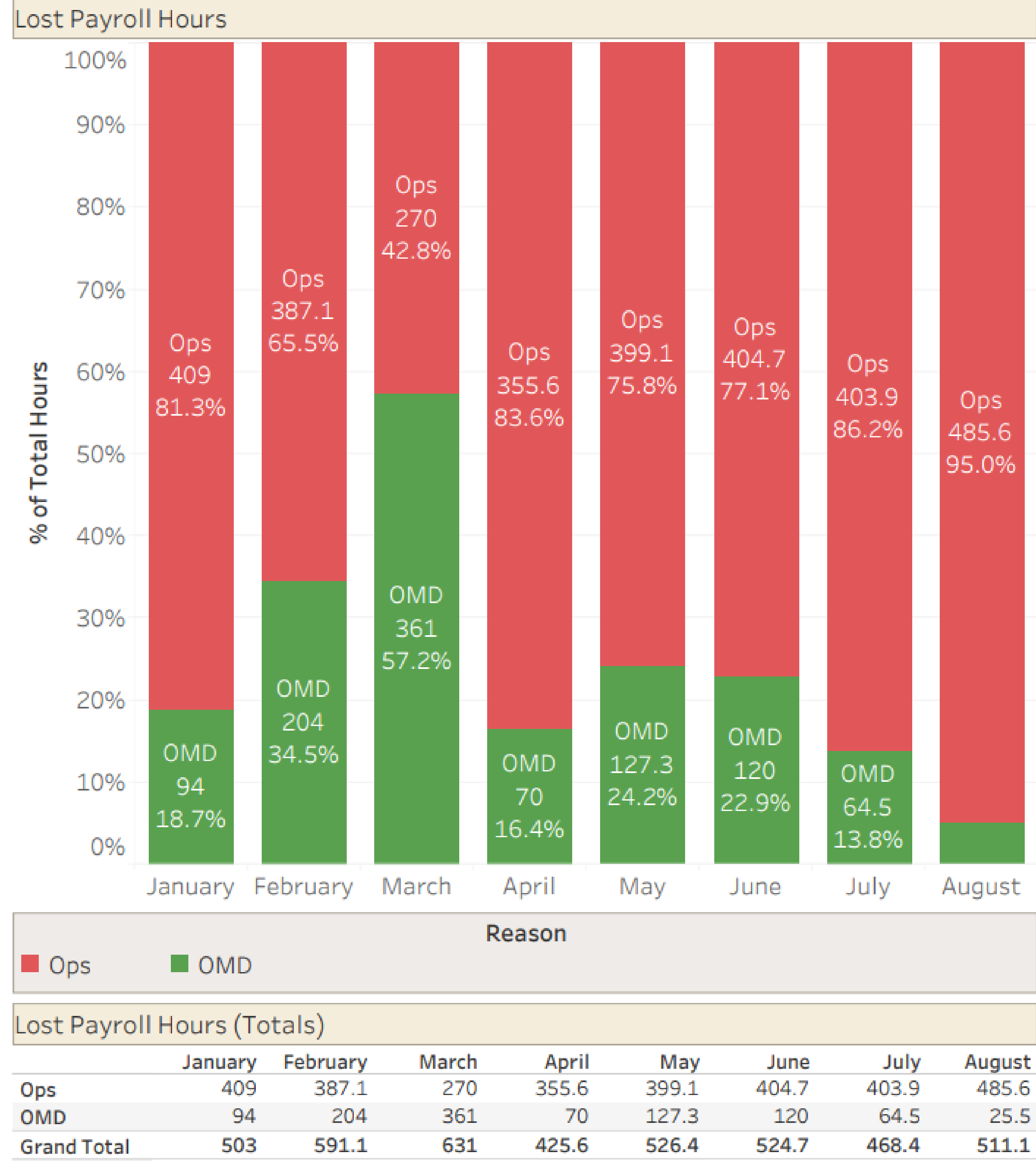
Case Origin

Self Report 52 31.9%
Airway QA 22 13.5%
Facility 22 13.5%
OMD 20 12.3%
FRO 7
Customer Relations Log 25 15.3%
Ops
CPR QA

System Clinical Issues

	June..	July ..	Aug..
Equipment Issues	2	9	5
Inadequately Treated U..		3	1
Unrecognized Failed Air..		2	2
Untreated Lethal Arrhyth..	2	1	

- Clinical Restriction Impact on Lost Unit Hours
    - Average is 24.09%



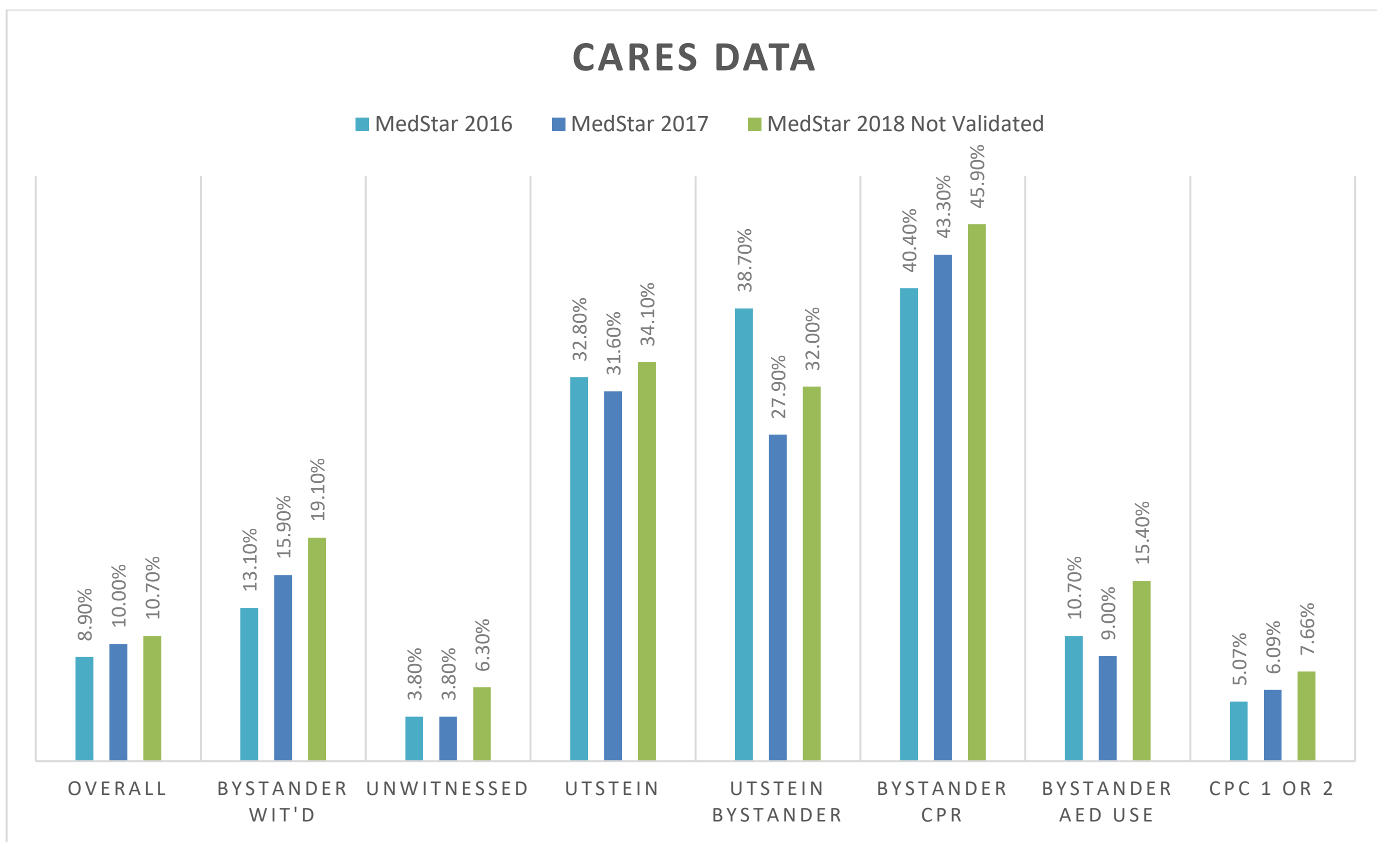
Lost Payroll Hours (Totals)

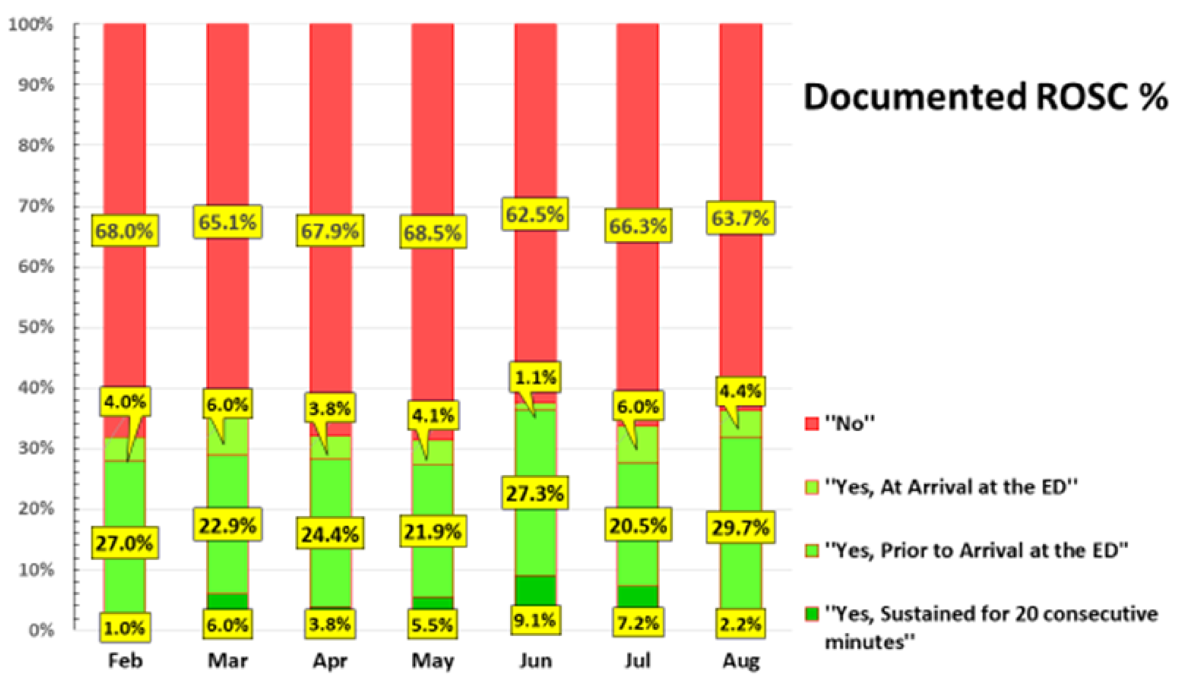
	January	February	March	April	May	June	July	August
Ops	409	387.1	270	355.6	399.1	404.7	403.9	485.6
OMD	94	204	361	70	127.3	120	64.5	25.5
Grand Total	503	591.1	631	425.6	526.4	524.7	468.4	511.1

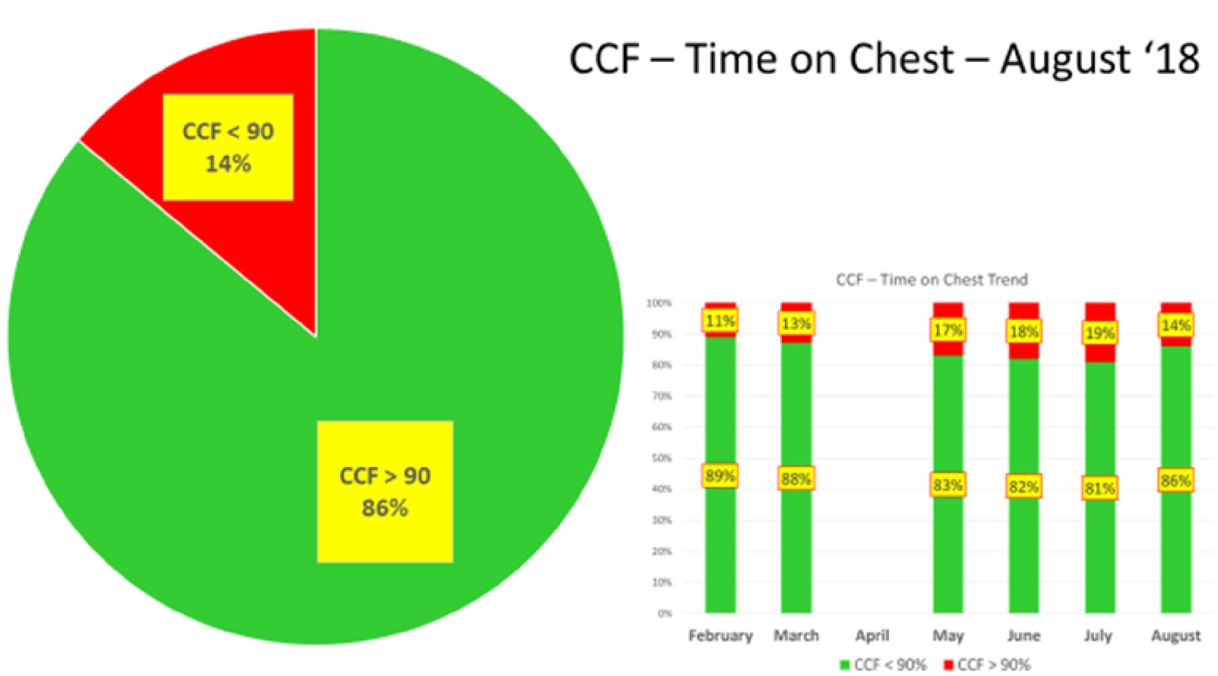
<u>System Diagnostics</u>

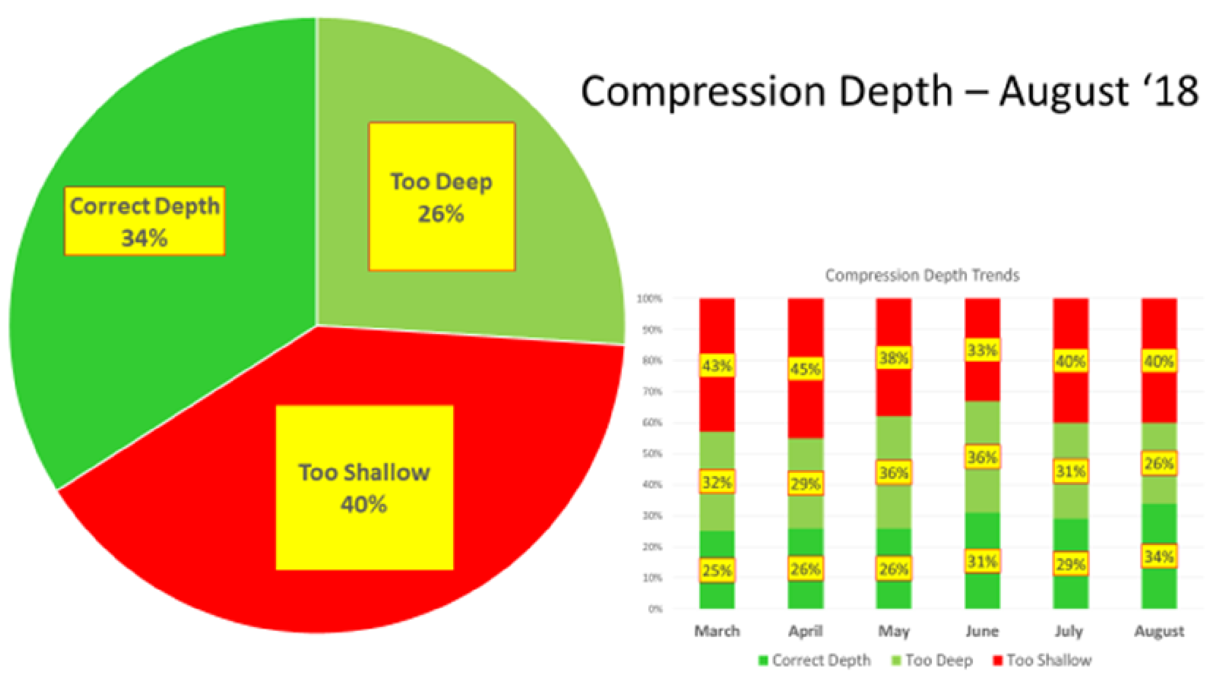
- **Clinical Bundles Report**
  - Moving forward with building clinical bundles for System dash board in-house.

