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UNIVERSITY CONFERENCE

Tuesday, July 27, 2021

*COVID Pandemic in Miami – Best Practices Identified &
Lessons Learned*

Joseph Carr & Joe Britner

| Disclosures

- The presenters have no real or perceived conflicts of interest related to this presentation

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Learning Objectives

At the end of this session, participants should be able to:

1. Review the impact of the COVID-19 pandemic in Miami and East Florida
2. Identify strategies and best practices to provide quality patient care during the COVID-19 pandemic
3. Describe key learnings from the COVID-19 pandemic that can be applied to future emergency response planning

| What We'll Cover

- HCA in Miami
- COVID Impact in East Florida
- COVID Impact in Miami
- How did we get there?
- Best Practices
- Lessons Learned
- Questions

HCA Presence in Miami

Aventura Hospital and Medical Center

of Beds: 467

Avg. Daily Census: 380-400

Level E "Top 40"

Trauma Level 2

Highest COVID Inpatient #: 117



Mercy Hospital

of Beds: 488

Avg. Daily Census: 280-300

Level E

Women's Services

Highest COVID Inpatient #: 101



Kendall Regional Medical Center

of Beds: 447

Avg. Daily Census: 390-410

Level F "Top 40"

Trauma Level 1 / Burn

Highest COVID Inpatient #: 192



East Florida Division / HealthTrust CDC

of Beds: 4,323

Avg. Daily Census: 2,810

14 Acute sites (soon to be 15)

13 ASC's

96,000 Square Ft.

