HARRISHEALTH SYSTEM

BOARD OF TRUSTEES

Joint Conference Committee

Thursday, January 12, 2023
11:30 A.M.

The meeting will be conducted via Zoom and may be viewed online at:
http://harrishealthtx.swagit.com/live

Mission

Harris Health is a community-focused academic healthcare system dedicated to improving the health of those most in need in Harris County through quality care delivery, coordination of care, and education.

AGENDA

I.	**Call to Order and Record of Attendance**	**Dr. Andrea Caracostis**	**2 min**
II.	**Approval of the Minutes of Previous Meeting**	**Dr. Andrea Caracostis**	**2 min**
	• Joint Conference Committee Meeting – November 10, 2022		
III.	**Medical Staff Engagement**	**Mr. Louis Smith**	**10 min**
	A. Strengthening Medical Staff Involvement: Operations and Service Lines		
	1. Harris Health Service Line Strategy Update ***– Ms. Amineh Kostov***		
IV.	**Governance and Culture**	**Mr. Louis Smith**	**10 min**
	A. Goal Update Between Harris Health and UTH/BCM ***– Ms. Monica Carbajal***		
V.	**Items Requiring Periodic Updates/Discussion**	**Dr. Andrea Caracostis**	**5 min**
	A. Harris Health Medical Executive Board Leadership Changes		
VI.	**Special Items**	**Mr. Louis Smith**	**15 min**
	A. Electronic Health Record and Information Technology Disaster Planning ***– Mr. Jeffrey Vinson and Mr. Ron Fuschillo***		
VII.	**Adjournment**	**Dr. Andrea Caracostis**	**1 min**

HARRIS HEALTH SYSTEM
MINUTES OF THE BOARD OF TRUSTEES
JOINT CONFERENCE COMMITTEE MEETING
November 10, 2022
8:00 AM

AGENDA ITEM	DISCUSSION	ACTION/RECOMMENDATIONS
I. Call to Order and Record of Attendance	Dr. Andrea Caracostis, Chair, called the meeting to order at 8:02 a.m. It was noted that a quorum was present and the attendance was recorded. Ms. Marks announced that only participants scheduled to speak have been provided dial in information for the meeting. All others who wish to view the meeting may access the meeting online through the Harris Health website: http://harrishealthtx.swagit.com/live.	
II. Approval of the Minutes of Previous Meeting Joint Conference Committee Meeting – May 12, 2022		**Moved by Ms. Alicia Reyes, seconded by Dr. Arthur Bracey, and unanimously approved the minutes of the previous meeting.**
III. Medical Staff Engagement		
A. Strengthening Medical Staff Involvement: Operations and Service Lines **1.** Update Regarding Medical Staff Engagement Activities	Dr. Steven Brass, Executive Vice President & Chief Medical Executive, presented an update on Medical Staff Engagement activities. He shared that November 2021, the National Research Center (NRC) conducted a physician satisfaction survey to determine areas of improvement. Harris Health also conducted key interviews with physicians' leaders to further validate the findings. Dr. Brass reported over 200 comments which were structured into the following categories: 1) Information Technology, 2) Equipment/Supply Chain, 3) Clinical Operations, 4) Staffing, 5) Physician – Specific Issues, 6) Scheduling, 7) Communications, 8) Culture, and 9) Others. Based upon the survey results, Dr. Brass provided a high-level overview of completed and ongoing initiatives by the medical staff, some of which include new onboarding and annual physician orientation, improvement to interpreter services, 30% vacation rule, physician lounge, the need for more case	**As Presented. Dr. Arthur Bracey recused from discussions related to Baylor College of Medicine.**