- **Resuscitation**

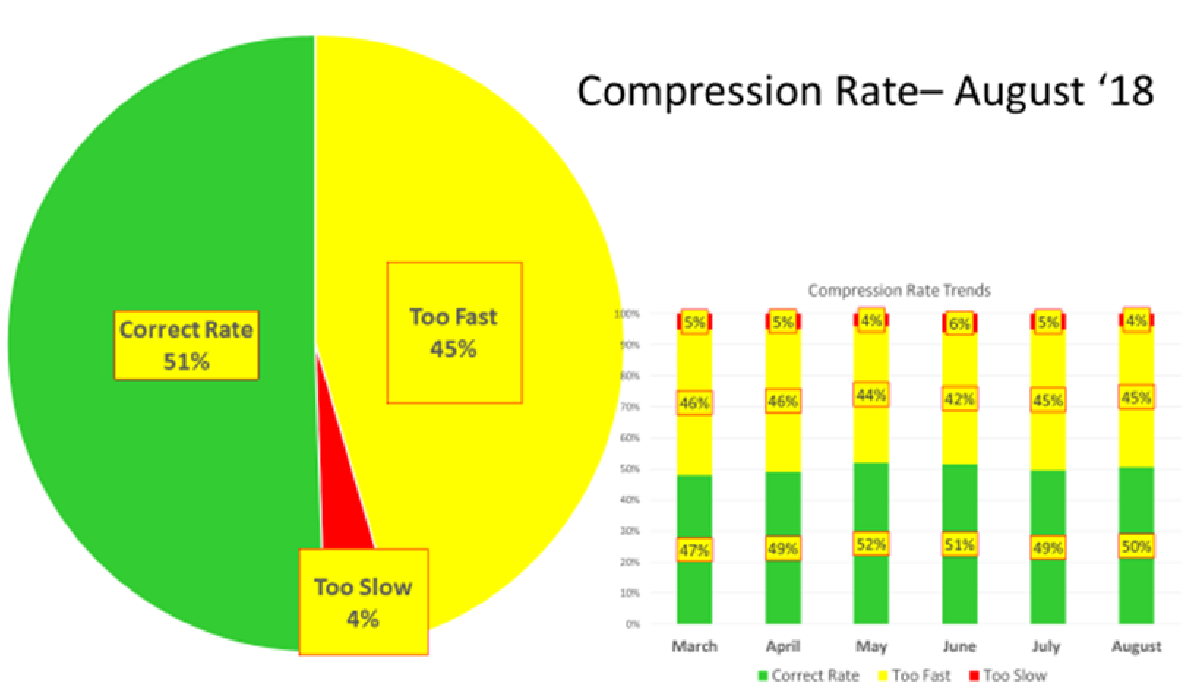



Documented ROSC %
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
68.0%
65.1%
67.9%
68.5%
62.5%
66.3%
63.7%
4.0%
6.0%
3.8%
4.1%
1.1%
6.0%
4.4%
27.0%
22.9%
24.4%
21.9%
27.3%
20.5%
29.7%
1.0%
6.0%
3.8%
5.5%
9.1%
7.2%
2.2%
Feb
Mar
Apr
May
Jun
Jul
Aug
"No"
"Yes, At Arrival at the ED"
"Yes, Prior to Arrival at the ED"
"Yes, Sustained for 20 consecutive minutes"

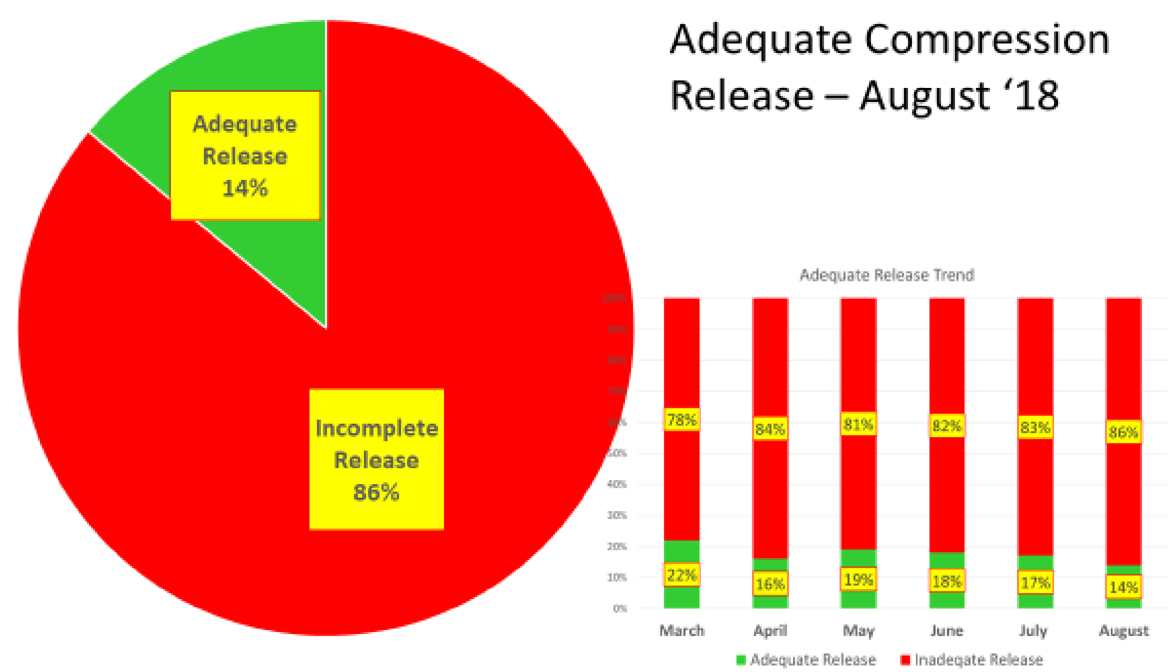

CCF – Time on Chest – August '18
CCF < 90
14%
CCF > 90
86%
CCF – Time on Chest Trend
11%
13%
17%
18%
19%
14%
89%
88%
83%
82%
81%
86%
February
March
April
May
June
July
August
CCF < 90%
CCF > 90%



Compression Depth – August '18
Correct Depth 34%
Too Deep 26%
Too Shallow 40%
Compression Depth Trends
March
April
May
June
July
August
43%
45%
38%
33%
40%
40%
32%
29%
36%
36%
31%
26%
25%
26%
26%
31%
29%
34%
Correct Depth
Too Deep
Too Shallow

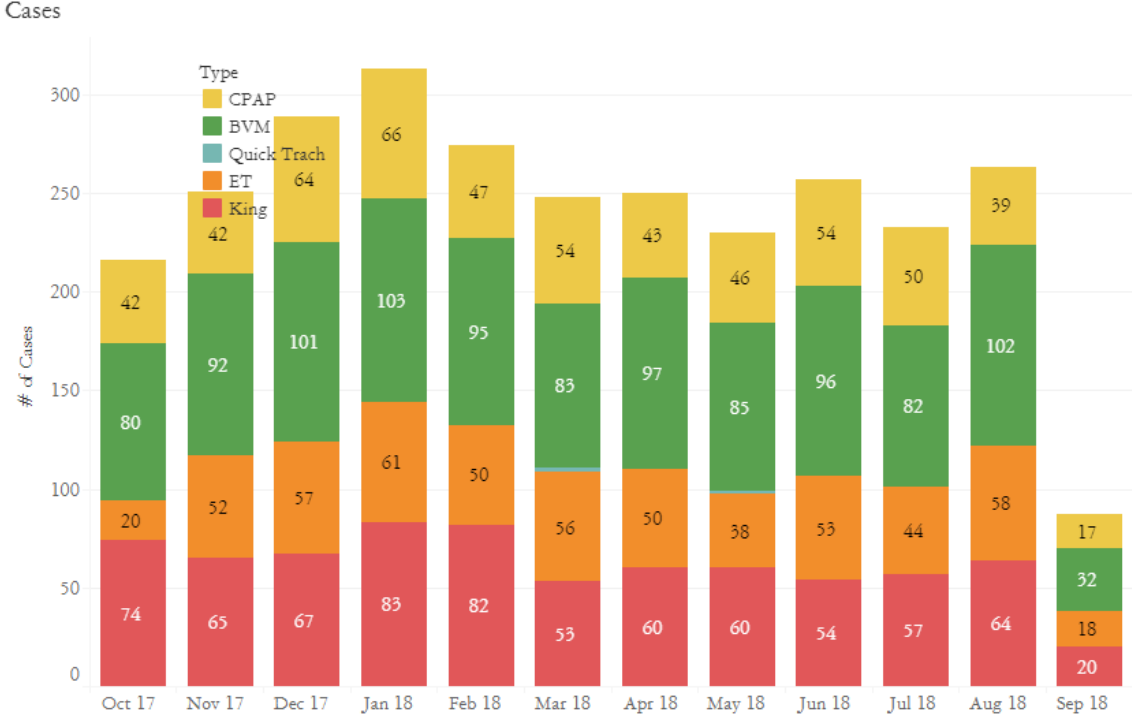


Compression Rate– August '18
Correct Rate 51%
Too Fast 45%
Too Slow 4%
Compression Rate Trends
March
April
May
June
July
August
5%
5%
4%
6%
5%
4%
46%
46%
44%
42%
45%
45%
47%
49%
52%
51%
49%
50%
Correct Rate
Too Fast
Too Slow