Med Surg, Rx, Implants

Bed Depot

Mobile Medical Equipment

COVID Impact in East Florida

20,893

Inpatient Lives Treated
Highest Number of COVID cases in HCA

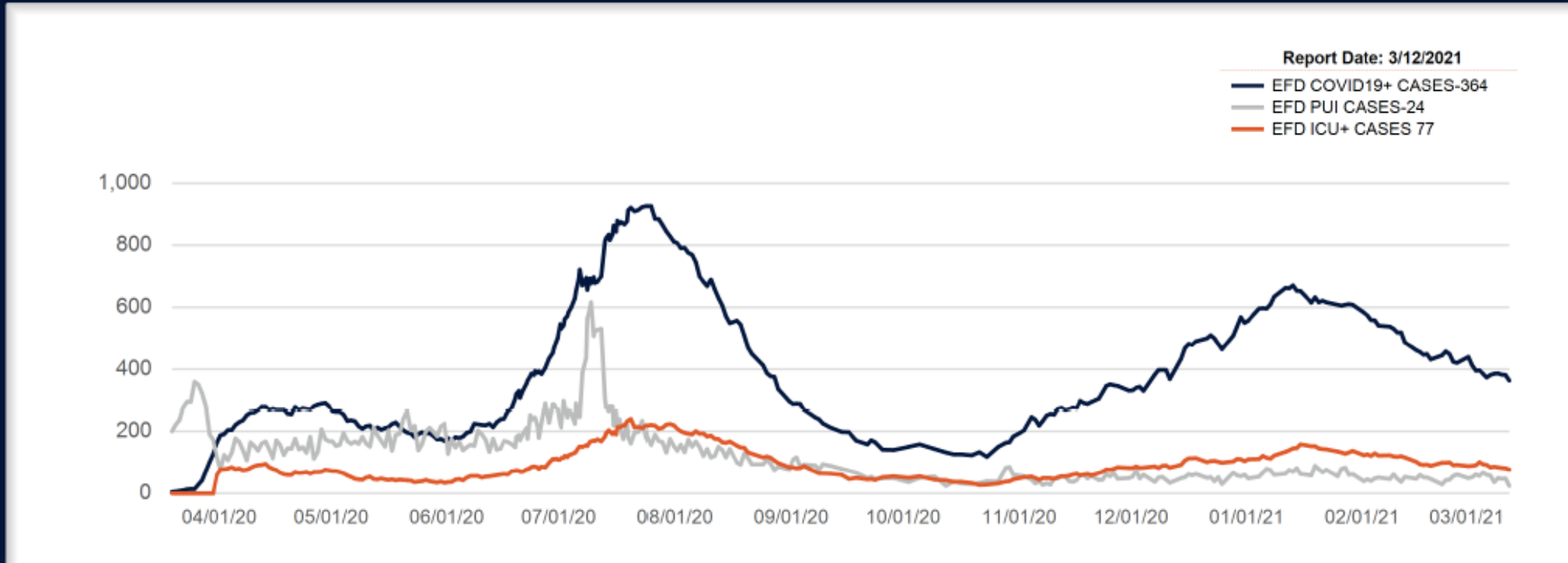
+1,065

Additional Inpatient Lives Saved
vs. National Mortality Rate

Quick Facts:

- Impacted by all 3 'waves'
- Highest in-patient COVID+ number was 927
- Positive test rates hit 24% in July 2020
- Positive cases for the state doubled in just 13 days

Daily In-House HCA-EFD PUI-COVID-ICU+ Cases - 3/12/2021



How did Miami become a Pandemic Epicenter?

Miami welcomes over 14,000,000 tourists per year / 2020 NY Migration

The Port of Miami is the busiest cruise port in the world

“Melting Pot”: 121 countries represented with limited government shutdown

Young population acted as super-spreader in 2020 summer months (+10,000 new daily positive cases for 2 weeks in July)

Cases	Deaths		
2.3M	37,265		
Location		Cases ↓	Deaths
Miami-Dade County	HCA East Florida	498K	6,472
Broward County	HCA East Florida	244K	3,079
Palm Beach County	HCA East Florida	147K	2,883
Hillsborough County		144K	1,832