AGENDA ITEM	DISCUSSION	ACTION/RECOMMENDATIONS
	management, improvement in culture, nursing shortages, and physical therapy staffing. Dr. Arthur Bracey inquired regarding the refresh rate and engagement of medical staff as it relates to order set revisions. Dr. John Foringer, Chair, Medical Executive Board, stated that the medical staff routinely review the order sets every two years. Dr. Caracostis inquired regarding continuity of care for patients within the outpatient setting. Dr. Brass shared that he will return to the committee with the statistical data. Dr. Jennifer Small, Executive Vice President, Ambulatory Care Services, stated that there is a resident Primary Care Physician (PCP) field that is being utilized in the scheduling system in order to have patients scheduled back to their resident PCP. The committee discussed the continuity of care among the attending physicians, nurse practitioners, residents and fellows. A copy of the presentation is available in the permanent record.	
IV. Governance and Culture		
A. Goal Alignment Between Harris Health and UTH/BCM	Mr. Louis Smith, Senior Executive Vice President & Chief Operating Officer, delivered an update regarding Goal Alignment Between The University of Texas Health Science Center at Houston (UTHealth – Houston) and Baylor College of Medicine (BCM). He shared that there are four (4) areas of focus which includes: 1) patient safety, 2) patient experience, 3) value and 4) service lines. Mr. Smith explained that each category is comprised of two (2) goals specific to acute care and ambulatory environments. He shared that there has been great collaboration between Harris Health, UT Health-Houston and BCM as it relates to service lines, identifying gaps and opportunities as well as setting goals. Dr. Foringer stated that he is very pleased with the goals and collaborative efforts. Mr. Smith stated that he intends to report back to the committee during the first quarter of the calendar year. Dr. Foringer mentioned that Harris Health is producing data that is very useful and enables physicians to actually interpret and act upon. Dr. Martha Mims, Vice Chair, Medical Executive Board, echoed Dr. Foringer's sentiments.	**As Presented.**

AGENDA ITEM	DISCUSSION	ACTION/RECOMMENDATIONS
B. Consideration of Approval of the Revisions to the Medical Staff Bylaws	Dr. Mims presented the revisions to the Medical Staff Bylaws. The revisions are listed as follows: • **Removal of all references to "Quentin Mease Hospital Campus" throughout the Medical Staff Bylaws** o This hospital campus no longer exists at Harris Health and the building where this hospital campus was located is currently being remodeled and will be a part of Ambulatory Care Services when it reopens. • **Removal of all references to "Registered Dietician" throughout the Medical Staff Bylaws** o Registered Dieticians will provide services through an approved protocol and ordering process in Epic, instead of being granted clinical privileges through the medical staff process. • **Article III, Section 5 – Liability Coverage** o Revised language related to liability insurance carried by medical staff to reference that liability coverage is determined by the applicable contractual agreement. • **Article XI – Chief Medical Executive** o This article was revised to: (1) Update the position title from "Chief Medical *Officer*" to "Chief Medical *Executive*"; (2) clarify that the Chief Medical Executive may be, but is not required to be, a member of the Active Staff; (3) clarify that the Chief Medical Executive is the executive champion for the Governing Body (Harris Health's Board of Trustees) Quality Committee; and (4) clarify that the Chief Medical Executive, or his designee, serves as a voting ex-officio member of all Medical Staff Committees, except the Practice Improvement (formerly Peer Review) Committee and the Professionalism and Well-Being Committee. • **Article XIV – Committees** o This article was revised significantly in collaboration with the Chairs and Vice-Chairs of the various Medical Staff Committees.	**Moved by Ms. Alicia Reyes, seconded by Dr. Arthur Bracey, and unanimously accepted that the committee recommends that the Board approve item IV.B.**

AGENDA ITEM	DISCUSSION	ACTION/RECOMMENDATIONS

	• **Article XV – Ambulatory Care Services**
	  ○ This article was revised to address how this topic is described in medical school affiliation agreements.
	• **Article XVII – Meetings of Committees and Clinical Services**
	  ○ Deleted
	• **Article XIX, – Performance Improvement**
	  ○ Deleted
	
	Dr. Bracey inquired is there more that Harris Health can do to support and nurture young trainees and incorporate them within the committee structure. Dr. Mims stated that the medical staff is incorporating residents into many of its committees as a part of their training to better understand Quality and health care services. Dr. Brass stated that starting in February, he will be a part of the BCM safety education course teaching HRO and root cause analysis of live cases. Additionally, Dr. Brass mentioned that Harris Health offers topics geared towards the residents related to safety and quality. He shared that Harris Health has implemented town hall meetings for residents and their educators associated with respective schools to provide an open forum for discussion. Dr. Brass shared that Harris Health is in the process of developing a physician leadership development institute, which is to train emerging leaders through BCM and UT-Health Houston. He noted that Harris Health will partner with The American College of Healthcare Executives (ACHE) to provide onsite and zoom training related leadership development in the areas of communication, change management, quality and finance. A summary of the revisions is available in the permanent record.	