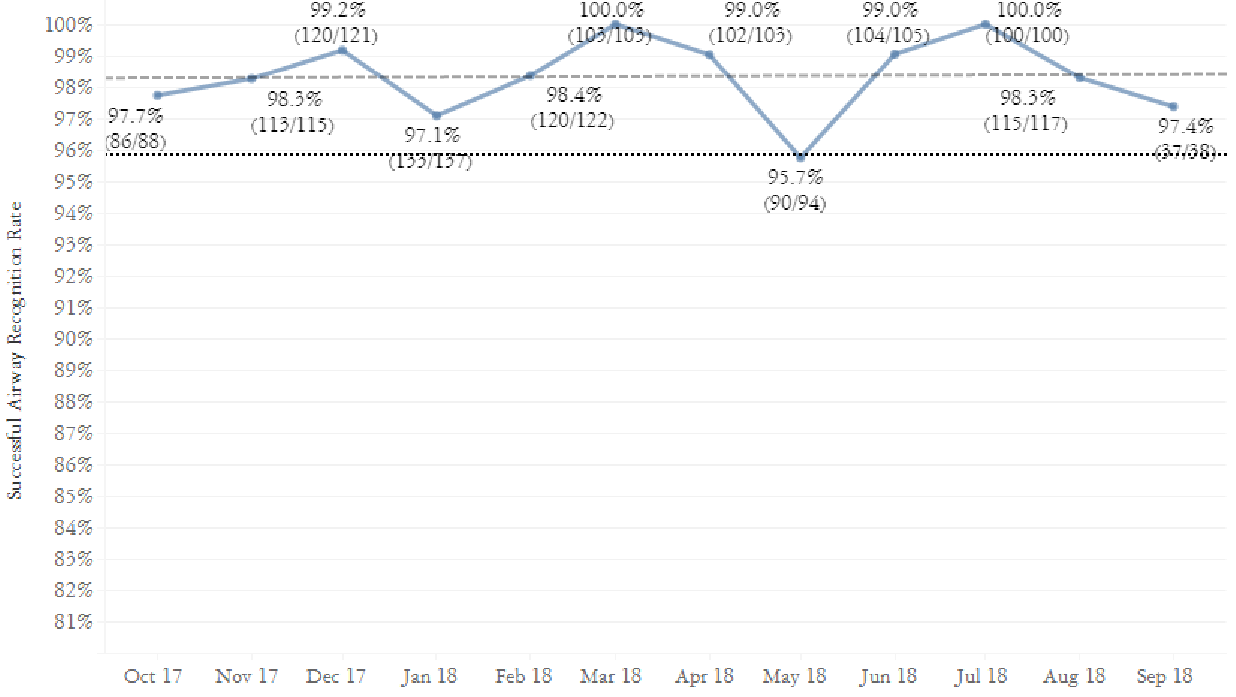


- **Airway Report**

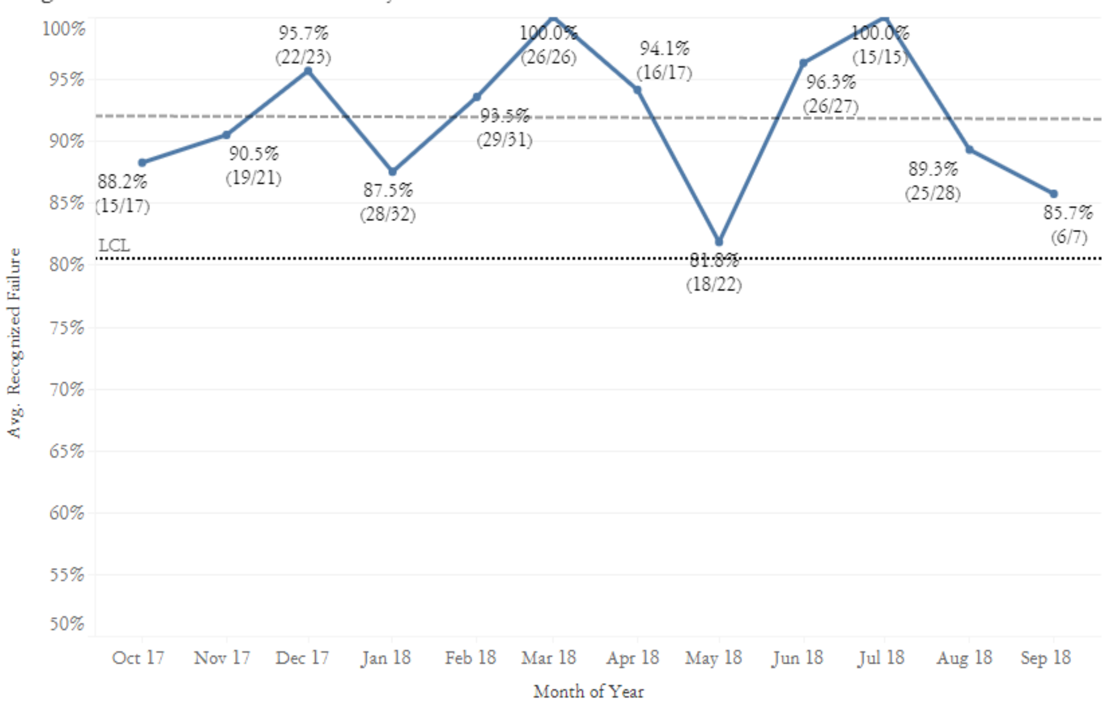
Cases

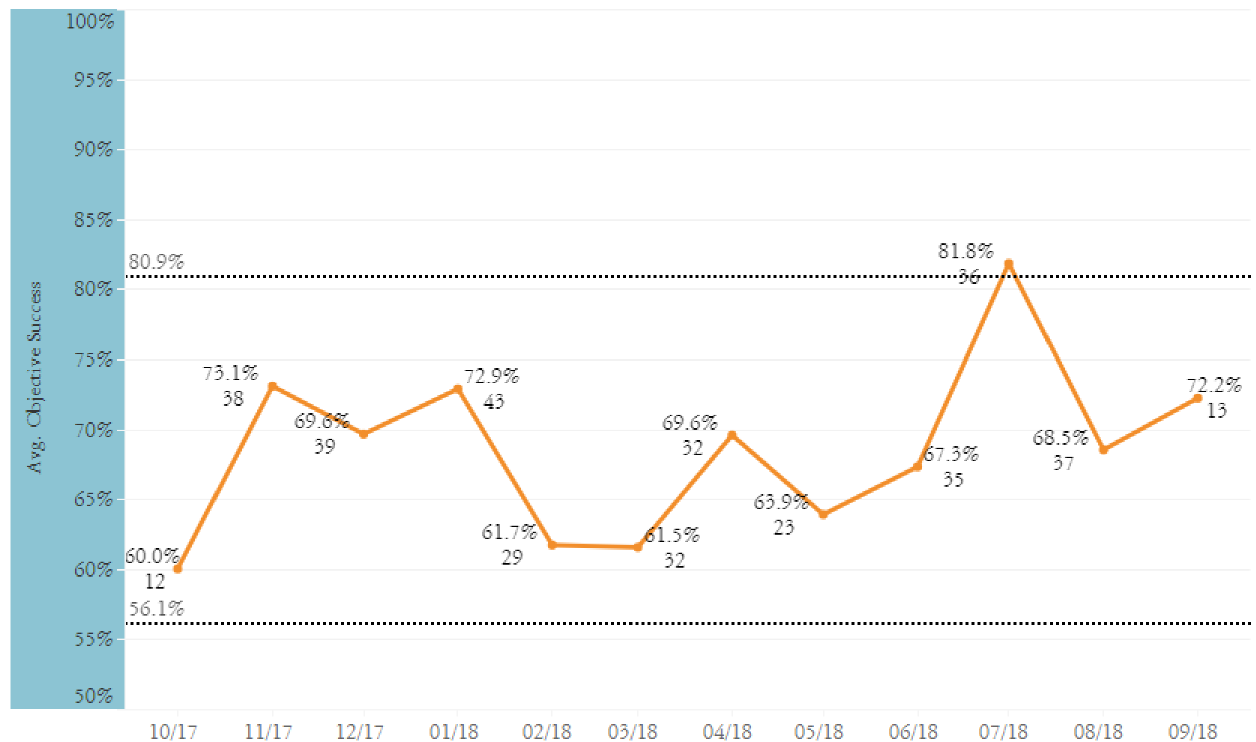


Recognition of Successful Advanced Airways



Recognition of Failed Advanced Airways




Advanced Airways Success - ET
Avg. Objective Success
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
80.9%
56.1%
60.0%
12
73.1%
38
69.6%
39
72.9%
43
61.7%
29
61.5%
32
69.6%
32
63.9%
23
67.3%
35
81.8%
36
68.5%
37
72.2%
13
10/17
11/17
12/17
01/18
02/18
03/18
04/18
05/18
06/18
07/18
08/18
09/18

Tab G – Chief Compliance Officer/Legal

September 19, 2018
Compliance Officer's Report
August 13th, 2018 to September 18th, 2018

Compliance Officer Duties

- Several investigations conducted for compliance and employee relation matters
- Submitted employee provider roster changes to the DSHS as required
- Organization wide annual HIPAA training is still underway. 53% have successfully completed the training. Deadline date is 9/30/2018.
- All DSHS forms and notices have been completed & submitted to the state for the Authority and all of our FRO partners in preparation for the interim Medical Director effective 10/1/2018
- Three narcotic anomalies processed
    1. One Ketamine vial was dropped at the Logistics counter during check-in procedure and the vial broke.
    2. One Ketamine vial cap was inadvertently removed during shift and discovered during the check-in procedure.
    3. One (1) ML of Fentanyl was in a capped syringe and was inadvertently dispensed into the shirt sleeve pocket of the Paramedic while moving a patient.

  All procedures for an anomaly were followed and no foul play was suspected.

Paralegal Duties

- 28 DFPS reports made for suspected abuse, neglect, or exploitation
- 7 Pre-trial meetings held with the District Attorney's office
- 6 Criminal court witness appearances
- 4 Law Enforcement agency interviews
- 11 Subpoena(s) for witness appearance processed and served
- Created, reviewed, and processed multiple contractual agreements with GC as needed

Chad Carr
Compliance Officer
Paralegal – Office of General Counsel
CACO, CAPO, CRC, EMT-P

Tab H – Chief Strategic Integration Officer

Helping Reduce Flu Risk in our Community

SBAR Recommendation Guidance Document

<table>
<tr><td rowspan="2">S</td><td>Describe the situation or current state as it relates to the suggested recommendation.</td></tr>
<tr><td>
Entering the 2018-2019 flu season, several community partners/stakeholders have asked if MedStar would be able to provide on-site, mobile flu vaccines.
Between January and March 2018, MedStar responded to 1,108 calls in which our crews identified a primary or secondary clinical impression of Influenza Like Illness (ILI).
Hospitals in our area experienced significant influx of patients with the flu, leading to increased hospital occupancy, and consequently, ED overcrowding and patient throughput challenges.
Using EMS to provide immunizations in Texas has a long and rich history, most notably, the award winning “Shots Across Texas” initiative for all childhood immunizations.
</td></tr>
<tr><td rowspan="2">B</td><td>Explain the background behind the situation or current state.</td></tr>
<tr><td>
MedStar has administered flu vaccines for years to MedStar employees.
The administration of Intramuscular (IM) injections is currently in the scope of practice for MAEMSA field providers.
During a meeting with Dr. Vithalani and Dwayne Howerton on August 21st, to discuss this concept, both agreed the program would be valuable and within the scope of MAEMSA field provider protocols and agreed to review a process developed by MedStar.
MedStar developed the process and all related documents (including CDC guidelines) and provided to OMD on August 23rd with follow-up communications on August 29th, and September 5th.
On September 5th, Dr. Vithalani wrote back that per EPAB, no new programs will be approved until MAEMSA and EPAB sit down to discuss the Interim period of Medical Direction.
On September 5th, MedStar asked for a timeframe for that discussion, since time was of the essence for the flu project.
On September 11th, Dr. Vithalani wrote back suggesting a formal presentation of the plan to the MAEMSA and EPAB boards
</td></tr>
<tr><td rowspan="2">A</td><td>Provide your assessment of how adopting the suggested recommendation will address unmet needs or actions necessary to achieve a desired future state.</td></tr>
<tr><td>
MedStar has received unsolicited requests for mobile flu vaccine services from:

City of Sansom Park
Tarrant County Public Health
Amerigroup
North Texas Specialty Physicians
Trinity Terrace Independent Living Center

Most currently available flu vaccine initiatives occur in physician offices, clinics or other fixed locations.
It is likely that if this service was made available, additional stakeholders/community groups would be interested in the service.
</td></tr>
</table>

R	*Provide your **recommendation(s)**.*
	- Providing flu vaccines in a mobile environment, either scheduled or on-demand, appears to be a current gap in our local healthcare delivery system. - There could be public health and healthcare system utilization benefit to using MedStar Mobile Healthcare resources to provide flu vaccines in our community in an effort to try and reduce the incidence of patients suffering from influenza like illness. - MedStar is moving forward with a flu vaccine program as outlined in the attached program documents. - Flu Vaccine Information from CDC - Flu vaccine procedure – MedStar - Frequently Asked Flu Questions 2018 - MedStar Flu Vaccine Medical Screening and Administration Record

Vaccination Administration Record (VAR)
Influenza Vaccination

Patient ID#: ______________

Personal Information

Date: ____/____/____

Last Name: ____________________________ First Name: ________________________MI: _____

Home Address: ____ Apt #: ___________

City: ___________________________ State: _____Zip Code: __________

Are you a Healthcare Worker: ☐ No ☐ Yes

Occupation: ______________________________Employer: _____________________________________

Social Security #:____-___-_________ Insurance Company:_____________________________

Medicare #:_____-___-_________ Insurance ID #:_________________________________

Home Phone: (___) ____-_______ Work Phone: (___) ____-_______ Cell Phone: (___) ____-_______

Email Address: _______________________________________

Age: _____ Date of Birth: _____/_____/_____ Gender (circle one): M F

Are you currently ill with a fever greater than 100.4 F or 38.0 C? ☐ No ☐ Yes
Last documented fever was: __________ F or C

Have you developed flu-like symptoms or cough in the past week? ☐ No ☐ Yes

Have you ever had any of the following medical conditions?
Allergic reaction to eggs ☐ No ☐ Yes
Reaction to any vaccine requiring medical care ☐ No ☐ Yes
History of Guillain-Barre Syndrome ☐ No ☐ Yes

Current Medical Status:
Pregnant or planning to become pregnant in next 4 weeks? ☐ No ☐ Yes
Are you breastfeeding? ☐ No ☐ Yes
Immunocompromised, including HIV/AIDS, chemotherapy, transplant patient, lupus, lymphoma, leukemia, platelet disorder, thrombocytopenia? ☐ No ☐ Yes
Chronic lung disease or severe breathing problems? ☐ No ☐ Yes
Severe Asthma? ☐ No ☐ Yes
Uncontrolled or fever-induced seizures, or neurological disease? ☐ No ☐ Yes
Other serious health problems or surgeries in the last six months? ☐ No ☐ Yes

Are you presently taking any medications, including over-the-counter medications?
☐ No ☐ Yes If yes, please list them:

____

____

Vaccination Administration Record (VAR)
Influenza Vaccination

Do the following apply to anyone in your household?	
Immune system problems such as HIV/AIDS, cancer, leukemia, lymphoma, organ transplant, agammaglobulinemia, low platelets	□ No □ Yes □ Don't know
Autoimmune problems like lupus that weaken your immune system	□ No □ Yes □ Don't know
Currently taking medicines like oral steroids (such as prednisone), chemotherapy, agents/radiation, or organ transplant medications	□ No □ Yes □ Don't know
Currently pregnant or plan to become pregnant in next 4 weeks	□ No □ Yes □ Don't know
Age less than 1 year old	□ No □ Yes □ Don't know
History of Guillain-Barre syndrome or serious reaction to a vaccine	□ No □ Yes □ Don't know
History of seizures or neurological disease	□ No □ Yes □ Don't know

Do you have any questions you would like to ask before you decide on vaccination?	□ No □ Yes
Are you less than 18 years of age and your parent or guardian is not with you?	□ No □ Yes
This adult is incapacitated and this screening/consent form is being completed by the parent or guardian (checked box for this question alone does not require additional screening)	□ No □ Yes

Participant Informed Consent Signature for Vaccination:

I HAVE:

- Considered my own health status as well as the health status of my household members and close physical contacts;
- Had the opportunity to discuss any medical concerns with a health care screener at the vaccination site; and
- Responded to all questions on this form and asked of me honestly and to the best of my ability.

I understand the decision to be vaccinated is voluntary and agree to proceed with the influenza vaccination.

____________________________________ ____________________
Patient (or Parent/Guardian) Signature Date

____________________________________ ____________________
Medical Screener Signature Date

Vaccination Administration Record (VAR)

Influenza Vaccination

Patient ID#: _______________

FOR HEALTH CARE PROVIDERS USE ONLY:

Comments/notes for clarification:

____

____

____

____

____

Disposition:

□ **Referred for Vaccination**

□ **Deferred due to medical contraindications**

□ **Vaccination refused**

Medical Screener's Initials: ___________ *Date:* ___________________

Vaccine Clinic Information		Vaccine Batch Information	
Name:	*MedStar Mobile Healthcare*	**Vaccine Type:**	
Contact:	*Matt Zavadsky*	**Program:**	
Phone:	*817-632-0522*	**Vaccine Lot #:**	
Email:	*MZavadsky@medstar911.org*	**Vaccine Lot Manufacturer**	
Address:	*2900 Alta Mere Drive* *Fort Worth, TX 76119*		

Vaccine administered by: ___________________________________
(Please enter first & last name, and employee number)

Arm inoculated: □ Right □ Left

Date of Vaccination: _____/_____/_____

Influenza Vaccine Administration Procedure

This protocol is only authorized for Office of the Medical Director (OMD) credentialed personnel affiliated with a Metropolitan Area EMS Authority (MAEMSA) provider agency.

Precautions

- Providers should use universal precautions

Contraindications

- Age less than 6 months
- History of Guillian-Barre
- Serious allergic reaction to a previous dose of Influenza vaccine (intranasal or intramuscular)
- Allergic reaction to egg or egg products
- Different manufacturers have additional allergy contraindications which may include gentamicin, neomycin, polymyxin, thimersol, gelatin, and latex. It is ESSENTIAL that anyone utilizing this protocol understands the packaging insert(s) and contraindications for the specific manufacturers' product(s) being used
- Any acute illness more severe than the common cold
- Oral (or equivalent) temperature elevation > 101.5º F (38.6˚ C)

Reactions

- Pain, redness and or swelling at the injection site and mild fever.

Schedule

- One dose if vaccinated for the seasonal flu in any previous year
- Children 6 months through 9 years of age:
    - Two doses separated by at least 21-28 days if they have never received a seasonal flu vaccination in the past, or if their first seasonal flu vaccine was last year and they only received one dose

Vaccine Preparation

- Proper preparation is critical for maintaining the integrity of the vaccine during transfer from the vial to the syringe. Always use aseptic technique and follow infection prevention guidelines when preparing vaccines. Aseptic technique refers to the manner of handling, preparing, and storing medications and injection equipment/supplies (e.g., syringes, needles) to prevent microbial contamination and infection.
- Prepare vaccines in a clean, designated medication area away from where the patient is being vaccinated and away from any potentially contaminated items. This is to prevent inadvertent contamination of the vial through direct or indirect contact with potentially contaminated surfaces or equipment.
- Healthcare personnel should ensure their clinic has the supplies needed to administer vaccines.
- Healthcare personnel should complete proper hand hygiene before preparing vaccines.
- Use a separate needle and syringe for each injection.
- Always check the expiration dates on the vaccine and diluent, if needed. Some syringes and needles have expiration dates, so check those, too. NEVER use expired vaccine, diluent, or equipment.
- Prepare vaccines only when you are ready to administer them.
- Only administer vaccines you have prepared. This is a medication administration best practice standard. If vaccine is drawn up by one person but administered by another, the person administering the vaccine cannot be sure what is in the syringe and whether it is safe.