Orange County		142K	1,310



COVID Through the Eyes of a Caregiver – Our Why!

“No matter how much falls on us, we keep plowing ahead. That’s the only way to keep the roads clear.”

~ Greg Kincaid





Best Practices

Communication Plan



PPE TASK FORCE

Daily calls to monitor usage, concerns, and best practices

(Who: CRDs, Division SC)

FACILITY LEADERSHIP UPDATES

Weekly Emails sent highlighting updates, tips, and education reminders with appropriate data included *(Who: DCRD)*

DAILY OPS HUDDLES

Daily Webex calls discussing backorders, new PPE SKU's, and operational action plans

(Who: SC COO, SCDs, CRDs)

FACILITY ROUNDING

Rounding in hospitals including COVID units talking to concerned caregivers and hospital leaders

(Who: Division IP, DCRD, SC COO)

CLINICAL OPS

Review of PPE, gov't stockpile items and Testing alternatives by clinical leaders

(Who: DCNE, Nursing Ops, IP, Quality, Division SC)

Division EOC & Facility Report Outs

Division COVID-19 EOC Daily Calls

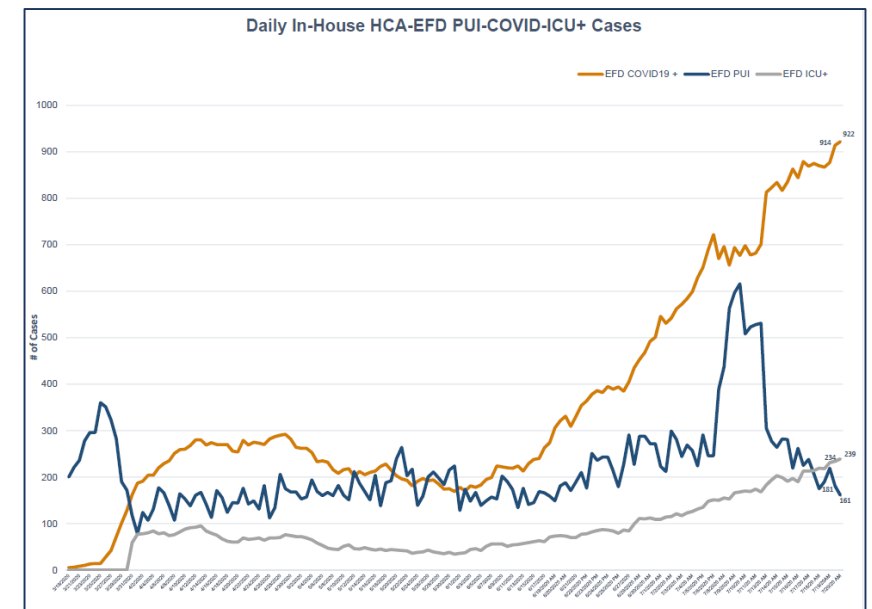
Reporting Tools shared with the Hospitals

