



DOWNTIME PREPAREDNESS & TECHNOLOGY RELATED RISK

*ANGIE LUCAS, MSN, RN, CCRN-K, CPHRM
MANAGER, RISK AND SAFETY
GOSHEN HEALTH*

THE PROBLEM

Impact
to
Safety

Impact to
Continuity of
Care

Impact to
Security

State finds hundreds of medication errors linked to healthcare technology

Hidden FDA Reports Detail Harm Caused By Scores Of Medical Devices

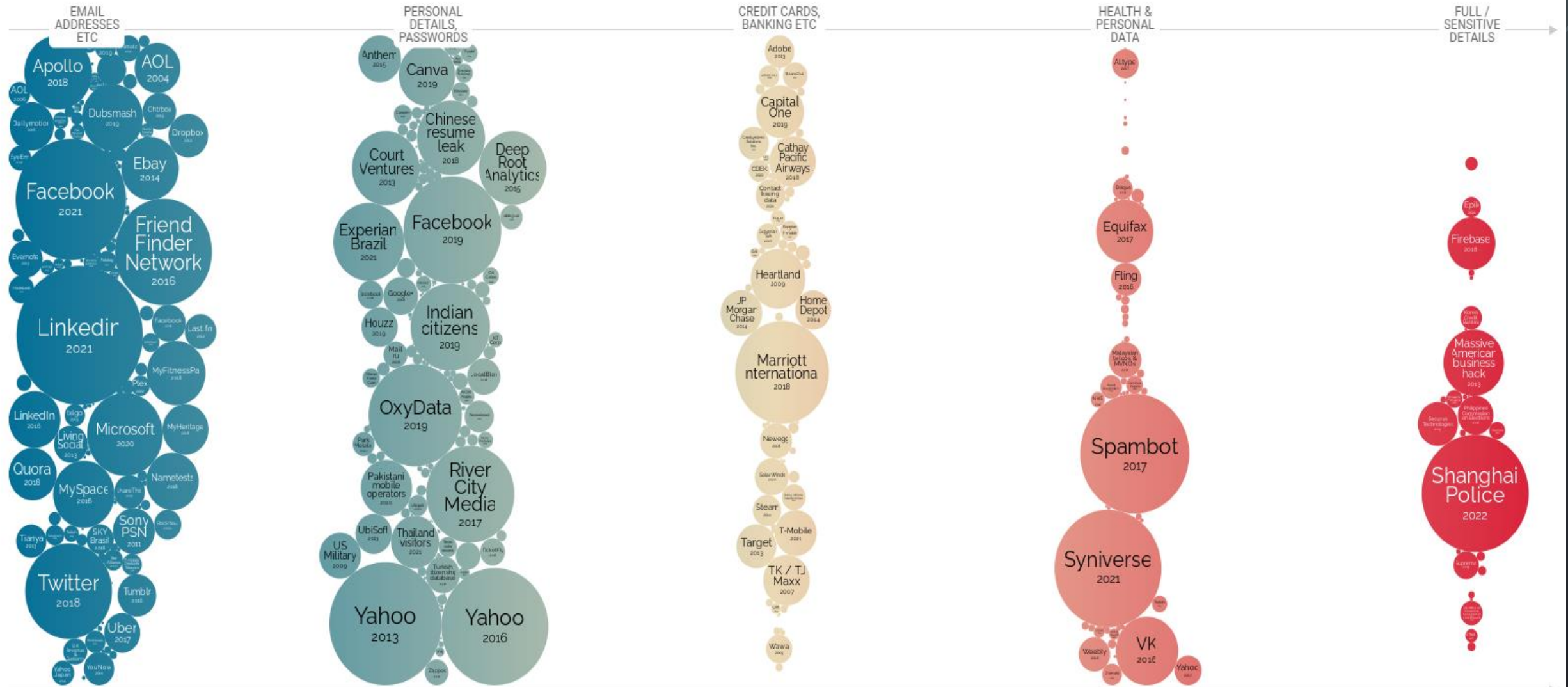
Researcher predicts spike in computer-related injuries in medical workers