Site of Administration

- Intramuscular into the anterolateral aspect of the upper thigh for young children or in the deltoid for older children and adults.

Cleansing Agent

- Alcohol pad or equivalent

Procedure

- All vaccinees to receive appropriate CDC Vaccination Information Statement (VIS)
- All vaccinees to complete the top section of the Vaccine Administration Record (VAR)
- Vaccinator to review completed VAR
    - VAR serves as written consent for the vaccination
    - If a potential vaccinees answers “yes” to any of the questions, the potential vaccinees should not receive the vaccination until cleared by a physician
- The appropriate dose should be verified and prepared
- The injection site (L or R deltoid or L or R anterolateral aspect of thigh) should be identified and cleansed with alcohol pad
- A 21-25 gauge needle 1-1.5 inches long should be used for adults
    - In patients less than 60kg, a 5/8 to ¾ inch needle is preferred
- The needle should be inserted at a 90 degree angle into the appropriate muscle
- The appropriate dose of vaccine should be delivered in the muscle in a quick, steady manner
- The needle and syringe should then be removed and disposed of in a sharps container
- Apply bandage to site of injection as needed

Seasonal Influenza Vaccine Dosage & Administration

General Information:
Proper vaccine administration is critical to ensure that vaccination is safe and effective. CDC recommends that all health care personnel who administer vaccines receive comprehensive, competency-based training on vaccine administration policies and procedures BEFORE administering vaccines. Comprehensive, skills-based training should be integrated into existing staff education programs such as new staff orientation and annual education requirements. A free vaccine administration e-Learn is available that offers continuing education for health care personnel, including CME, CNE, CEU, CPE, CPH, and CHES.

Prepare the Vaccine(s)

Proper preparation is critical for maintaining the integrity of the vaccine during transfer from the vial to the syringe. Always use aseptic technique and follow infection prevention guidelines when preparing vaccines. Aseptic technique refers to the manner of handling, preparing, and storing medications and injection equipment/supplies (e.g., syringes, needles) to prevent microbial contamination and infection.

1. Prepare vaccines in a clean, designated medication area away from where the patient is being vaccinated and away from any potentially contaminated items. This is to prevent inadvertent contamination of the vial through direct or indirect contact with potentially contaminated surfaces or equipment.
2. Health care personnel should ensure their clinic has the supplies needed to administer vaccines.
3. Health care personnel should complete proper hand hygiene before preparing vaccines.
4. Use a separate needle and syringe for each injection.
5. Always check the expiration dates on the vaccine and diluent, if needed. Some syringes and needles have expiration dates, so check those, too. NEVER use expired vaccine, diluent, or equipment.
6. Prepare vaccines only when you are ready to administer them.
7. Only administer vaccines you have prepared. This is a medication administration best practice standard. If vaccine is drawn up by one person but administered by another, the person administering the vaccine cannot be sure what is in the syringe and whether it is safe.

Administer the Vaccine(s)

Each vaccine has a recommended administration route and site. This information is included in the manufacturer's package insert for each vaccine. Deviation from the recommended route may reduce vaccine efficacy or increase local adverse reactions.

Health care personnel should always perform hand hygiene before administering vaccines by any route. Vaccine administration routes include:

- Oral route: administered by mouth
- Subcutaneous route: injected into the area just beneath the skin into the fatty, connective tissue
- Intramuscular route: injected into muscle tissue
- Intradermal route: injected into layers of the skin
- Intranasal route: administered into the nose

Flu Vaccine Questions & Answers from the CCDC

Can I pre-fill syringes for a flu shot clinic? If so, how long before the clinic can I pre-fill the syringes?
CDC recommends only preparing and drawing up vaccines just prior to administration. General-use syringes are designed for immediate administration—not for storage. Contamination and microorganism growth can occur in syringes with predrawn vaccine that does not contain a preservative. In addition, vaccine components may interact with polymers in a plastic syringe over time, potentially reducing vaccine potency.

As an alternative to predrawing vaccines, CDC recommends using manufacturer-filled syringes for large immunization clinics.

However, if vaccine must be predrawn:

- Set up a separate administration station for each vaccine type to prevent medication errors.
- Do not draw up vaccines before arriving at the clinic site. Drawing up doses days or even hours before a clinic is not acceptable.
- Each person administering vaccines should draw up no more than one multidose vial, or 10 doses, at one time.
- Monitor patient flow to avoid drawing up unnecessary doses.
- Discard any remaining vaccine in predrawn syringes at the end of the workday.
- Additional information on vaccine storage and handling can be found in the CDC Vaccine Storage and Handling Toolkit.

What is the appropriate dosing age for young children?
Annual influenza vaccination is recommended for persons 6 months of age and older. Some children will need 2 doses of influenza vaccine in the same season.

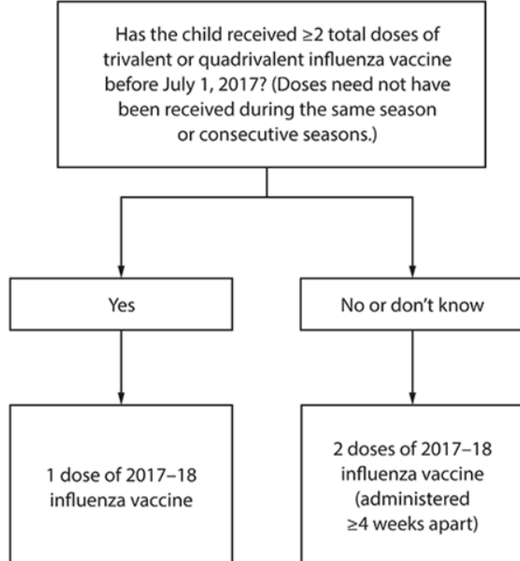
The following children will require 2 doses of influenza vaccine, administered at least 4 weeks apart, for the 2016–17 season:

- Children aged 6 months through 8 years who have never been vaccinated against influenza or for whom vaccination history is unknown
- Children aged 6 months through 8 years who have not received at least 2 doses of seasonal influenza vaccine (trivalent or quadrivalent) before July 1, 2016

The following children will require 1 dose of influenza vaccine for 2017–18:

- Children 6 months through 8 years who have received at least 2 doses of seasonal influenza vaccine (trivalent or quadrivalent) before July 1, 2017
- Children 9 years of age and older

Figure. Influenza vaccine dosing algorithm for children aged 6 months through 8 years — Advisory Committee on Immunization Practices, United States, 2017–18 influenza season



What is the correct dose (volume) of vaccine?
The amount of inactivated (injectable) vaccine that should be administered intramuscularly is based on the age of the patient and the vaccine product you are using.

For children 6–35 months of age, the correct dose is:

- 0.25 mL for Fluzone Quadrivalent
- 0.5 mL for FluLaval Quadrivalent
- For persons 3 years of age and older, the correct dose is 0.5 mL for all inactivated influenza vaccine products

What is the recommended site and needle length for giving influenza vaccine by intramuscular injection to adults?
Decisions on needle size and injection site when administering vaccine by intramuscular injection must be made for each person based on size of the muscle, thickness of the fatty tissue at the injection site, and injection technique. For adults 19 years of age and older, the deltoid muscle in the upper arm is the preferred site, although the vastus lateralis muscle in the anterolateral thigh may be used if the deltoid site cannot be used. Influenza vaccines are not highly viscous, so a fine-gauge (22- to 25-gauge) needle can be used.

- Use a ⅝- to 1-inch needle for men and women who weigh less than 130 pounds (less than 60 kg). Insert the needle at a 90-degree angle and stretch the skin flat between thumb and forefinger.
- Use a 1-inch needle for men and women who weigh 130-152 pounds (60-70 kg).
- Use a 1- to 1½-inch needle for women who weigh 152-200 pounds (70-90 kg) and men who weigh 152-260 pounds (70-118 kg).
- Use a 1½-inch needle for women who weigh more than 200 pounds (more than 90 kg) or men who weigh more than 260 pounds (more than 118 kg).

Should I aspirate before injecting the vaccine?
No, because there are no large blood vessels in the recommended sites, aspiration (i.e., pulling back on the syringe plunger after needle insertion but before injection) is not necessary before injecting vaccines. The Advisory Committee on Immunization Practices' General Recommendations on Immunization state that aspiration is not required before administering a vaccine.

https://www.cdc.gov/vaccines/hcp/vis/vis-statements/flu.pdf

Flu Vaccine and People with Egg Allergies

This page contains information about egg allergy and flu vaccination.

Summary:

CDC and its Advisory Committee on Immunization Practices have not changed their recommendations regarding egg allergy and receipt of influenza (flu) vaccines. The recommendations remain the same as last season (2016-2017). Based on those recommendations, people with egg allergies no longer need to be observed for an allergic reaction for 30 minutes after receiving a flu vaccine. People with a history of egg allergy of any severity should receive any licensed, recommended, and age-appropriate influenza vaccine. Those who have a history of severe allergic reaction to egg (i.e., any symptom other than hives) should be vaccinated in an inpatient or outpatient medical setting (including but not necessarily limited to hospitals, clinics, health departments, and physician offices), under the supervision of a health care provider who is able to recognize and manage severe allergic conditions.

Most flu shots and the nasal spray flu vaccine are manufactured using egg-based technology. Because of this, they contain a small amount of egg proteins, such as ovalbumin. However, studies that have examined the use of both the nasal spray vaccine and flu shots in egg-allergic and non-egg-allergic patients indicate that severe allergic reactions in people with egg allergies are unlikely. A recent CDC study found the rate of anaphylaxis after all vaccines is 1.31 per one million vaccine doses given.

Changes:

Recommendations for flu vaccination of persons with egg allergy have not changed since the 2016-2017 flu season.

CDC recommends:

- Persons with a history of egg allergy who have experienced only hives after exposure to egg should receive flu vaccine. Any licensed and recommended flu vaccine (i.e., any form of IIV or RIV) that is otherwise appropriate for the recipient's age and health status may be used.
- Persons who report having had reactions to egg involving symptoms other than hives, such as angioedema, respiratory distress, lightheadedness, or recurrent emesis; or who required epinephrine or another emergency medical intervention, may similarly receive any licensed and recommended flu vaccine (i.e., any form of IIV or RIV) that is otherwise appropriate for the recipient's age and health status. The selected vaccine should be administered in an inpatient or outpatient medical setting (including, but not necessarily limited to hospitals, clinics, health departments, and physician offices). Vaccine administration should be supervised by a health care provider who is able to recognize and manage severe allergic conditions.
- A previous severe allergic reaction to flu vaccine, regardless of the component suspected of being responsible for the reaction, is a contraindication to future receipt of the vaccine.

Questions & Answers:

What is considered an egg allergy? What are the signs and symptoms of an egg allergic reaction?

Egg allergy can be confirmed by a consistent medical history of adverse reactions to eggs and egg-containing foods, plus skin and/or blood testing for immunoglobulin E antibodies to egg proteins. Persons who are able to eat lightly cooked egg (e.g., scrambled egg) without reaction are unlikely to be allergic. Egg-allergic persons might tolerate egg in baked products (e.g., bread or cake). Therefore, tolerance to egg-containing foods does not exclude the possibility of egg allergy. Egg allergies can range in severity.

How common is egg allergy in children and adults?

Egg allergy affects about 1.3 % of all children and 0.2 % of all adults.

What vaccine should I get if I am egg allergic, but I can eat lightly cooked eggs?

If you are able to eat lightly cooked egg (e.g., scrambled egg) without reaction, you are unlikely to be allergic and can get any licensed flu vaccine (i.e., any form of IIV, LAIV, or RIV) that is otherwise appropriate for your age and health status.

What flu vaccine should I get if I get hives after eating egg-containing foods?
If you are someone with a history of egg allergy, who has experienced only hives after exposure to egg, you can get any licensed flu vaccine (i.e., any form of IIV, LAIV, or RIV) that is otherwise appropriate for your age and health.

What kind of flu vaccine should I get if I have more serious reactions to eating eggs or egg-containing foods like cardiovascular changes or a reaction requiring epinephrine?
If you are someone who has more serious reactions to eating eggs or egg-containing foods, like angioedema, respiratory distress, lightheadedness, or recurrent emesis; or who required epinephrine or another emergency medical intervention, you can get any licensed flu vaccine (i.e., any form of IIV, LAIV, or RIV) that is otherwise appropriate for your age and health status, but the vaccine should be given by a health care provider who can recognize and respond to a severe allergic response.

Are there still people with egg allergies who should not get flu vaccine?
People with egg allergy can receive flu vaccines according to the recommendations above. A person who has previously experienced a severe allergic reaction to flu vaccine, regardless of the component suspected of being responsible for the reaction should not get a flu vaccine again.

Why do flu vaccines contain egg protein?
Most flu vaccines today are produced using an egg-based manufacturing process and thus contain a small amount of egg protein called ovalbumin.

How much egg protein is in flu vaccine?
While not all manufacturers disclose the amount of ovalbumin in their vaccines, those that did from 2011–12 through 2014–15 reported maximum amounts of ≤1 µg/0.5 mL dose for flu shots and 0.24 µg/0.2 mL dose for the nasal spray vaccine. Cell-based flu vaccine (Flucelvax) likely has a much smaller amount of egg protein since the original vaccine virus is grown in eggs, but mass production of that vaccine does not occur in eggs. Recombinant vaccine (Flublok) is the only vaccine currently available that is completely egg free.

Can egg protein in flu vaccine cause allergic reactions in persons with a history of egg allergy?
Yes, allergic reactions can happen, but they occur very rarely with the flu vaccines available in the United States today. Occasional cases of anaphylaxis, a severe life-threatening reaction that involves multiple organ systems and can progress rapidly, in egg-allergic persons have been reported to the Vaccine Adverse Event Reporting System (VAERS) after administration of flu vaccine. Flu vaccines contain various components that may cause allergic reactions, including anaphylaxis. In a Vaccine Safety Datalink study, there were 10 cases of anaphylaxis after more than 7.4 million doses of inactivated flu vaccine, trivalent (IIV3) given without other vaccines, (rate of 1.35 per one million doses). Most of these cases of anaphylaxis were not related to the egg protein present in the vaccine. CDC and the Advisory Committee on Immunization Practices continue to review available data regarding anaphylaxis cases following flu vaccines.

How long after flu vaccination does a reaction occur in persons with a history of egg allergy?
Allergic reactions can begin very soon after vaccination. However, the onset of symptoms is sometimes delayed. In a Vaccine Safety Datalink study of more than 25.1 million doses of vaccines of various types given to children and adults over 3 years, only 33 people had anaphylaxis. Of patients with a documented time to onset of symptoms, eight cases had onset within 30 minutes of vaccination, while in another 21 cases, symptoms were delayed more than 30 minutes following vaccination, including one case with symptom onset on the following day.