Highlighting key areas

1. COVID Report Outs by Division Team
2. Nursing Ops Leadership
3. Staffing Shortages/Updates
4. Pharmacy
5. Supply Chain / PPE
6. Lab Operations
7. Marketing/Communication
8. Surgical Report Out

Hospital Name	7/20/2020 7:00 Current Positive IP	Current IP+ CDGR (7-day)
Mercy	96	4%
Kendall	186	2%
Aventura	111	3%
Westside	78	4%
Northwest	67	1%
Plantation	40	2%
University	39	-4%
Palms West	43	0%
JFK	100	-1%
JFK North	29	1%
Lawnwood	77	2%
St. Lucie	25	5%
Raulerson	20	3%
Highlands	11	5%
TOTAL EFD	922	2%
Market		
Dade	393	3%
Broward	224	1%
Palm Beach	172	0%
Treasure Coast	133	3%
TOTAL EFD	922	2%

7.17.20 AM	COVID-19 7 Day Market Trend	ICU Capacity % ICU License Beds Used	COVID-19 ICU Patients % COVID-19 of Total Licensed ICU Beds	% ICU Ventilators Used	PPE Days on-Hand (N-95; Level I Masks; Isolation Gowns)
EFD	4%	101%	49%	53%	N 95: 55 days on hand Level 1: 75 days on hand Gowns: 60 days on hand
Dade Market	4%	97%	51%	55%	2-3 days on hand maintained at facilities as per corporate strategy. PPEs distributed 7 days a week.
Broward Market	7%	102%	61%	56%	
Palm Beach Market	1%	84%	38%	55%	
Treasure Coast	4%	129%	46%	43%	



COVID-19 Response by the Numbers (2020)

PPE

“WE WON’T RUN OUT”

PPE Category	# of Units Issued
Iso Gowns	3,132,455
Exam/Surgeon Gloves	114,325,991
N95’s	626,952
Loop Masks	3,392,260
Headwear/ Footwear	1,406,325

ADDITIONAL EQUIPMENT MOVES

“ABOVE ALL ELSE... WHATEVER AND WHENEVER”

Equipment Type	# of Moves
Ventilators/Bi-paps	180
ECMO Moves	105
Mobile Morgues	14
HEPA Filters	51

WAREHOUSE IMPACT

“IT’S A PATIENT, NOT A PACKAGE”

Key Highlight	Results
# of Schedule Changes	5
Weekends in a Row	20
7-Day PPE Shipping	3 Months
Lost or Unidentified PPE	ZERO
Phys. Inventory Variance	Less than 0.5%

VACCINE LOGISTICS

“FASTER THAN AMAZON”

Key Highlight	Results
# of Doses Received	26,570
# of Courier Moves	71 (Dec 2020-Jan 2021)