Robotic surgery linked to 144 deaths in the US



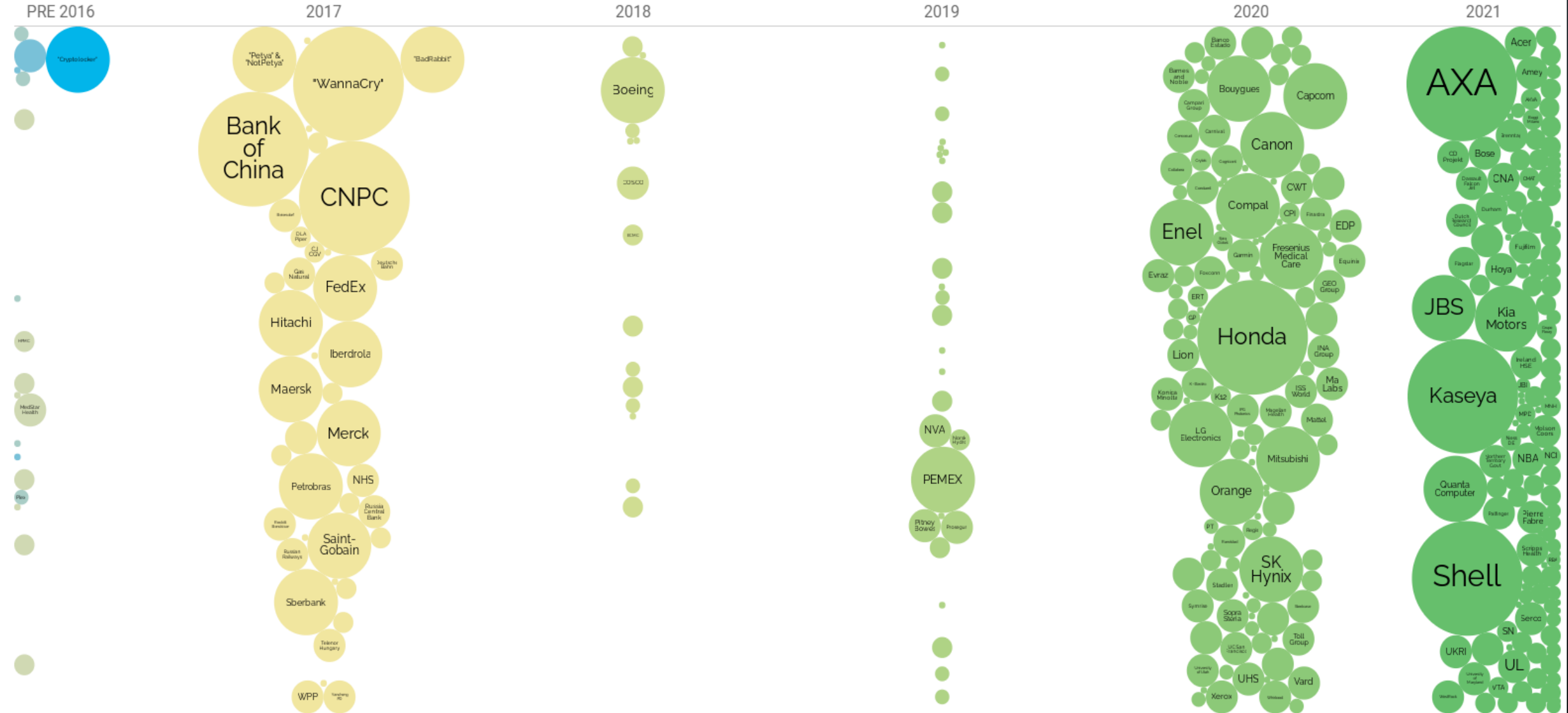
DOWNTIME AND RANSOMWARE ATTACKS

Data Breaches by data sensitivity



Ransomware Attacks BETA

size = size of organisation

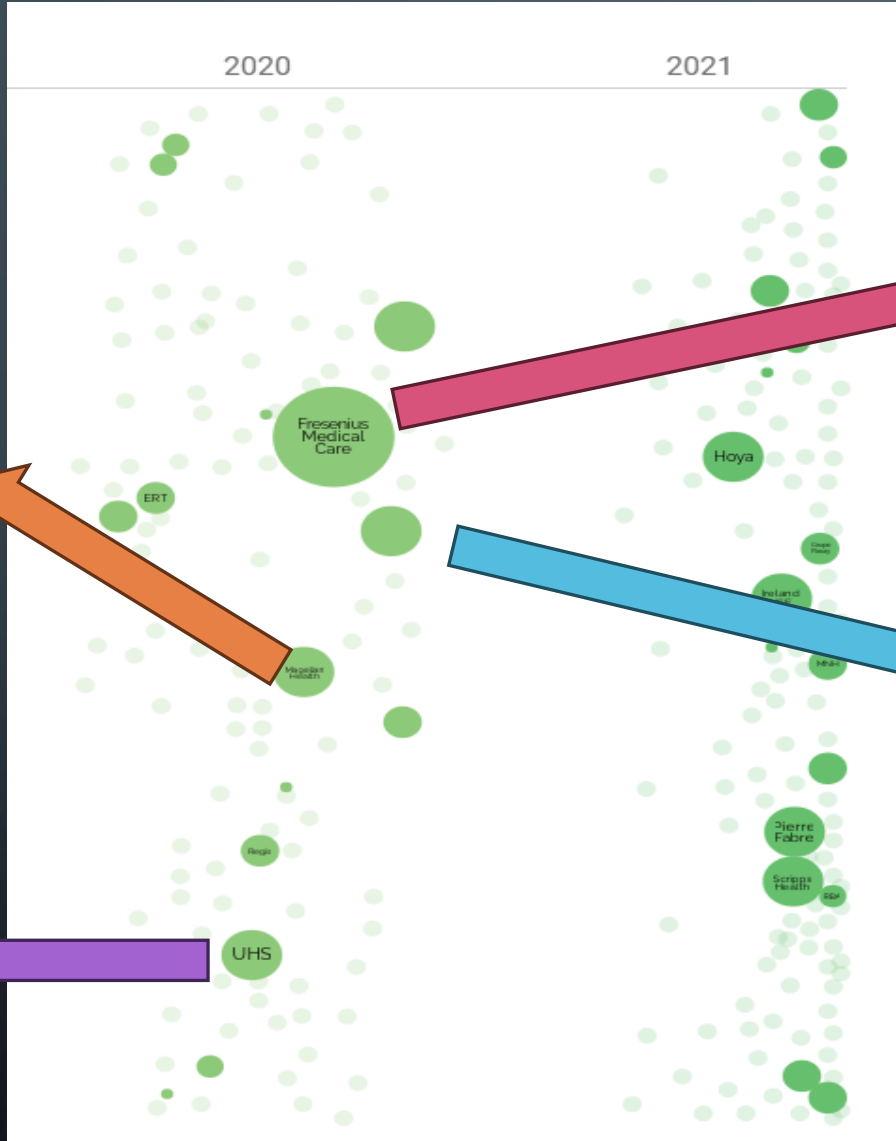


What's the problem?

Ransomware Attacks in Healthcare

May 2020- Fresenius

Company Name	Employee	Gender	Salary	Country
Fresenius Medical Care NULL	NULL	M	0:00:00	Crna Gora
Fresenius Medical Care Zoran	M	0:00:00	Srbija	
Fresenius Medical Care Mili??	M	:00:00	Srbija	
Fresenius Medical Care Vojislav	M	00:00	Srbija	
Fresenius Medical Care Iare	M	00:00	Hrvatska	
Fresenius Medical Care Milan	M	00:00	Srbija	
Fresenius Medical Care Igor	M	0:00:00	Hrvatska	
Fresenius Medical Care Rade	F	0:00:00	Srbija	
Fresenius Medical Care Slobodan	F	0:00:00	Srbija	
Fresenius Medical Care Jovanka	F	00:00	86.3	
Fresenius Medical Care Bo??idar	F	:00:00	Srbija	
Fresenius Medical Care Vera	M	0:00:00	Srbija	
Fresenius Medical Care Sanije	M	0:00:00	Srbija	
NATRIJUM Detalji : Baralgin	F	00:00	Srbija	
Fresenius Medical Care Rajko				
Fresenius Medical Care Ivica				
Fresenius Medical Care Marija				