Flu Vaccines in Pregnant Women

Health care providers of pregnant women play a vital role in advising patients on how to protect themselves and their developing babies against many threats, including influenza (flu). ***This fact sheet contains information about influenza and influenza vaccination during pregnancy and provides guidance on how to address concerns that patients may have about influenza vaccination.***

Background

Flu can be dangerous to pregnant women and their developing babies. A number of studies have shown that flu vaccination can protect pregnant women and their babies from flu. Because pregnant women are at high risk of serious flu complications, they are recommended for influenza vaccination during any trimester of their pregnancy. Millions of flu vaccines have been given for decades, including to pregnant women, with a good safety record. While there is a lot of evidence that flu vaccines can be given safely during pregnancy; these data are limited for the first trimester.

A Potential Safety Signal Associated with Flu Vaccination of Pregnant Women

A CDC-funded study found that women vaccinated early in pregnancy with a flu vaccine containing the pandemic H1N1 (H1N1pdm09) component and who also had been vaccinated the prior season with a H1N1pdm09-containing flu vaccine had an increased risk of spontaneous abortion (miscarriage) in the 28 days after vaccination. While most miscarriages occurred in the first trimester, several occurred during the second trimester. The median gestational age at the time of miscarriage was 7 weeks. This study does not quantify the risk of miscarriage and does not prove that flu vaccine was the cause of the miscarriage. Earlier studies have not found a link between flu vaccination and miscarriage. There is an ongoing investigation to study this issue further among women who were pregnant and eligible to receive flu vaccine during the 2012-13 through 2014-15 flu seasons. Results are anticipated in late 2018 or 2019.

CDC Recommendation

CDC and its Advisory Committee on Immunization Practices (ACIP) are aware of these data, which were first presented to ACIP at a public meeting in June 2015. At this time, CDC and ACIP have not changed the recommendation for influenza vaccination of pregnant women. It is recommended that pregnant women get a flu vaccine during any trimester of their pregnancy because flu poses a danger to pregnant women and a flu vaccine can prevent influenza in pregnant women.

CDC Guidance

As always, health care decisions should be part of an ongoing discussion between provider and patient. CDC recommends that any pregnant woman who has questions about vaccines talk to her health care provider. Providers should use their clinical judgment based on various factors including their patient's health status, local influenza activity, and the benefits versus the potential risks from flu vaccination when deciding whether and/or when to immunize their patient against influenza.

https://www.cdc.gov/flu/professionals/vaccination/index.htm

Frequently Asked Flu Questions 2018-2019 Influenza Season

What's new this flu season?

A few things are new this season:

- Flu vaccines have been updated to better match circulating viruses [the B/Victoria component was changed and the influenza A(H3N2) component was updated].
- For the 2018-2019 season, the nasal spray flu vaccine (live attenuated influenza vaccine or "LAIV") is again a recommended option for influenza vaccination of persons for whom it is otherwise appropriate. The nasal spray is approved for use in non-pregnant individuals, 2 years through 49 years of age. People with some medical conditions should not receive the nasal spray flu vaccine. All LAIV will be quadrivalent (four-component).
- Most regular-dose egg-based flu shots will be quadrivalent.
- All recombinant vaccine will be quadrivalent. (No trivalent recombinant vaccine will be available this season.)
- Cell-grown flu vaccine will be quadrivalent. For this vaccine, the influenza A(H3N2) and both influenza B reference viruses will be cell-derived, and the influenza A(H1N1) will be egg-derived. All these reference viruses will be grown in cells to produce the components of Flucelvax.
- No intradermal flu vaccine will be available.
- The age recommendation for "Fluarix Quadrivalent" was changed from 3 years old and older to 6 months and older after the annual recommendations were published last season to be consistent with Food and Drug Administration (FDA)-approved labeling.
- The age recommendation for Afluria Quadrivalent was changed from 18 years old and older to 5 years old and older after the annual recommendations were published last season to be consistent with Food and Drug Administration (FDA)-approved labeling.

What flu vaccines are recommended this season?
For the 2018-2019 flu season, providers may choose to administer any licensed, age-appropriate flu vaccine (IIV, RIV4, or LAIV4).

Options this season include:

- Standard dose flu shots. These are given into the muscle. They are usually given with a needle, but two (Afluria and Afluria Quadrivalent) can be given to some people (those aged 18 through 64 years) with a jet injector.
- High-dose shots for older people.
- Shots made with adjuvant for older people.
- Shots made with virus grown in cell culture.
- Shots made using a vaccine production technology (recombinant vaccine) that does not require the use of flu virus.
- Live attenuated influenza vaccine (LAIV) – or the nasal spray vaccine – is also an option for use during the 2018-2019 season for persons whom it is otherwise appropriate.

There is a table showing all flu vaccines that are FDA-approved for use in the United States during the 2018-2019 season.

What viruses will the 2018-2019 flu vaccines protect against?
There are many different flu viruses and they are constantly changing. The composition of U.S. flu vaccines is reviewed annually and updated as needed to match circulating flu viruses. Flu vaccines protect against the three or four viruses (depending on vaccine) that research suggests will be most common. For 2018-2019, trivalent (three-component) vaccines are recommended to contain:

- A/Michigan/45/2015 (H1N1)pdm09-like virus
- A/Singapore/INFIMH-16-0019/2016 A(H3N2)-like virus (updated)
- B/Colorado/06/2017-like (Victoria lineage) virus (updated)

Quadrivalent (four-component) vaccines, which protect against a second lineage of B viruses, are recommended to contain:

- the three recommended viruses above, plus B/Phuket/3073/2013-like (Yamagata lineage) virus

When should I get vaccinated?
You should get a flu vaccine before flu begins spreading in your community. It takes about two weeks after vaccination for antibodies that protect against flu to develop in the body, so make plans to get vaccinated early in fall, before flu season begins. CDC recommends that people get a flu vaccine by the end of October. Getting vaccinated later, however, can still be beneficial and vaccination should continue to be offered throughout flu season, even into January or later. Children who need two doses of vaccine to be protected should start the vaccination process sooner, because the two doses must be given at least four weeks apart.

Can I get a flu vaccine if I am allergic to eggs?
The recommendations for people with egg allergies are the same as last season.

- People who have experienced only hives after exposure to egg can get any licensed flu vaccine that is otherwise appropriate for their age and health.
- People who have symptoms other than hives after exposure to eggs, such as angioedema, respiratory distress, lightheadedness, or recurrent emesis; or who have needed epinephrine or another emergency medical intervention, can also get any licensed flu vaccine that is otherwise appropriate for their age and health, but the vaccine should be given in a medical setting and be supervised by a health care provider who is able to recognize and manage severe allergic conditions. (Settings include hospitals, clinics, health departments, and physician offices). People with egg allergies no longer have to wait 30 minutes after receiving their vaccine.

Implications of Cell-Based Vaccines

Why is it significant that cell-grown vaccine reference viruses are used to produce some components of one type of flu vaccine?
Cell-grown reference viruses do not have the changes that are present in egg-grown reference viruses, so they should be more similar to circulating "wild-type" viruses. Vaccine effectiveness depends in part on the match between the vaccine virus and circulating flu viruses.

Is flu vaccine made using a cell-grown reference virus and cell-based technology more effective than vaccine made using an egg-grown reference virus and egg-based technology?
While the use of cell-grown reference viruses and cell-based technology may offer the potential for better protection over traditional, egg-based flu vaccines because they result in vaccine viruses that are more similar to flu viruses in circulation, there are no data yet to support this. There is no preferential recommendation for one injectable flu vaccine over another.

Flu Activity

What sort of flu season is expected this year?
It is not possible to predict what this flu season will be like. While flu spreads every year, the timing, severity, and length of the season varies from one season to another.

Will new flu viruses circulate this season?
Flu viruses are constantly changing so it's not unusual for new flu viruses to appear each year. For more information about how flu viruses change, visit How the Flu Virus Can Change.

Will the United States have a flu epidemic?
The United States experiences annual epidemics of seasonal flu. This time of year is called "flu season." In the United States, flu viruses are most common during the fall and winter months. Influenza activity often begins to increase in October and November. Most of the time flu activity peaks between December and February, and it can last as late as May. CDC monitors certain key flu indicators (for example, outpatient visits of influenza-like illness (ILI), the results of laboratory testing and reports of flu hospitalizations and deaths). When these indicators rise and remain elevated for a number of consecutive weeks, "flu season" is said to have begun. Usually ILI increases first, followed by an increase in flu-associated hospitalizations, which is then followed by increases in flu-associated deaths.

For the most current influenza surveillance information, please see FluView at Weekly U.S. Influenza Surveillance Report.

When will flu activity begin and when will it peak?
The timing of flu is unpredictable and can vary in different parts of the country and from season to season. Seasonal flu viruses can be detected year-round; however, seasonal flu activity often begins as early as October and November and can continue to occur as late as May. Flu activity most commonly peaks in the United States between December and February.

How many people get sick with flu every year?
The exact number of flu illnesses that occur each season is not known because flu is not a reportable disease and not everyone who gets sick with flu seeks medical care or gets tested. CDC conducts surveillance of flu related illness through the Outpatient Influenza-like Illness Surveillance Network (ILINet) and FluSurv-Net (see more information on FluSurv-Net in next question). ILINet collects information on outpatient illness, and FluSurv-Net collects information on hospitalizations. For more information, see CDC's Overview of Influenza Surviellance in the United States.

Because the ILINet systems does not capture all influenza-related illness in the United States, CDC uses mathematical modeling in combination with data from traditional flu surveillance systems to estimate the true burden of flu illness in the United States, including total flu cases. CDC estimates that flu has resulted in between 9.2 million and 35.6 million illnesses each year in the United States. For more information on these estimates, see CDC's Disease Burden of Influenza page.

How many people are hospitalized from flu every year?
CDC estimates the total number of flu-associated hospitalizations in the United States. CDC's flu surveillance system FluSurv-NET, monitors rates of lab confirmed flu-associated hospitalizations in about 9% of the U.S. population, and it collects information only on hospitalizations that had a positive flu test. We know that not everyone with an influenza related hospitalization will be captured in this system because not everyone gets a flu test and those that do may not have a positive result if many days have passed since they first became sick. That is why CDC also uses mathematical modeling to fill in the picture of the disease burden. Since 2010, CDC estimates that flu has resulted in between 140,000 and 710,000 hospitalizations each year. For more information, see CDC's Disease Burden of Influenza page.

How many people die from flu each year?
While flu deaths in children are reported to CDC, flu deaths in adults are not nationally notifiable. In order to monitor influenza related deaths in all age groups, CDC tracks pneumonia and influenza (P&I)–attributed deaths through the National Center for Health Statistics (NCHS) Mortality Reporting System. This system tracks the proportion of death certificates processed that list pneumonia or influenza as the underlying or contributing cause of death. This system provides an overall indication of whether flu-associated deaths are elevated, but does not provide an exact number of how many people died from flu. For more information, see Overview of Influenza Surveillance in the United States, "Mortality Surveillance."

As it does for the numbers of flu cases, doctor's visits and hospitalizations, CDC also estimates deaths in the United States using mathematical modeling. CDC estimates that from 2010-2011 to 2013-2014, influenza-associated deaths in the United States ranged from a low of 12,000 (during 2011-2012) to a high of 56,000 (during 2012-2013). Death certificate data and weekly influenza virus surveillance information was used to estimate how many flu-related deaths occurred among people whose underlying cause of death on their death certificate included respiratory or circulatory causes. For more information, see Estimating Seasonal Influenza-Associated Deaths in the United States and CDC's Disease Burden of Influenza page.

Why is it difficult to know exactly how many people die from flu?
There are several factors that make it difficult to determine accurate numbers of deaths caused by flu regardless of reporting. Some of the challenges in counting flu associated deaths include the following:

- the sheer volume of deaths to be counted;
- the lack of testing (not everyone that dies with an influenza-like illness is tested for influenza);
- and the different coding of deaths (influenza-associated deaths often are a result of complications secondary to underlying medical problems, and this may be difficult to sort out).

For more information, see Estimating Seasonal Influenza-Associated Deaths in the United States: CDC Study Confirms Variability of Flu.

Protective Actions

What should I do to protect myself from flu this season?
CDC recommends a yearly flu vaccine for everyone 6 months of age and older as the first and most important step in protecting against this serious disease.

In addition to getting a seasonal flu vaccine, you can take everyday preventive actions like staying away from sick people and washing your hands to reduce the spread of germs. If you are sick with flu, stay home from work or school to prevent spreading flu to others. In addition, there are prescription medications called antiviral drugs that can be used to treat influenza illness. Visit What you Should Know About Flu Antiviral Drugs for more information.

What should I do to protect my loved ones from flu this season?
Encourage your loved ones to get vaccinated. Vaccination is especially important for people at high risk for developing flu complications, and their close contacts. Also, if you have a loved one who is at high risk of flu complications and they develop flu symptoms, encourage them to get a medical evaluation for possible treatment with flu antiviral drugs. These drugs work best if given within 48 hours of when symptoms start. CDC recommends that people who are at high risk for serious flu complications and who get flu symptoms during flu season be treated with flu antiviral drugs as quickly as possible without waiting for confirmatory testing. People who are not at high risk for serious flu complications may also be treated with flu antiviral drugs, especially if treatment can begin within 48 hours.

Do some children require two doses of flu vaccine?
Yes. Some children 6 months through 8 years of age will require two doses of flu vaccine for adequate protection from flu. Children in this age group who are getting vaccinated for the first time will need two doses of flu vaccine, spaced at least 4 weeks apart. Children who have only received one dose in their lifetime also need two doses. Your child's doctor or other health care professional can tell you if your child needs two doses of flu vaccine. Visit Children & Influenza (flu) for more information.

What can I do to protect children who are too young to get vaccinated?
Children younger than 6 months old are at high risk of serious flu complications, but are too young to get a flu vaccine. Because of this, safeguarding them from flu is especially important. If you live with or care for an infant younger than 6 months old, you should get a flu vaccine to help protect them from flu. See Advice for Caregivers of Young Children for more information. Everyone else who is around the baby also should be vaccinated. Also, studies have shown that flu vaccination of the mother during pregnancy can protect the baby after birth from flu infection for several months.

In addition to getting vaccinated, you and your loved ones can take everyday preventive actions like staying away from sick people and washing your hands to reduce the spread of germs. If you are sick with flu, stay home from work or school to prevent spreading flu to others.

Vaccine and Vaccination

How much flu vaccine will be available this season?
Flu vaccine is produced by private manufacturers, so supply depends on manufacturers. For the 2018-2019 season, manufacturers projected they would provide between 163 million and 168 million doses of injectable vaccine for the U.S. market. (Projections may change as the season progresses.) Flu vaccine supply updates will be provided as they become available at Seasonal Influenza Vaccine & Total Doses Distributed.

Are any of the available flu vaccines recommended over the others?
For the 2018-2019 flu season, ACIP recommends annual influenza vaccination for everyone 6 months and older with any licensed, age-appropriate flu vaccine (IIV, RIV4, or LAIV4) with no preference expressed for any one vaccine over another.

There are many vaccine options to choose from; the most important thing is for all people 6 months and older to get a flu vaccine every year. If you have questions about which vaccine is best for you, talk to your doctor or other health care professional.