PPE Warehouse Distributions / COVID+ PUI and Iso Patients

N95s



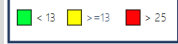
Year	2020										2021		Total
	May	June	July	August	September	October	November	December	Total	January	Total		
EAST FLORIDA DIVISION	0.84	0.91	1.01	1.24	1.60	2.02	1.65	1.57	1.24	1.33	1.33	1.25	
AVENTURA HOSPITAL & MEDICAL CENTER	0.66	0.73	1.10	1.77	2.34	2.16	1.58	1.83	1.35	1.33	1.33	1.35	
HIGHLANDS REGIONAL MEDICAL CENTER	0.30	0.92	0.49	0.79	1.08	1.77	0.94	1.06	0.89	1.02	1.02	0.91	
JFK MEDICAL CENTER	0.98	1.59	1.76	1.87	1.81	2.96	2.24	2.21	1.78	1.60	1.60	1.77	
JFK MEDICAL CENTER NORTH CAMPUS	0.23		0.13				0.10		0.07			0.07	
KENDALL REGIONAL MEDICAL CENTER	0.76	0.58	0.56	0.90	1.13	1.36	0.98	1.12	0.84	0.89	0.89	0.84	
LAWNWOOD REGIONAL MEDICAL CENTER	0.85	0.84	1.42	1.86	2.41	1.58	2.63	1.16	1.50	1.24	1.24	1.48	
MERCY HOSPITAL	0.26	0.41	0.55	0.92	1.15	2.03	1.56	1.57	0.89	1.55	1.55	0.96	
NORTHWEST MEDICAL CENTER	1.52	0.82	1.38	1.37	2.52	2.66	1.55	1.73	1.52	1.46	1.46	1.51	
PALMS WEST HOSPITAL	1.40	1.01	1.27	1.55	1.42	2.01	1.65	1.96	1.46	1.30	1.30	1.44	
PLANTATION GENERAL HOSPITAL	1.53	1.56	1.37	1.25	2.31	4.29	3.00	2.94	1.89	2.57	2.57	1.93	
RAULERSON HOSPITAL	0.00	0.80	0.25	0.13	0.63	0.85	1.14	0.98	0.52	0.56	0.56	0.52	
ST. LUCIE MEDICAL CENTER	1.06	1.38	1.52	1.21	2.02	2.00	1.54	1.82	1.52	1.83	1.83	1.54	
UNIVERSITY HOSPITAL	0.46	0.64	0.98	1.26	1.43	2.03	1.98	1.67	1.24	1.92	1.92	1.30	
WESTSIDE REGIONAL MEDICAL CENTER	0.71	0.52	0.62	0.97	1.41	1.72	1.65	1.45	0.99	1.28	1.28	1.01	
Total	0.84	0.91	1.01	1.24	1.60	2.02	1.65	1.57	1.24	1.33	1.33	1.25	

Exam Gloves



Year	2020										2021		Total
	May	June	July	August	September	October	November	December	Total	January	Total		
EAST FLORIDA DIVISION	117	114	117	108	133	117	108	119	117	102	102	115	
AVENTURA HOSPITAL & MEDICAL CENTER	122	105	128	134	121	131	108	132	123	110	110	122	
HIGHLANDS REGIONAL MEDICAL CENTER	163	143	170	143	191	135	149	129	151	102	102	146	
JFK MEDICAL CENTER	110	119	116	118	124	116	122	128	119	105	105	118	
JFK MEDICAL CENTER NORTH CAMPUS	68	85	67	53	66	53	72	55	65	63	63	65	
KENDALL REGIONAL MEDICAL CENTER	134	138	118	111	124	123	111	121	122	85	85	118	
LAWNWOOD REGIONAL MEDICAL CENTER	94	92	99	103	107	101	91	108	99	90	90	99	
MERCY HOSPITAL	131	112	130	96	118	102	98	104	111	116	116	111	
NORTHWEST MEDICAL CENTER	165	165	126	114	362	171	114	127	164	125	125	161	
PALMS WEST HOSPITAL	116	90	121	95	111	107	102	133	109	94	94	108	
PLANTATION GENERAL HOSPITAL	111	117	122	114	143	133	142	125	125	120	120	124	
RAULERSON HOSPITAL	126	119	125	135	126	121	124	128	126	90	90	122	
ST. LUCIE MEDICAL CENTER	94	99	117	100	117	116	119	126	112	94	94	110	
UNIVERSITY HOSPITAL	88	96	104	83	95	78	75	99	90	85	85	89	
WESTSIDE REGIONAL MEDICAL CENTER	145	127	138	119	145	154	131	145	138	132	132	137	
Total	117	114	117	108	133	117	108	119	117	102	102	115	