May 2020- Magellan Health

“Logins, personal information and tax info were all exfiltrated ahead of the ransomware attack, thanks to a phishing email.” and “names, addresses and employee ID numbers. Some W-2 or 1099 details such as Social Security numbers or Taxpayer ID numbers” of employees

UHS
Universal Health Services
ransom/cost: \$67m
[click to read more](#)

ExecuPharm
one of the world's largest suppliers of research services to pharma companies
Since the outbreak of COVID-19, many ransomware groups decided to show mercy and took a pledge to not attack medical and healthcare facilities, nursing homes and charities but that ExecuPharm would not qualify since they are "are the only ones who benefit from the current pandemic." The company had refused to pay the ransom despite negotiations and the stolen data was leaked.
[click to read more](#)

IMPACT

Ability to review, send, receive orders, test results, medication review

Surgery and procedural scheduling, receiving orders and pre-anesthesia testing ability. Prior authorizations.

Outpatient services ability to view schedule, patient information, orders and patient contact information. Infusion Centers: Blood transfusions, Chemotherapy treatments

Ancillary Services: Rehabilitation, Pharmacy, Care Coordination, Chaplain, Food Services, Registration, Imaging, Laboratory, Pathology, Blood Bank

Billing, Coding, Medical Records, Medical Staff, Staffing, Ability to take payments (also in cafeteria)



CONSIDERATIONS RELATED TO MEDICAL RECORDS

- EMR “Triggers” and screening triggers
- Ability to audit medical record accesses
- Security of medical record (paper versus computer)
- Incomplete documentation

CONSIDERATIONS RELATED TO DOWNTIME

❑ Do you have redundant systems for information?



- What is available to use if a specific system is down?
- Where else can information be obtained?
- Who knows this is available?
- Are the steps to this back-up process in a procedure, policy or standard work?
- Who has access to the systems?
- Is there a master list of all systems or programs used?
Which ones are critical to operations in different areas?

CONSIDERATIONS RELATED TO DOWNTIME

❑ What downtime documentation processes are in place?

- Has each department established a downtime process that is well documented in a policy, procedure or standard work?
- Are there competencies related to downtime documentation? How often are these reviewed? Only at orientation?
- Are the forms available current and accurate? Often downtime documents are not updated as EMRs are updated.
- What usual and customary documentation is currently occurring in each department? Does each department have the same documentation available for downtime as is available in the electronic system?
- How are the documents obtained? What if your network is down?
- Consider Colleague turnover.
- Do the Colleagues KNOW how to document in a standardized way?



CONSIDERATIONS RELATED TO DOWNTIME

☐ Communication



www.giphy.com

- What does the communication tree look like?
- Who are the stakeholders?
- How does information get to end users?
- How are issues communicated to leadership during downtime?
- Who is the “captain of the ship” when downtime occurs? Is Incident Command utilized? Who is making decisions?
- Methods of communication (email, phone, secure messaging)