Why is the nasal spray being recommended as an option this year when it has been shown to not be effective in past flu seasons?
While observational data from 2010-11 through 2015-16 flu seasons indicate that LAIV was not effective among 2 through 17-year-olds against H1N1pdm09 influenza viruses in the U.S., LAIV was effective against influenza B viruses, and was similarly effective to inactivated influenza vaccines against H3N2 viruses. Some data suggest that the new H1N1 vaccine virus included in the new LAIV vaccines will have improved effectiveness against circulating H1N1 viruses; however, no published effectiveness estimates are available yet.

When should I get vaccinated?
Getting vaccinated before flu activity begins helps protect you once flu season starts in your community. It takes about two weeks after vaccination for the body's immune response to fully respond and for you to be protected, so make plans to get vaccinated. CDC recommends that people get a flu vaccine by the end of October. However, getting vaccinated later can still be beneficial. CDC recommends ongoing flu vaccination as long as influenza viruses are circulating, even into January or later. Children aged 6 months through 8 years old who need two doses of vaccine should get the first dose as soon after vaccine is available to allow time to get the second dose before the start of flu season. The two doses should be given at least 4 weeks apart.

Where can I get a flu vaccine?
Flu vaccines are offered by many doctor's offices, clinics, health departments, pharmacies and college health centers, as well as by many employers, and even by some schools.

Even if you don't have a regular doctor or nurse, you can get a flu vaccine somewhere else, like a health department, pharmacy, urgent care clinic, and often your school, college health center, or work.

Visit the HealthMap Vaccine Finder to locate where you can get a flu vaccine.

What is flu vaccination using a jet injector?
The U.S. Food and Drug Administration (FDA) has approved two influenza vaccines (Afluria and Afluria Quadrivalent) for administration by a jet injector device (the PharmaJet Stratis 0.5ml Needle-free Jet Injector) for people 18 through 64 years of age. These are the only two influenza vaccines approved for administration by jet injector. People aged 18 through 64 years may receive these vaccines either by jet injector or needle. A jet injector is a medical device used for vaccination that uses a high-pressure, narrow stream of fluid to penetrate the skin instead of a hypodermic needle. For more information, see Flu Vaccination by Jet Injector.

What is adjuvanted flu vaccine?
The U.S. Food and Drug Administration (FDA) licensed a seasonal influenza (flu) vaccine containing adjuvant for adults 65 years of age and older. An adjuvant is an ingredient added to a vaccine to create a stronger immune response to vaccination. FLUAD™[155 KB, 13 pages] was licensed in November 2015 and will be available during the 2018-2019 flu season. It contains the MF59 adjuvant, an oil-in-water emulsion of squalene oil. FLUAD™ is the first adjuvanted seasonal flu vaccine marketed in the United States. For more information visit: FLUAD™ Flu Vaccine With Adjuvant.
How long does a flu vaccine protect me from getting flu?

Multiple studies conducted over different seasons and across flu vaccine types and influenza virus subtypes have shown that the body's immunity to influenza viruses (acquired either through natural infection or vaccination) declines over time. The decline in antibodies is influenced by several factors, including the antigen used in the vaccine, the age of the person being vaccinated, and the person's general health (for example, certain chronic health conditions may have an impact on immunity). Older people and others with weakened immune systems may not generate the same amount of antibodies after vaccination; further, their antibody levels may drop more quickly when compared to young, healthy people.

Getting vaccinated each year provides the best protection against flu throughout flu season. It's important to get a flu vaccine every season, even if you got vaccinated the season before and the viruses in the flu vaccine have not changed for the current season.

Can I get vaccinated and still get the flu?
Yes. It's possible to get sick with flu even if you have been vaccinated (although you won't know for sure unless you get a flu test). This is possible for the following reasons:

- You may be exposed to a flu virus shortly before getting vaccinated or during the period that it takes the body to gain protection after getting vaccinated. This exposure may result in you becoming ill with flu before the vaccine begins to protect you. (Antibodies that provide protection develop in the body about 2 weeks after vaccination.)
- You may be exposed to a flu virus that is not included in the seasonal flu vaccine. There are many different flu viruses that circulate every year. A flu vaccine is made to protect against the three or four flu viruses that research suggests will be most common.
- Unfortunately, some people can become infected with a flu virus a flu vaccine is designed to protect against, despite getting vaccinated. Protection provided by flu vaccination can vary widely, based in part on health and age factors of the person getting vaccinated. In general, a flu vaccine works best among healthy younger adults and older children. Some older people and people with certain chronic illnesses may develop less immunity after vaccination. Flu vaccination is not a perfect tool, but it is the best way to protect against flu infection.

Flu Vaccine Effectiveness

How effective will flu vaccines be this season?
Influenza vaccine effectiveness (VE) can vary from season to season and among different age and risk groups and even by vaccine type. How well the vaccine works can depend in part on the match between the vaccine viruses used to produce vaccine and circulating viruses that season. It's not possible to predict in advance what flu viruses will predominate. CDC monitors circulating viruses throughout the year and provides new and updated information about their similarity to flu vaccine viruses as it becomes available. Information is published weekly in FluView and summarized at intervals in the Morbidity and Mortality Weekly Report (MMWR).

Vaccine effectiveness estimates are also provided when they become available. While vaccine effectiveness can vary, recent studies show vaccine reduces the risk of flu illness by about 30% to 60% among the overall population during seasons when most circulating flu viruses are like the vaccine viruses. Similar reductions against hospitalization have been observed too. For more information about previous vaccine effectiveness, visit How Well Does the Seasonal Flu Vaccine Work?

Will this season's flu vaccine be a good match for circulating viruses?
It's not possible to predict with certainty if a flu vaccine will be a good match for circulating flu viruses. A flu vaccine is made to protect against the flu viruses that research and surveillance indicate will likely be most common during the season. However, experts must pick which flu viruses to include in a flu vaccine many months in advance in order for flu vaccines to be produced and delivered on time. Also flu viruses change constantly (called "drift"). They can change from one season to the next or they can even change within the course of one flu season. Another factor that can impact vaccine effectiveness, especially against influenza A(H3N2) viruses, are changes that can occur in vaccine viruses as they are grown in eggs, which is the production method for most current flu vaccines. Because of these factors, there is always the possibility of a less than optimal match between circulating flu viruses and the viruses in a flu vaccine.

Over the course of flu season, CDC studies samples of circulating flu viruses to evaluate how close a match there is between viruses used to make the flu vaccine and circulating flu viruses.

One of the ways that helps CDC evaluate the match between flu vaccine viruses and circulating flu viruses is with a lab process called 'genetic and antigenic characterization'. Results of genetic and antigenic characterization testing are published weekly in CDC's FluView.

Can a flu vaccine provide protection even if the flu vaccine is not a "good" match?
Yes, antibodies made in response to vaccination with one flu virus can sometimes provide protection against different but related flu viruses. A less than ideal match may result in reduced vaccine effectiveness against the flu virus that is different from what is in the flu vaccine, but it might still provide some protection against flu illness.

In addition, it's important to remember that a flu vaccine contains three or four flu viruses (depending on the type of vaccine you receive) so that even when there is a less than ideal match or lower effectiveness against one virus, a flu vaccine may protect against the other flu viruses.

For these reasons, even during seasons when there is a less than ideal match, CDC continues to recommend flu vaccination for everyone 6 months and older. Vaccination is particularly important for people at high risk for serious flu complications), and their close contacts.

What happens in the body when someone has flu?
Influenza viruses usually infect the respiratory tract (i.e., the airways of the nose, throat and lungs). As the infection progresses, the body's immune system responds to fight the virus. This results in inflammation that can trigger respiratory symptoms such as cough and sore throat. The immune system response can also trigger fever and cause muscle or body aches. When infected persons cough, sneeze, or talk, they can spread influenza viruses in respiratory droplets to people who are nearby. People might also get flu by touching a contaminated surface or object that has flu virus on it and then touching their own mouth or nose.

Most people who become sick will recover in a few days to less than two weeks, but some people may become more severely ill. Following flu infection, moderate complications such as secondary ear and sinus infections can occur. Pneumonia is a serious flu complication that can result from either influenza virus infection alone or from co-infection of flu virus and bacteria. Other possible serious complications triggered by flu can include inflammation of the heart (myocarditis), brain (encephalitis) or muscle (myositis, rhabdomyolysis) tissues, and multi-organ failure (for example, respiratory and kidney failure). Severe complications can happen to anyone, but may be more likely to happen to people who have certain chronic medical conditions, or in elderly persons.

What should I do if I get sick with flu?
Most people with flu have mild illness and do not need medical care or antiviral drugs. If you get sick with flu symptoms, in most cases, you should stay home and avoid contact with other people except to get medical care.

If, however, you have symptoms of flu and are at high risk of flu complications, or are very sick or concerned about your illness, contact your health care provider. There are drugs your doctor may prescribe for treating flu called antivirals. These drugs can make you better faster and may also prevent serious complications.

Antiviral drugs are prescription drugs that can be used to treat flu illness. People at high risk of serious flu complications recommended for prompt antiviral treatment include children younger than 2 years of age (although all children younger than 5 years are considered at higher risk for complications from influenza, the highest risk is for those younger than 2 years of age), adults 65 years of age and older, pregnant women, people with certain long-term medical conditions, and residents of nursing homes and other long-term care facilities). Antiviral treatment as early as possible is also recommended for people who are very sick with flu (such as those with complicated, progressive illness or people hospitalized because of flu). Other people can be treated with antivirals at their health care professional's discretion. Treating high risk people or people who are very sick with flu with antiviral drugs is very important. Studies show that prompt treatment with antiviral drugs can prevent serious flu complications. Prompt treatment can mean the difference between having a milder illness versus very serious illness that could result in a hospital stay.

Treatment with antivirals works best when begun within 48 hours of getting sick, but can still be beneficial when given later in the course of illness. Antiviral drugs are effective across all age and risk groups. Studies show that antiviral drugs are under-prescribed for people who are at high risk of complications who get flu. Three FDA-approved antiviral medications are recommended for use during the 2018-2019 flu season: oseltamivir (available in generic versions and under the trade name Tamiflu®), zanamivir (Relenza®), and peramivir (Rapivab®). More information about antiviral drugs can be found at Treatment – Antiviral Drugs.

See "The Flu: What To Do If You Get Sick" for more information.

Surveillance

How does CDC track flu activity?
The Epidemiology and Prevention Branch in the Influenza Division at CDC collects, compiles and analyzes information on flu activity year round in the United States and produces FluView, a weekly influenza surveillance report, and FluView Interactive, which allows for more in-depth exploration of influenza surveillance data. The U.S. influenza surveillance

system is a collaborative effort between CDC and its many partners in state, local, and territorial health departments, public health and clinical laboratories, vital statistics offices, healthcare providers, clinics, and emergency departments. Information in five categories is collected from eight different data sources that allow CDC to:

- Find out when and where influenza activity is occurring
- Track influenza-related illness
- Determine what influenza viruses are circulating
- Detect changes in influenza viruses
- Measure the impact influenza is having on hospitalizations and deaths in the United States

For more information, visit "Overview of Influenza Surveillance in the United States".

What will CDC do to monitor flu vaccine effectiveness for the 2018-2019 season?
CDC collaborates with partners each season to assess how well the seasonal flu vaccines are working. During the 2018-2019 season, CDC is planning multiple studies on the effectiveness of flu shots. These studies measure vaccine effectiveness in preventing laboratory-confirmed influenza among persons 6 months of age and older. A summary of CDC's latest vaccine effectiveness estimates is available at Seasonal Influenza Vaccine Effectiveness, 2005-2018.

What is CDC doing to monitor antiviral resistance in the United States during the 2018-2019 season?
Antiviral resistance means that a virus has changed in such a way that antiviral drugs are less effective or not effective at all in treating or preventing illnesses with that virus. CDC will continue to collect and monitor flu viruses for changes through an established network of domestic and global surveillance systems. CDC also is working with the state public health departments and the World Health Organization to collect additional information on antiviral resistance in the United States and worldwide. The information collected will assist in making informed recommendations regarding use of antiviral drugs to treat influenza.

https://www.cdc.gov/flu/about/season/flu-season-2018-2019.htm

Strategic Integration Summary

September 2018

3rd Party Payer Alternate Payment Models

- Commercial capitated model continues
    - Payer requested additional value-based outcome measures to demonstrate enhanced ROI
- Still working on the Managed Medicaid agreement

Providing Technical Assistance with National Medicare Cost Data Collection Process

- Actively engaged with CMS and the RAND corporation on helping develop the national Ambulance Cost Data Collection process
    - 3 conference call/webinars held with Medicare and the RAND Corporation
    - Exchanging ideas, feedback, templates and data
    - Coordinating focus groups for RAND/CMS at EMS World Expo in October '18

Providing Technical Assistance for ? CMS//CMMI Pilot Program

- Requested by CMS/CMMI to assist with the potential of implementing a new payment model for Medicare
    - Medicare funding for ambulance response, assessment, treatment and no transport
        - HCPCS Code A0998
    - 3 webinars and data regarding our, and other, ATA programs

Medicaid Supplemental Ambulance Payment Program

- Participating as SME to Public Consulting Group (PCG) and Texas HHSC to develop potential new Medicaid supplemental payment approach
    - Trying to secure economic model for the program to continue

NQF/Lewin Group Technical Advisory Panel (TAP)

- Selected to be on the TAP with The Lewin Group for NQF to revise the CMS hospital STEMI value-based purchasing metric
    - Part of the VBP clinical bundle for hospital CMS bonuses or penalties
- Reached out to Baylor, JPS and THR to test the new measures
    - Baylor and THR have enthusiastically agreed
    - Will be the field test to determine if hospitals can submit electronic data elements for First Medical Contact to PCI time
- "First Medical Contact" may be defined as EMS patient contact
- Encourages EMS//Hospital data integration efforts

StarSaver Plus Pilot

- Working with Trinity Terrace Independent Living Facility in Fort Worth on the StarSaver Plus annual subscription program
    - All components of StarSaver, PLUS MedStar on Demand (MOD) pilot program
    - Access to select MIH program services
- Presented and reviewed with OMD
- Physician oversight for Trinity Terrace reviewing the EPAB/OMD MIH Protocols for counter signature

Paid Consulting Activity

- Center for Public Safety Management (division of ICMA)
    - Salinas, CA project assisting with option for fire department first response role
        - Draft report w/recommendations drafted and being reviewed by ICMA/CPSM

Riding for Life Event

- Motorcycle ride 9/15 to bring awareness to 1st Responder Suicides
  - 34 bikes, 1 slingshot, 1 convertible, 1 SUV, 45 people
- Code Green and MedStar Hope Squad awareness and education
- Will be an annual event

Blood Drive at MedStar

- October 19, 2018 3p – 8p

EMS vs. non-EMS ED Arrival Outcomes Study for ACS Patients:

- Currently in IRB for approval
- Working with Medical City Fort Worth and Medical City Alliance on IRB approved retrospective outcome study on Acute Coronary Symptom (ACS) patient outcomes based on mode of arrival to the ED
  - Ambulance vs. 'other'
- Comparative outcomes measures, stratified by comorbidities and age, will include:
  1. Post-PCI Ejection Fraction
  2. Date/Time of hospital discharge (*measure Average Length of Stay (ALOS)*)
  3. Discharge Dx (*1 primary and up to 3 secondary Dx codes/co-morbidities*)
  4. 'Discharged to' status (*home, Skilled Nursing Facility (SNF), Long Term Acute Care (LTAC) hospital, home health, palliative care, hospice*)