Iso Gowns



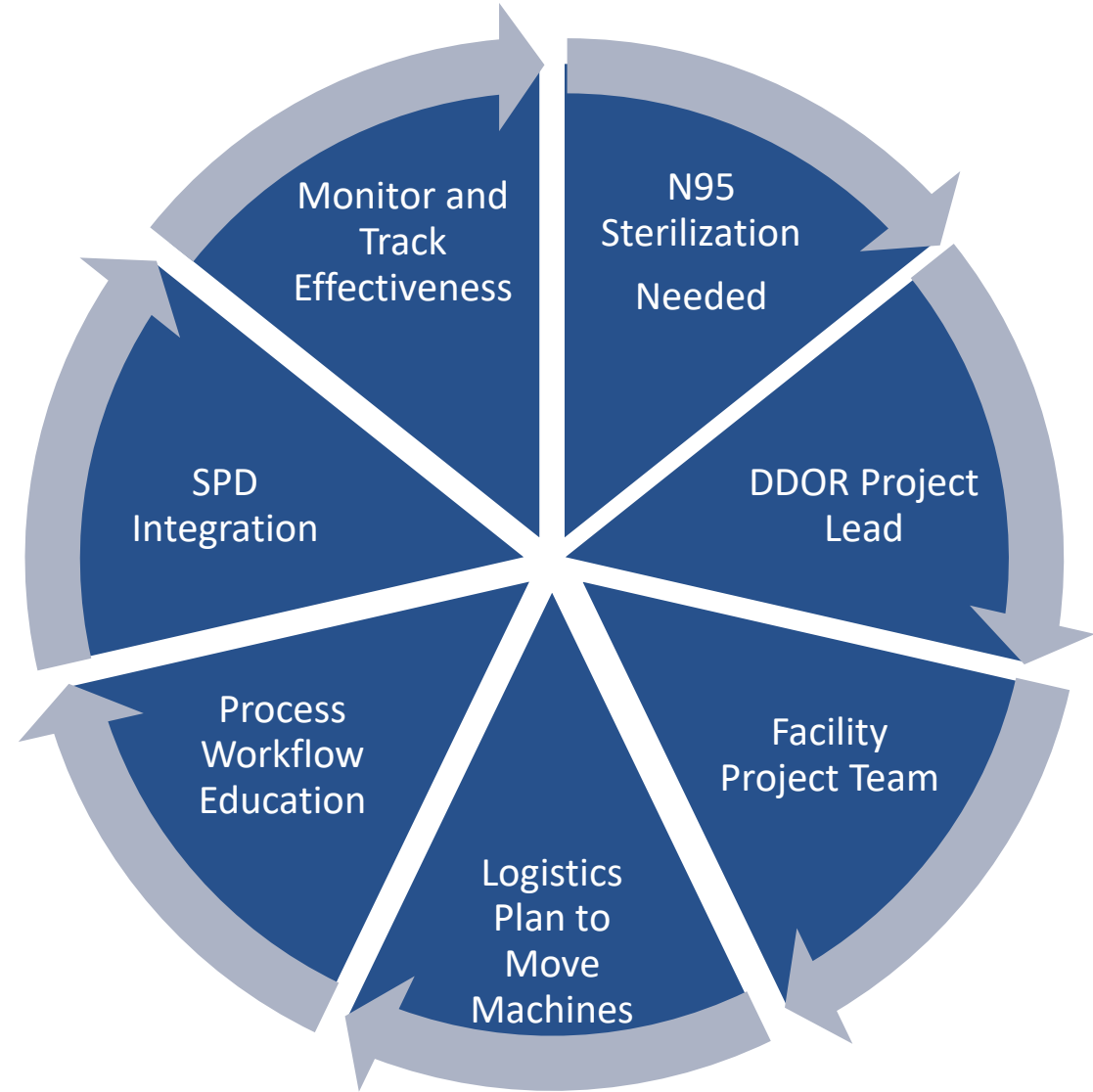
Year	2020										2021		Total
	May	June	July	August	September	October	November	December	Total	January	Total		
EAST FLORIDA DIVISION	6.5	6.1	5.5	3.1	5.6	8.1	6.3	7.0	5.7	6.1	6.1	5.7	
AVENTURA HOSPITAL & MEDICAL CENTER	6.4	5.8	6.8	0.4	4.8	7.0	4.9	6.5	5.4	4.5	4.5	5.3	
HIGHLANDS REGIONAL MEDICAL CENTER	7.1	8.0	6.6	5.6	6.0	4.9	6.6	7.5	6.5	4.1	4.1	6.1	
JFK MEDICAL CENTER	7.5	8.5	5.3	6.4	9.2	8.9	6.9	7.7	7.3	7.0	7.0	7.3	
JFK MEDICAL CENTER NORTH CAMPUS	2.9	4.2	2.8		0.1			1.8				1.6	
KENDALL REGIONAL MEDICAL CENTER	6.2	4.8	4.0	3.1	2.2	8.8	5.5	5.3	4.6	3.0	3.0	4.4	
LAWNWOOD REGIONAL MEDICAL CENTER	5.8	6.3	6.2	2.9	8.4	8.3	8.3	8.8	6.3	7.6	7.6	6.4	
MERCY HOSPITAL	6.2	5.0	4.3	0.5	3.0	5.8	4.4	4.9	4.1	6.6	6.6	4.4	
NORTHWEST MEDICAL CENTER	6.0	4.3	7.8	8.3	7.3	5.8	7.6	6.9	7.1	6.8	6.8	7.1	
PALMS WEST HOSPITAL	7.9	6.4	3.8	3.6	6.7	7.6	5.5	7.0	5.8	6.0	6.0	5.8	
PLANTATION GENERAL HOSPITAL	9.4	6.6	4.8	1.4	8.9	7.2	5.4	7.3	5.6	9.2	9.2	5.9	
RAULERSON HOSPITAL	14.5	12.7	10.2	2.5	3.7	13.9	9.3	11.9	8.5	11.4	11.4	8.9	
ST. LUCIE MEDICAL CENTER	6.2	3.3	5.9	4.9	7.0	9.6	8.8	10.4	6.4	7.4	7.4	6.5	
UNIVERSITY HOSPITAL	4.0	6.4	5.0	1.8	7.3	9.3	9.0	9.6	5.9	8.2	8.2	6.2	
WESTSIDE REGIONAL MEDICAL CENTER	4.6	6.2	6.5	0.5	2.2	7.5	5.8	7.5	5.0	7.1	7.1	5.1	
Total	6.5	6.1	5.5	3.1	5.6	8.1	6.3	7.0	5.7	6.1	6.1	5.7	