V. Items Requiring Periodic Updates / Discussion		
A. Cardiology Service Line Update	Mr. Smith recognized Ms. Amineh Kostov as Vice President, System Service Lines. Ms. Kostov delivered an update regarding Cardiology Service Line. She shared that there are three (3) physician leaders who guide the service line which includes: 1) Dr. Waleed Kayani (BCM), Dr. Enrique Garcia – Sayan (UT) and Dr. Tarif Khair (UT).	**As Presented.**

AGENDA ITEM	DISCUSSION	ACTION/RECOMMENDATIONS
	She also noted that there are standing members from multiple disciplines which include nursing, operations, quality, case management, virtual care, and primary care. Ms. Kostov shared that the physician leaders and multiple disciplines meets bi-monthly. She touched upon the monthly scorecard with agreed upon measures related to quality, access and volumes. Ms. Kostov shared the following Cardiology Service Line Accomplishments: 1) Developed a system-wide algorithm for management of pericardial effusion 2) Created E-Consult for cardiac risk assessment for low risk procedures, to decrease demand on Pre-op Anesthesia clinic 3) Incorporated new ACC/AHA guidelines for stent utilization 4) In collaboration with Transfer Center and ECs, developed Acute Coronary System (STEMI) triage and transfer algorithm for LBJ Hospital patients to expedite care, and to reduce the time it takes for identified patients to arrive at Ben Taub Hospital. Ms. Kostov also noted the cardiology service line focus areas: • Kicked off subgroups in October for outpatient management of heart failure patients, and high risk lipid patients • Identifying a system solution for continuous event monitoring • Implementing subspecialty scheduling at outpatient Cardiology Clinics A copy of the presentation is available in the permanent record.	

AGENDA ITEM	DISCUSSION	ACTION/RECOMMENDATIONS
VI. Special Items		
A. Review of Harris Health Annual Report	Dr. Julie Thompson, Administrative Director, Research & Sponsored Programs, delivered a review of Harris Health Annual Report. She provided a high-level overview of the administrative research approval process for new submissions. She shared that the research department focuses on patient safety, operational, financial and special risk issues. She noted that Harris Health undertakes a comprehensive review and approval process for research proposed and conducted in its facilities. Dr. Thompson reported that 652 studies were approved to be conducted system-wide. Of the 652, forty-six (46) studies were identified as addressing diversity and health equity issues. Dr. Thompson highlighted the several of the studies underway at Harris Health, some of which include: 1) nurse case management HIV prevention and care intervention among homeless youth, 2) prospective, multi-center, controlled trial of mobile stroke units, and 3) psychological distress of youth and adults impacted by Hurricane Harvey. Additionally, Dr. Thompson presented the following upcoming research projects for 2023: • Audit of Clinical Trial Billing Process • Epic Research Module: Go Live Date: March 26, 2023 • Diversity, Equity and Inclusion: ○ Review of services and systems Committee discussion ensued. Dr. Caracostis requested a breakdown of the community based research systems versus clinical trial research. A copy of the presentation is available in the permanent record.	**As Presented.**
VII. Adjournment	Moved by Ms. Alicia Reyes, seconded by Dr. Arthur Bracey, and unanimously approved to adjourn the meeting. There being no further business, the meeting adjourned at 8:57 a.m.	

I certify that the foregoing are the Minutes of the Meeting of the Joint Conference Committee of the Board of Trustees of the Harris Health System held on November 10, 2022.

Respectfully submitted,

Andrea Caracostis, M.D., MPH, Chair

Recorded by Cherry Pierson

Thursday, November 10, 2022

Harris Health System Board of Trustees Board Meeting – Joint Conference Committee Attendance

Note: For Zoom meeting attendance, if you joined as a group and would like to be counted as present, please submit an email to: BoardofTrustees@harrishealth.org before close of business the day of the meeting.