Upcoming Speaking Engagements:

Event	Date	Location	Attendees
EMS World Expo (*Mult. MedStar Speakers*)	October '18	Nashville, TN	~3,000
Nat. Assoc. of EMS Physicians	January '19	Austin, TX	~1,000
JEMS EMS Today (*Mult. MedStar Speakers*)	February '19	National Harbor, MD	~2,000
International Academy of Emergency Disp.	April '19	National Harbor, MD	~1,000

Media:

Local –

- TRE Train Crash
  - FOX 4, NBC 5, ABC 8, CBS 11, Telemundo, Univision, KRLD, KLIF, WBAP, Star-Telegram, Dallas Morning News

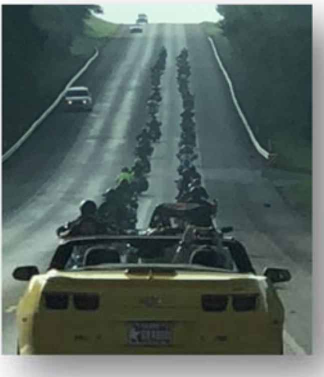
- Weather (rain) related Crash volume and tips to avoid crashes
  - FOX 4, NBC 5, ABC 8 (*including ride-along*), CBS 11, Telemundo, Univision, KRLD, KLIF, WBAP

- New Ambulances
  - NBC 5, KRLD, WBAP

- Riding For Life
  - CBS 11, KRLD, WBAP

National –

- EMS Innovation Series Column
  - EMS World Magazine



Education and Community Programs Report

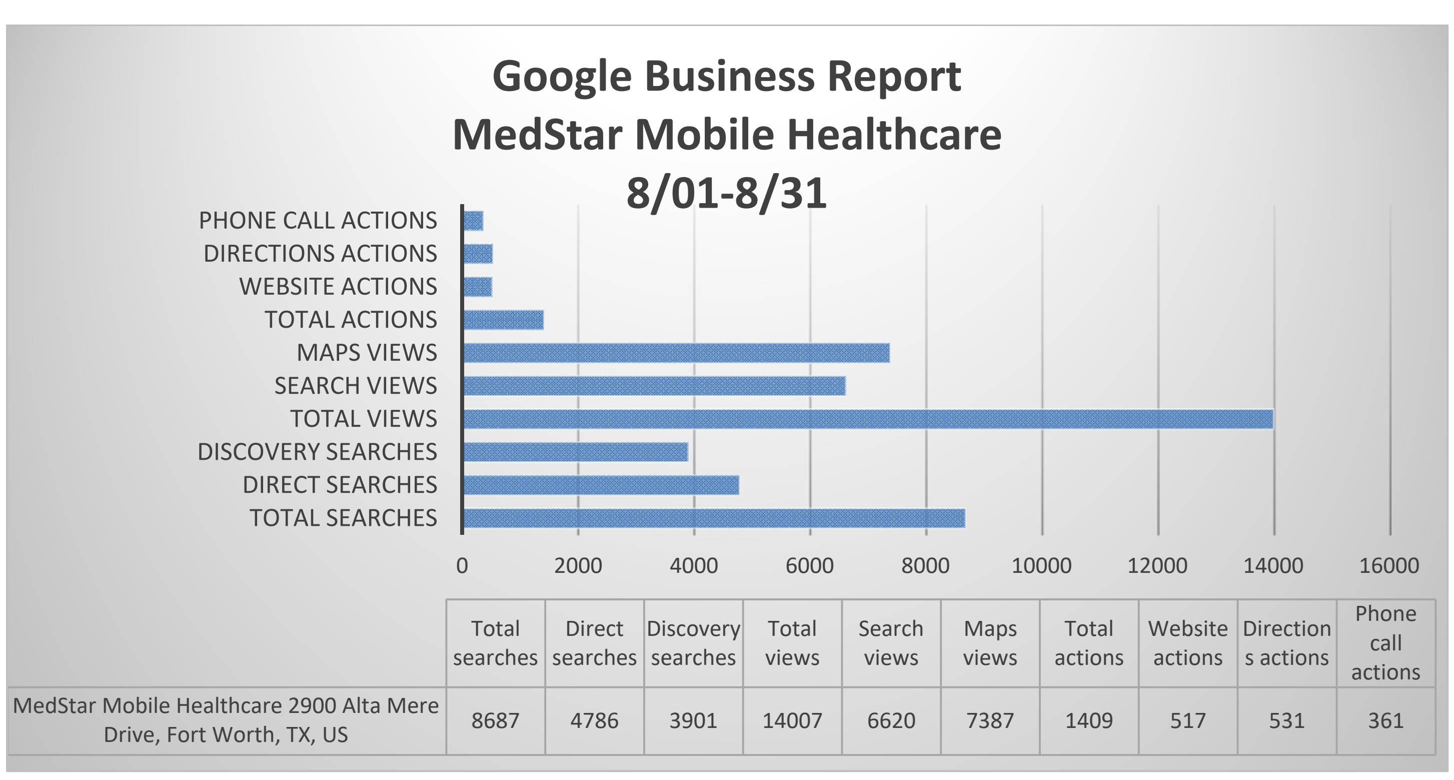
EMS Education Programs:

- 9/10/2018 EMT Evening Class started: Currently 20 students registered. Course end date 12/17/2018
- 9/11/2018 EMT Day Class started: 19 students registered. Course end date: 11/27/2018.
- EMT High School: 16 Eaton HS, 18 Byron Nelson, 6 Weatherford, 35 Ben Barber (5 students are EMR/ECA)
- Accepting applications for TCC/MedStar Paramedic Academy. Deadline for first round submission 09/28/18
- Saginaw FD Advanced Medical Life Support 10/01/18-10/02/18
- Haltom City FD Advanced Medical Life Support 10/2018

Community Programs:

- 9/15/2018 MedStar Stop the Bleed
- 10/13/2018 Westworth Village Stop the Bleed/CPR

Social Media/Web Presence:



	Total searches	Direct searches	Discovery searches	Total views	Search views	Maps views	Total actions	Website actions	Directions actions	Phone call actions
MedStar Mobile Healthcare 2900 Alta Mere Drive, Fort Worth, TX, US	8687	4786	3901	14007	6620	7387	1409	517	531	361

Twitter:

AUG 2018 SUMMARY

Tweets

25

Tweet impressions

35.7K

Profile visits

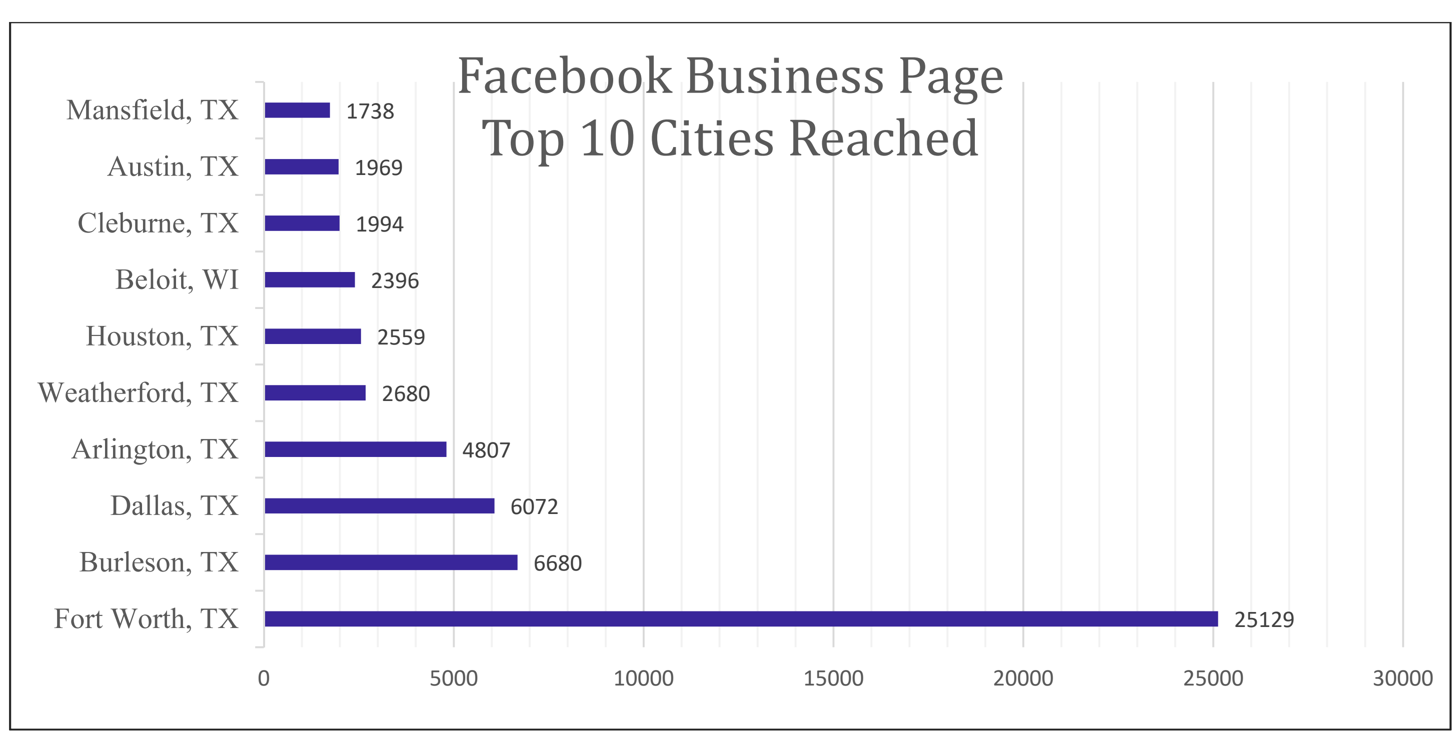
2,439

Mentions

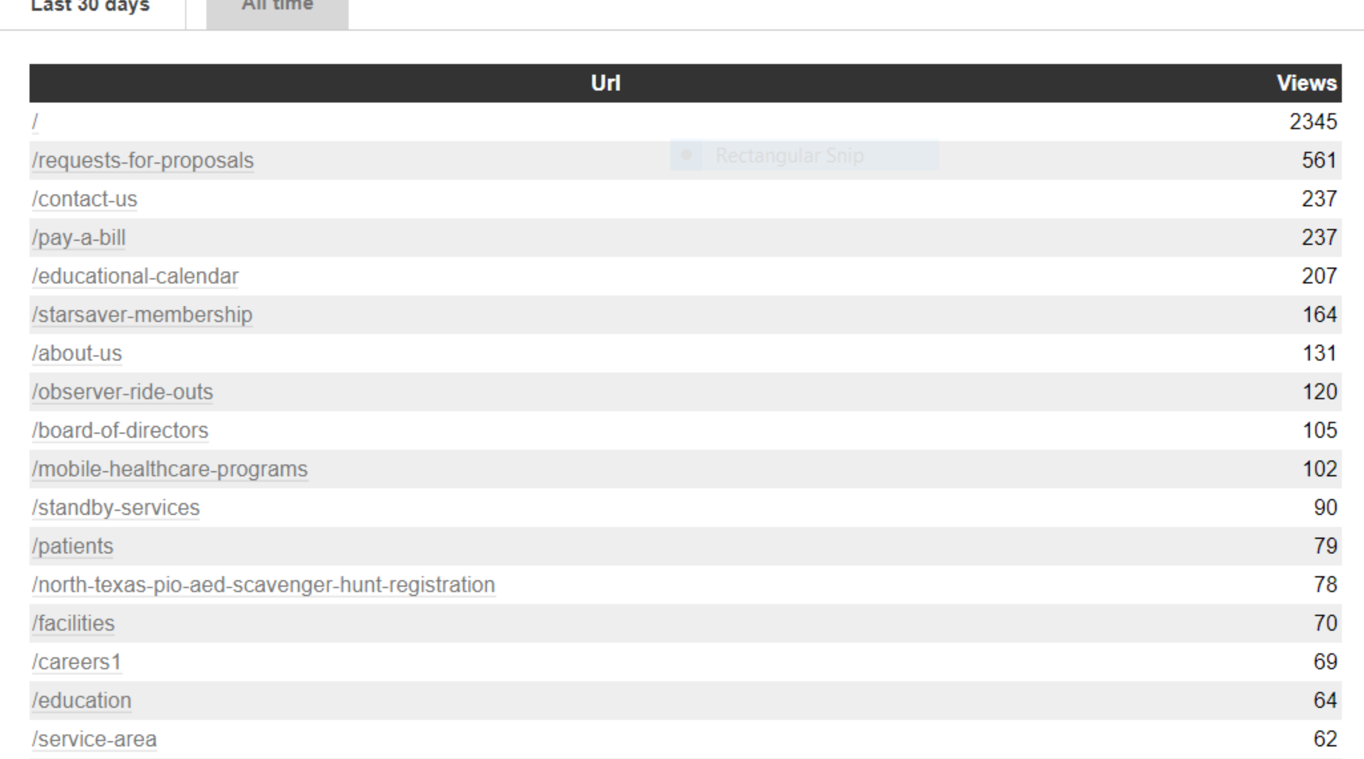
36

New followers

-7



MedStar911.org Web Page Statistics



Top Pages

Last 30 days | All time

Url	Views
/	2345
/requests-for-proposals	561
/contact-us	237
/pay-a-bill	237
/educational-calendar	207
/starsaver-membership	164
/about-us	131
/observer-ride-outs	120
/board-of-directors	105
/mobile-healthcare-programs	102
/standby-services	90
/patients	79
/north-texas-pio-aed-scavenger-hunt-registration	78
/facilities	70
/careers1	69
/education	64
/service-area	62
/in-the-news	55
/customers	53
/paramedic-and-emt-application-and-hiring-process	51

Top Referrers

Last 30 days | All time

Referrer	Referrals
https://www.google.com/	1289
http://m.facebook.com	768
https://www.bing.com/	99
http://m.facebook.com/	57
http://www.google.com/	47
https://www.google.co.in/	31
https://www.linkedin.com/	20
https://www.google.ca/	18
android-app://com.google.android.googlequicksearchbox	16
http://www.google.com/search?hl=fr&q=dictionary+english	14
https://search.yahoo.com/	14
https://www.google.ae/	10
https://www.google.co.za/	10
https://www.google.com.ph/	10
https://yes-com.com/	9
http://www.MEDSTARMHC.ORG	8
https://www.facebook.com/	8
http://filespolitics853.weebly.com/	7
http://image.baidu.com/i?ct=503316480&z=0&tn=baiduimagede...	7
https://duckduckgo.com/	7

Customer Integration Report

- Working with the Joint Emergency Operations Center to assist with healthcare facility disaster planning

- The Cardiac Emergency Preparedness Task Force, part of the Fort Worth Safe Communities Coalition, has been working to get the City of Fort Worth accredited as a "Heart Safe Community".
  - Application submitted, will meet with the committee at the end of this month.

- Working with many stakeholders to have a guided discussion regarding mental health services

- MedStar participated in the American Heart Association's annual Heart Walk.
  - This year, we raised $1,200. This is an employee led initiative that had 42 people register for the event.

- MedStar's End-of-Summer Party on Saturday, October 6 from 1-4pm
  - We'll have games and BBQ!