Above all else, we are committed to the care and improvement of human life.

Reprocessing

Ultraviolet Light N95 Mask Reprocessing



ECMO Coordination

The ECMO machine replaces the function of the heart and lungs

- **Why is ECMO used?**
- Lungs can't provide enough oxygen to the body
- Lungs cannot get rid of carbon dioxide
- Heart cannot pump enough blood to the body

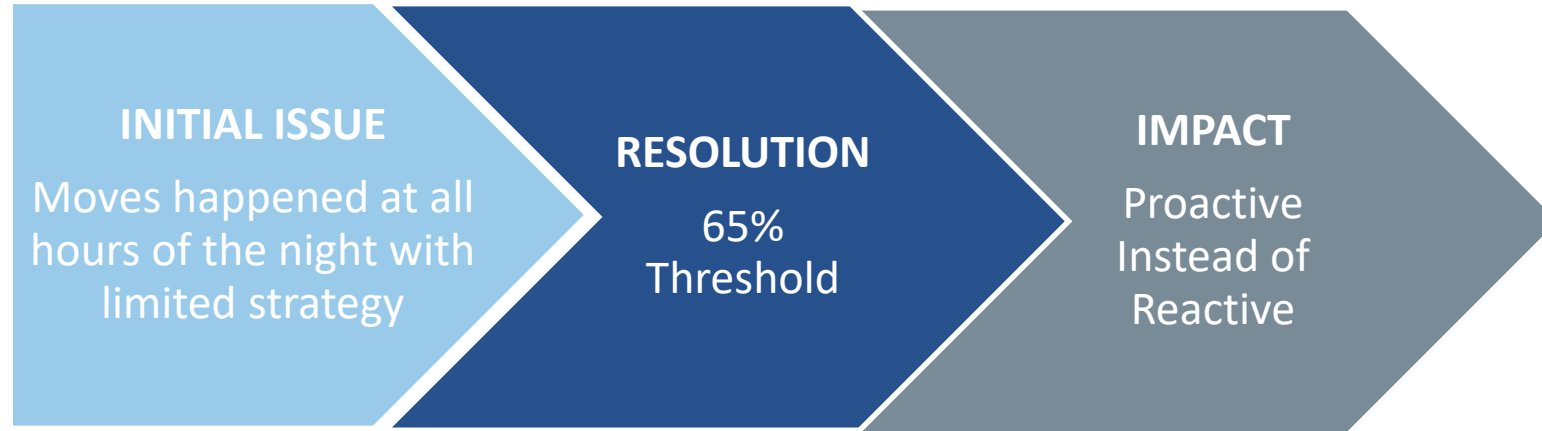
East Florida ECMO Facts

# of Owned Units Prior to COVID	11
Highest ECMO Census	14
# of ECMO equipment moves in Division	105
Built ECMO kits into the warehouse inventory	



JFK ECMO VOLUMES:	2020	2021
	61	45

Vent Allocation Strategy:



INITIAL CONCERN:

Very reactionary with vent management (Requests coming at all hours of the night and weekends)

RESOLUTION:

- Set strategy to request ventilator moves when facility is at 65% utilization to provide buffer
- Email sent from facility to DCMO, DCNE, DCFO, DCSD, SC COO, and Division Respiratory Lead
- Division validation of need compared to inventory availability
- DCSD and SC COO manage logistics of Division pool and rentals across the sites
- Utilization of alternative courier vendors to meet off-hour needs



Lessons Learned

| PPE & Lab Integration

PPE Availability & Customer Demand

- **ISSUES:**
 - Vendors could not meet demand and even discontinued making options
 - Not all customers ordered from SC
- **BARRIERS TO SUCCESS:**
 - Main N95 vendor (80% of historical usage) pulled product from production shortly after Pandemic started
 - 10x + Demand from several different customers
 - IRL, Physicians, ASC's, StaRN, etc.
- **WHAT WOULD WE DO DIFFERENTLY?:**
 - Align all parties to procure from warehouse
 - Stock heavy volume supplies in warehouse so non-acute sites don't have to order direct from vendor (\$\$)

Lab Integration

- **ISSUE:**
 - Had to find a way to drive down PUIs in our Division to enable co-horting opportunities while limiting potential exposure
- **BARRIER TO SUCCESS:**
 - Swab kit backorders forced us to change clinical collection process several times throughout the Pandemic
 - Swab kits → Nasal Swabs with VTM → Oral Swabs with VTM
 - IRL Capacity constraints with machines and manpower
- **WHAT WOULD WE DO DIFFERENTLY?:**
 - Focused collaboration with IRL and Division Leadership
 - Great support from Corp Clinical SC but constantly played catch-up
 - Struggled at first with IRL external customer needs

Vent Standardization & ECMO Clinical Guidelines

Vent Standardization

- **ISSUE:**
 - Different sites used different ventilators and they were only trained on specific ones
- **RESOLUTION:**
 - Work with Respiratory leaders to align education to be able to use different vendors while standardizing when possible



ECMO Clinical Use Guidelines

- **ISSUES:**
 - Standard of care suggests having a back-up ECMO unit for each unit in use
 - We opened the door to potential risk with having to move around units from site to site
 - Some sites required the need to have an ECMO unit available for open heart cases creating competing priorities
- **RESOLUTION:**
 - All sites worked together and Division was standardized with one ECMO model
 - Secured 3 additional units from Corporate Bulk buy
 - Additional rental units were brought in to support
 - Working with DCMO to potentially increase stock to match suggested standard of care

Thank you...

Joe Britner, MBA

Joseph Carr, RN, MBA

Take advantage of these valuable member resources

- Clinical Evidence Reviews
- Product Feature Summaries & Technology Reviews
- Clinical Question Documents
- Conversion Guides
- Live & On-demand Webinars
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