MEMBERS PRESENT	MEMBERS ABSENT	BOARD MEMBERS PRESENT
Dr. Andrea Caracostis, Chair	Dr. Mohammad Zare, Assistant Chief of Staff (ACS)	Dr. Ewan D. Johnson
Dr. Arthur Bracey (Ex-Officio)		
Ms. Alicia Reyes		
Dr. Esmaeil Porsa, President & Chief Executive Officer		
Dr. Fareed Khan, Assistant Chief of Staff (BCM)		
Dr. John Foringer, Chair, Medical Executive Board		
Dr. Martha Mims, Vice Chair, Medical Executive Board		
Dr. Matasha Russell, Chief Medical Officer, Ambulatory Care Services		
Dr. Sandeep Markan, Chief of Staff, Ben Taub Hospital		
Dr. Steven Brass, Executive Vice President & Chief Medical Executive		
Dr. Tien Ko, Chief of Staff, Lyndon B. Johnson Hospital		

EXECUTIVE LEADERSHIP
Ms. Amineh Kostov, Vice President, System Service Lines
Ms. Amy Smith, Senior Vice President, Transitions & Post-Acute Care
Ms. Anna Majeta, Chief Financial Officer, Community Health Choice, Inc.
Ms. Carolynn Jones, Executive Vice President & Chief Compliance and Risk Officer
Dr. Glorimar Medina-Rivera, Executive Vice President, Ben Taub Hospital
Dr. Hemant Roy, Vice Chair, Harris Health System & Ben Taub Hospital
Dr. Jackie Brock, Executive Vice President & Chief Nursing Executive
Dr. Jason Chung, Associate Chief Medical Officer & Senior Vice President, Medical Affairs and Utilization
Dr. Jennifer Small, Executive Vice President, Ambulatory Care Services
Mr. Louis Smith, Senior Executive Vice President & Chief Operating Officer
Ms. Maria Cowles, Senior Vice President, Chief of Staff

Dr. Maureen Padilla, Senior Vice President, Nursing Affairs & Support Services
Mr. Michael Hill, Executive Vice President, Chief Strategy & Integration Officer
Dr. Michael Nnadi, Senior Vice President, Chief Pharmacy Officer
Ms. Patricia Darnauer, Executive Vice President, Lyndon B. Johnson Hospital
Mr. R. King Hillier, Vice President, Public Policy & Government Relations
Mr. Ron Fuschillo, Senior Vice President and Chief Information Officer
Ms. Sara Thomas, Vice President Legal Affairs/Managing Attorney, Harris County Attorney's Office
Dr. Steven Brass, Executive Vice President & Chief Medical Executive

OTHERS PRESENT	
Antoinette Cotton	Matthew Reeder
Daniel Smith	Matthew Schlueter
Derek Curtis	Nicholas Bell
Ebon Swofford	Paul Lopez
Elizabeth Winn	Randy Manarang
Jennifer Zarate	Tai Nguyen
Jerry Summers	Tina Strawn
Julie Thompson	

BOARD OF TRUSTEES

Joint Conference Committee

HARRISHEALTH SYSTEM

Thursday, January 12, 2023

Harris Health Service Line Strategy Update

Service Line Updates

Board of Trustees Joint Conference Committee
January 12, 2023
Amineh Kostov, Vice President, System Service Lines

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AY2023 Goals

GI Goals

Pillar	Goal
Development of one clinical pathway	Develop referral guidelines to define criteria for OMS Vendor(s) and internal GI lab to guide PCP Providers when entering referral for colonoscopy.
Development of one standard of care	Develop colon cancer screening algorithm for primary care physicians to determine patient appropriate procedure of FIT vs. Screening colonoscopy.
Development of one clinical pathway	Develop workflow for patients who decline service by outside vendor to return to Harris Health.

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Maternal Health Goals

Pillar	Goal
Development of one clinical pathway	Develop comprehensive system wide standardized guidelines for timely identification and treatment of OB patients with severe hypertensive emergency.
Development of one standard of care	Create and implement system wide standardized scheduling and postpartum visit guidelines to ensure timely follow up for postpartum patients with hypertension.
Development of one standard of care	Create report to ensure compliance of workflow for Drug and Substance Abuse Screening Test for OB patients. (compliance of screening and then if appropriate, intervention i.e., order for follow-up)

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Cardiology Goals

Pillar	Goal
Development of one clinical pathway	Develop comprehensive system wide pathway for diagnosis, management, & referral of heart failure patients in the outpatient setting at Harris Health System.
Development of one standard of care	Develop a comprehensive system wide pathway for diagnosis and referral of lipid management in high risk patients.
Development of one clinical pathway	Develop comprehensive system wide pathway for triage, transport, and transfer of patients with Acute Coronary Syndrome.

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Optimization

Optimization

- Currently reevaluating the structure
- How can we ensure engagement with pavilion executive teams, inclusive of COS/ACOS/CMOs?
- Who are leaders that would benefit from opportunity to help build as we scale up?