MedStar's AHA Heart Walk Team

StarSaver Membership Report:

Membership New / Renewal Comparison								
New Households	**2016**	**Cumulative**	**2017**	**Cumulative**	**% Change**	**2018**	**Cumulative**	**% Change**
January	35	35	37	37	5.7%	38	38	2.7%
February	58	93	32	69	-25.8%	41	79	14.5%
March	51	144	48	117	-18.8%	56	135	15.4%
April	40	184	68	185	0.5%	45	180	-2.7%
May	48	232	44	229	-1.3%	34	214	-6.6%
June	24	256	40	269	5.1%	36	250	-7.1%
July	22	278	29	298	7.2%	31	281	-5.7%
August	36	314	22	320	1.9%	35	316	-1.3%
September	42	356	38	358	0.6%	6	322	-10.1%
October	53	409	38	396	-3.2%	0	322	-18.7%
November	32	441	43	439	-0.5%	0	322	-26.7%
December	9	450	19	458	1.8%	0	322	-29.7%
Total New Member Households	450		458			322		
Renewing Households	**2016**	**Cumulative**	**2017**	**Cumulative**	**% Change**	**2018**	**Cumulative**	**% Change**
January	454	454	344	344	-24.2%	347	347	0.9%
February	306	760	117	461	-39.3%	546	893	93.7%
March	192	952	78	539	-43.4%	96	989	83.5%
April	1137	2089	788	1327	-36.5%	1293	2282	72.0%
May	910	2999	1493	2820	-6.0%	453	2735	-3.0%
June	354	3353	521	3341	-0.4%	395	3130	-6.3%
July	357	3710	172	3513	-5.3%	287	3417	-2.7%
August	335	4045	437	3950	-2.3%	335	3752	-5.0%
September	326	4371	163	4113	-5.9%	52	3804	-7.5%
October	192	4563	220	4333	-5.0%	0	3804	-12.2%
November	165	4728	145	4478	-5.3%	0	3804	-15.1%
December	126	4854	249	4727	-2.6%	0	3804	-19.5%
Total Renewing Households	4854		4727			3804		
Total Member Households	**5304**		**5185**			**4126**		

MedStar adds revolutionary new ambulances

FWBP Staff Sep 17, 2018

FORT WORTH BUSINESS PRESS

http://www.fortworthbusiness.com/news/medstar-adds-revolutionary-new-ambulance/article_4a8a602e-baa7-11e8-b214-9f0d81c46b7a.html

MedStar began adding a new ambulance type at a "ribbon cutting" Sept. 17 at MedStar headquarters, 2900 Alta Mere Drive in Fort Worth.

For more than 30 years, MedStar has used Type 3 ambulances, a van type of ambulance with an attached patient compartment box, the organization said in a news release. But now a new Type 1 ambulance will be joining the fleet.

The new ambulances feature a floating patient compartment on a pickup chassis.
It is a $13.5 million commitment by MedStar. Sixty of the new ambulances will the deployed over the next five years in an ongoing ambulance refit and replacement plan.

No taxpayer money is involved since the Metropolitan Area EMS Authority (MAEMSA) operates without a tax subsidy.

The ambulances are manufactured by Demers Ambulances, a North American leader in ambulance manufacturing.

Demers designed a new Dodge Type 1 model after extensive input from MedStar's field crews, the news release said.

"We listened to our crews and our patients in designing our new ambulance platform," MedStar CEO Doug Hooten said in the release. "Our patient experience survey's reveal that the previous ambulances are not comfortable for our patients – the innovative suspension system for these ambulances will go a long way to keeping our patients and our crews safe and comfortable."

The ambulances include an integrated, under the hood generator that powers a dual high-performance air conditioning system, critical to providing mobile healthcare services to patients in the hot Texas environment.

"The cooling system on this ambulance is unlike anything I've ever experienced. It will definitely help our personnel, and our patients, beat the sweltering Texas heat," MedStar Chief Operations Officer Ken Simpson said.

Other features include"

- A specially designed 'floating' patient compartment to smooth the ride for patients and crew members when performing medical care in the back of the moving ambulance.
- Revolutionary crew seating that allows paramedics to complete patient care interventions while fully secured in a four–point harness for safety.
- A refrigerated safe to secure medications.
- Five live-view cameras on the ambulance, allowing the personnel to observe patient care, and provide an exterior view from the sides, front and rear of the ambulance.

The PIE Project: Revenue Analysis

To sharpen your business acumen, know where the money's coming from

By Matt Zavadsky, MS-HSA, EMT, and Kevin G. Munjal, MD, MPH

Over 2018 EMS World, in conjunction with the National Association of EMTs, will provide detailed implementation strategies for key recommendations of the Promoting Innovation in EMS (PIE) project. The PIE project utilized broad stakeholder involvement over four years to identify and develop guidance to overcome common barriers to innovation at the local and state levels and foster development of new, innovative models of healthcare delivery within EMS.

In our last column we considered cost analysis for traditional EMS delivery. This month we analyze the revenue side of EMS' traditional model before moving on to the concepts of cost and revenue for EMS innovation. This reflects the Promoting Innovation in EMS (P.I.E.) project's suggestion that EMS agencies should develop and grow their internal business acumen.

Cost Review

Let's use the scenario we built last month as the basis for a cost analysis. Recall that we calculated the cost of one ambulance 24/7 to be $650,000 annually, or $74.20 an hour. The EMS-related costs for a first-response engine were $50,000, or $5.71 per on-duty hour. Combining the ambulance and first-response unit, the annual cost for ambulance service was $700,000, or $79.91 per ambulance unit-hour. If the ambulance and engine responded to 1,000 EMS calls annually, the cost per response would be $700 ($700,000 ÷ 1,000). If they transported 700 patients to the hospital, the cost per transport would be $1,000 ($750,000 ÷ 700).

Now say Anytown, USA, operates a fire-based EMS service that provides ambulance and first-response services to a population of 50,000. For this scenario we also need to add the cost of medical direction and oversight, so say Anytown contracts with a local physician as its medical director for $50,000 annually. In 2017 Anytown responded to 3,000 EMS calls, sending an ambulance and first-response engine to every call. To meet demand, Anytown staffs three ambulances around the clock. It transported 2,250 people to the hospital, a transport ratio of 75%.

Matt Zavadsky is a featured speaker at EMS World Expo, Oct. 29-Nov. 2, 2018

Using this data, the overall cost analysis for Anytown to provide EMS services is:

- *Annual EMS costs:* $2,150,000 ($700,000 x 3 units, plus $50,000 for the medical director);
- *Cost per response:* $717 ($2,150,000 ÷ 3,000 calls);
- *Cost per transport:* $956 ($2,150,000 ÷ 2,250 transports);
- *Cost per unit-hour:* $81.81 ($2,150,000 ÷ 26,280 unit-hours [8,760 x 3 units]);
- *Cost per capita:* $43 ($2,150,000 ÷ 50,000 residents).

Sources of Revenue

There are a few sources of revenue to finance the costs of EMS delivery: tax revenue, fees for services, subscription payments, fund-raising/donations, and grants. For our purposes let's focus on the most common sustainable revenue sources, tax support and fee-for-service revenue.

In our scenario Anytown bills for EMS services. Its average bill for an ambulance transport is $1,000. This fee structure was approved by the city council based on a recommendation from the EMS chief to cover the cost of ambulance transport. Anytown contracts its billing services to EMS Revenue Inc., which receives a 6% fee for each dollar collected.

Ambulance fee-for-service (FFS) revenue can be broken down to these primary payer sources:

- Medicare, including managed Medicare;
- Medicaid, including managed Medicaid;
- Commercial insurance;
- Patients without insurance or parties responsible for paying the fee due to deductibles or coinsurance;
- Facilities obligated or willing under contract to pay for interfacility calls.

Medicare pays for medically necessary ambulance fees to covered destinations based on a national fee schedule, with adjustments based on geographic price indices. In most cases the ambulance supplier cannot "balance-bill" the patient for the difference between the ambulance bill and what Medicare pays, except for deductibles or coinsurance amounts. Medicaid also pays based on a state-approved fee schedule, with balance-billing not allowed.

Commercial insurance is interesting. While some payers pay billed charges, the insurer usually pays an amount based on a percentage of the "usual and customary" charge, with "usual and customary" determined by—you guessed it—the insurer. If the amount paid by the commercial insurer is less than the billed charge, the ambulance supplier

can balance-bill the patient, unless the supplier has entered into a network agreement to accept a negotiated rate as payment in full. This often results in a conflict: The payer believes the ambulance supplier charges too much, and the ambulance supplier feels the payer is paying too little. Either way, the patient is caught in the middle.

Patients without insurance can have a difficult time paying ambulance bills, so those bills are hard to collect. There are companies that monitor patient deductibles and advise ambulance agencies when the patient has met their deductible and an ambulance bill has a higher chance of being covered.[1]

Going back to our scenario, let's assume Anytown serves an urban/suburban population with a relatively common payer mix of Medicare, Medicaid, commercial insurance, and uninsured patients. Anytown does not do interfacility services, only 9-1-1. Based on a transport volume of 2,250, its payer source would typically look something like this:

	Trips	% of total
Medicare	839	37.3%
Insurance	293	13.0%
Medicaid	368	16.3%
Bill patient	751	33.4%
Total transports	2,250	100.0%

Now let's make the following assumptions regarding the amount generally paid per trip for each payer:

	Avg. Payment
Medicare	$400
Insurance	$800
Medicaid	$200
Bill patient	$100

In essence, Anytown billed $2.25 million in potential revenue and collected $718,192. But EMS Revenue Inc. gets 6% of each dollar collected, totaling $43,092, so this brings the total cash in the door to $675,100.

Recall that the annual cost of Anytown EMS is $2.15 million. Deducting the amount collected from the cost of service leaves a deficit of $1,474,900, which would generally be covered by the taxpayer in the form of a subsidy of $29.50 per capita.

Balancing the Books

If the city wanted to eliminate the taxpayer subsidy, it would need to collect $956 per transport. At the current payer mix and collection percentage, it would therefore need to charge approximately $3,600 per trip to generate a net collected amount per transport of $956. However, there are two confounding factors with this calculation. First, since Medicare and Medicaid pay a fixed amount, their reimbursement amounts would not change, regardless of what the service charges. Second, although some commercial insurers might pay billed charges, recall that most would only pay a percentage of what's "usual and customary," and it is likely the insurer would not consider $3,600 either. So those dollar amounts collected from Medicare, Medicaid, and most commercial insurers would likely change very little. Lastly, we have the private-pay patient. As we mentioned earlier, it is difficult to collect a $1,000 bill from private-pay patients—imagine trying to collect a $3,600 bill! It is also likely that a $3,600 ambulance bill would generate complaints.

Because of this revenue conundrum, it is unlikely Anytown could price itself out of a tax subsidy. Its only option may be cost containment. Let's assume a typical EMS call for Anytown consumes one hour of on-duty time ("task time"). Based on the response volume and number of staffed unit-hours, Anytown EMS is operating at a response unit-hour utilization (UHU) of 0.114 (3,000 ÷ 26,280). Essentially this means that 11.4% of the time units are staffed, they are committed to a potentially revenue-generating response. If Anytown's typical task time is 90 minutes, then its UHU is 0.171 (3,000 calls x 1.5 hours = 4,500 hours ÷ 26,280), meaning 17.1% of its on-duty time is committed to potentially revenue-generating activity. High-value EMS systems such as the public utility models in Fort Worth, Pinellas County (Fla.), and Oklahoma City operate at no taxpayer subsidy primarily due to the high efficiency of their systems: Some achieve a response UHU of 0.450, so 45% of the time units are on duty, they are on a potentially revenue-generating response.

High efficiency generally stems from a combination of flexible deployment strategy (staffing more units when call volume is high and fewer when it's low), combined with strategically posting available units in areas based on anticipated call volume and geography. This works very effectively in urban and suburban areas but is more difficult in rural systems with low call volumes and long task times. A note of caution here: The leaner you run the system, the less surge capacity the system will have to manage call volume spikes. In many high-performance/high-value EMS systems, a 0.450 UHU is considered optimal to balance competing priorities in a 9-1-1 environment. Systems that do a high volume of scheduled calls may be able to achieve a higher UHU.

Anytown EMS could enhance the cost efficiency of its system by conducting a detailed analysis of historical call volume patterns and readjusting its deployment based on the data. Perhaps it should run one ambulance 24/7 with one or two others during peak call times. Anytown could also increase revenue generation by conducting interfacility nonemergency calls.

The Bottom Line

Knowing both your cost of service delivery and the revenue mix for traditional EMS helps you understand your overall economic environment. Understanding the available capacity within your system could also help as you explore implementing innovative service delivery models.

REFERENCE

1. Solutions Group, https://www.solutionsgroup.net.

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COMMONLY USED ACRONYMS

A

ACEP – American College of Emergency Physicians

ACLS – Advanced Cardiac Life Support

AED – Automated External Defibrillator

ALJ – Administrative Law Judge

ALS – Advance Life Support

ATLS – Advanced Trauma Life Support

B

BLS – Basic Life Support

BVM – Bag-Valve-Mask

C

CAAS – Commission on Accreditation of Ambulance Services (US)

CAD – Computer Aided Dispatch

CAD – Coronary Artery Disease

CISD – Critical Incident Stress Debriefing

CISM – Critical Incident Stress Management

CMS – Centers for Medicare and Medicaid Services

COG – Council of Governments

D

DFPS – Department of Family and Protective Services

DHSH – Department of State Health Services

DNR – Do Not Resuscitate

E

ED – Emergency Room

EKG – ElectroCardioGram

EMD – Emergency Medical Dispatch (protocols)

EMS – Emergency Medical Services

EMT – Emergency Medical Technician

EMTALA – Emergency Medical Treatment and Labor Act

EMT – I – Intermediate

EMT – P – Paramedic

ePCR – Electronic Patient Care Record

ER – Emergency Room

F

FFS – Fee for service

FRAB – First Responder Advisory Board

FTE – Full Time Equivalent (position)

FTO – Field Training Officer

FRO – First Responder Organization

G

GCS – Glasgow Coma Scale

H

HIPAA – Health Insurance Portability & Accountability Act of 1996

I

ICD – 9 – International Classification of Diseases, Ninth Revision

ICD -10 – International Classification of Diseases, Tenth Revision

ICS – Incident Command System

J

JEMS – Journal of Emergency Medical Services

K

L

LMS – Learning Management System

M

MCI – Mass Casualty Incident

MI – Myocardial Infarction

MICU – Mobile Intensive Care Unit

MIH – Mobile Integrated Health

N

NAEMSP – National Association of EMS Physicians

NAEMT – National Association of Emergency Medical Technicians (US)

NEMSAC – National EMS Advisory Council (NHTSA)

NEMSIS – National EMS Information System

NFIRS – National Fire Incident Reporting System

NFPA – National Fire Protection Association

NIMS – National Incident Management System

O

OMD – Office of Medical Director

P

PALS – Pediatric Advanced Life Support

PHTLS – Pre-Hospital Trauma Life Support

PSAP – Public Safety Answering Point (911)

PUM – Public Utility Model

Q

R

RFQ – Request for Quote

RFP – Request for Proposal

S

SSM – System Status Management

STEMI – ST Elevation Myocardial Infarction

T

U

V

VFIB – Ventricular fibrillation; an EKG rhythm

W

X/Y/Z