CONSIDERATIONS RELATED TO DOWNTIME

☐ Recovery Process



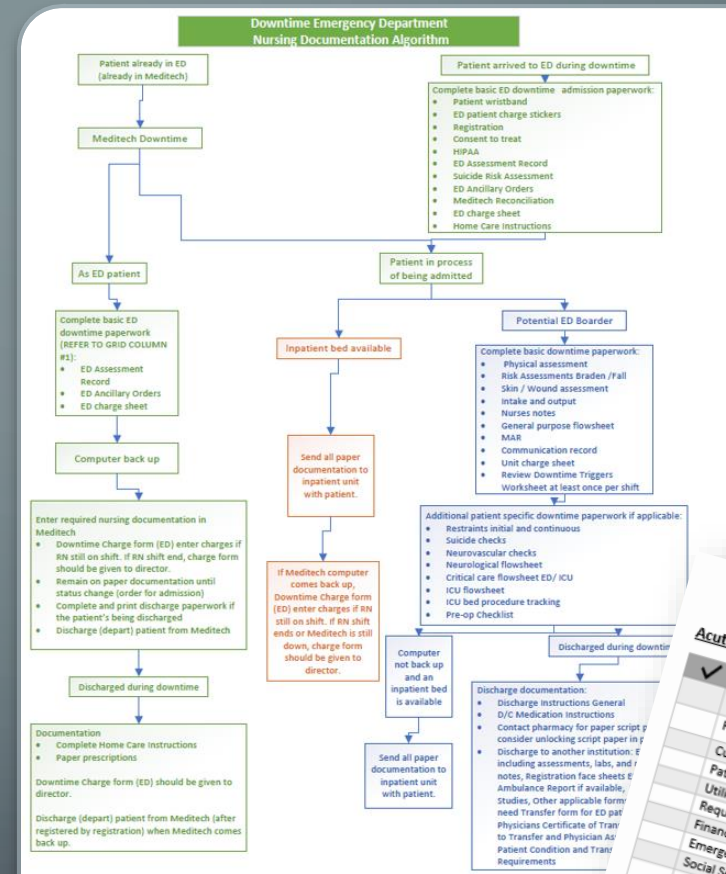
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- Often missing from policies and procedures
- What is needed to get back to normal procedures and processes?
- What is the trigger to start the recovery process?
- Do the policies and procedures address downtime that occurs between shifts?
- Where are the policies located? What if the network is down? Can everyone get to the needed resources easily?
- What must be entered electronically and what can remain on paper documentation?

CONSIDERATIONS RELATED TO DOWNTIME

Miscellaneous

- Medication dispensing: Increase in overrides
- Ability to print
- Mock drills
- Are the policies and procedures easy to understand? Downtime is stressful. Use algorithms.
- Consider all areas (physician offices, administration, etc.)
- Cyber insurance policies
- Consider forming a “downtime planning committee” (jointcommission.org)



Meditech Downtime Triggers- Page 1/4

Acute Care Coordination	Trigger	Date notified / Initials
<input checked="" type="checkbox"/>	Abuse (emotional, physical and sexual)	
	Fetal Demise	
	Current suicidal or homicidal ideation	
	Patient is on home oxygen	
	Utilization Review referral	
	Request Advanced Directive Information	
	Emergency Detention	
	Social Service Needs (Ex: Community Resources)	
	Postpartum EPDS score greater than 10	
	Mental health evaluation	
	Discharge Needs:	
	<input type="checkbox"/> Hospice	<input type="checkbox"/> Skilled Nursing Facility
	<input type="checkbox"/> Home Health	<input type="checkbox"/> Home Medical Equipment
	<input type="checkbox"/> Therapy Services	<input type="checkbox"/> Other Community Services
<input checked="" type="checkbox"/>	Cardiopulmonary Services	
	Patient has home Bipap, CPAP or Tracheostomy	
	Patient on mechanical ventilation, Bipap or CPAP	
	Orders for RT administered medications	



**PATIENT CARE
TECHNOLOGY**

PURCHASING NEW EQUIPMENT OR TECHNOLOGY

Ensuring competency

Compatibility with software or other systems already in place

Wifi- Can the system support the additional technology?

Initial and ongoing training (ex: beds)

Back-up plans for system downtimes (ex: patient info boards)

Perform FMEA

Do not underestimate the risk to safety (Patients, Colleagues)

Ease of use

Trust with technology

Unexpected vendor downtime

Are there established processes in place to vet, approve, educate and implement new technology?

EXISTING TECHNOLOGY

Sequester and tag out/lock out competency

Ongoing training (low-volume, high-risk and complex technology)

Age of equipment, obsolete

Ongoing action plans and financial support for replacement

Verify routine maintenance

Equipment use as intended. Are there barriers? Why are there workarounds?

Evaluation of financial costs or contracting

Downtime plans for high-risk technology (newborn alarms, badge access, telemetry, IV pumps, medication distribution cabinets)

Medication and supply order systems (vendor systems)

Generator usage and procedures

REFERENCES

- **“Healthcare Giant Magellan Struck with Ransomware, Data Breach.”**
<https://threatpost.com/healthcare-giant-magellan-ransomware-data-breach/155699/>
- **www.giphy.com**
- **www.Informationisbeautiful.net**
- **Sentinel Event Alert: Preserving Patient Safety After a Cyberattack, August 15, 2023,**
www.jointcommission.org



QUESTIONS?