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System Service Line Structure

Strategic Direction

Sr. Executive Leadership
Bi-Annual

Sr. Executive Triad
Quarterly/Ad-hoc more frequent

- COO
- CNE
- CME

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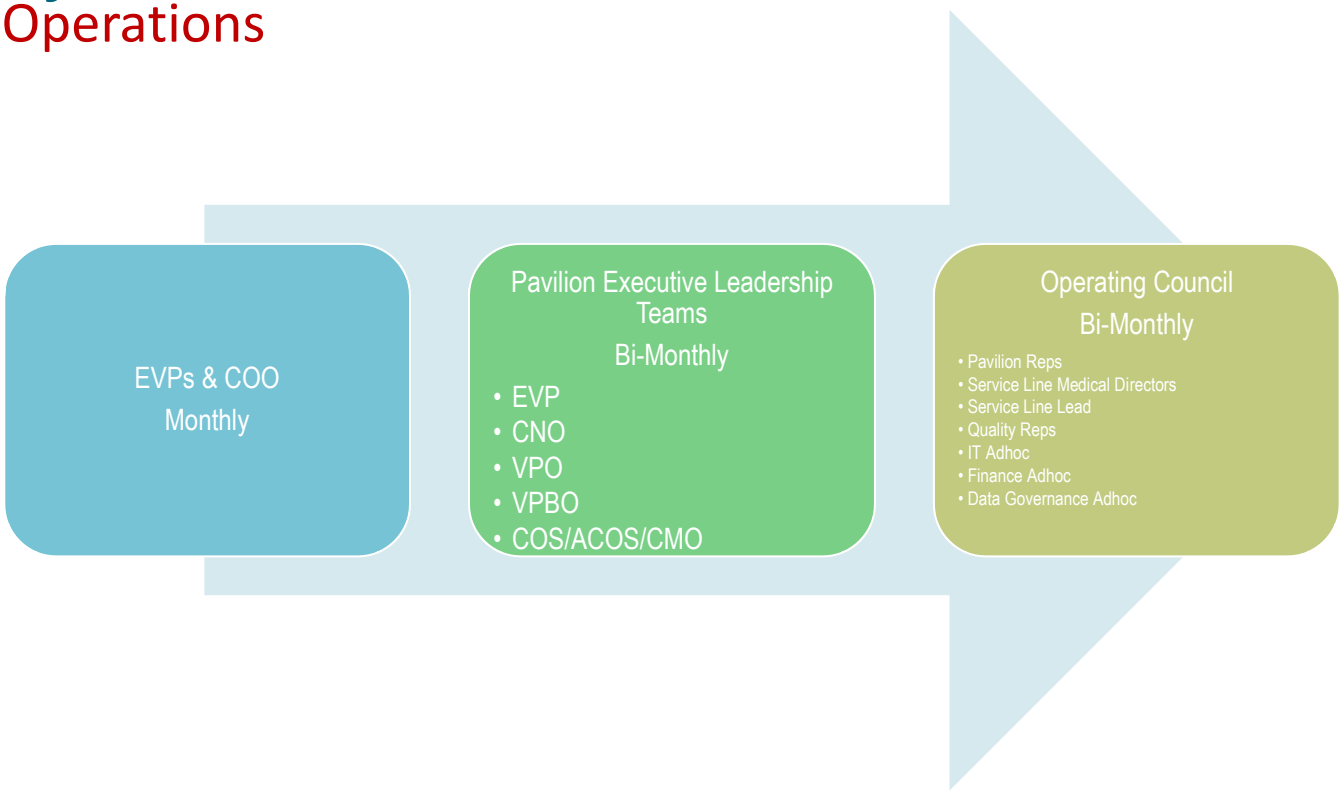
System Service Line Structure

Operations



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System Service Line Structure

Functional

Multidisciplinary Workgroup

- System Service Line Lead
- Adhoc Service Line Lead
- Quality
- Nursing (IP and OP)
- Pharmacy
- Care Management
- BCM Medical Director
- UT Medical Director
- Operations
- IT (as needed)
- Informatics (as needed)

Workgroup Subgroup
(changes based on goal/work area)

- Adhoc Service Line Lead
- BCM Provider (assigned)
- UT Provider (assigned)
- Other areas as identified

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Optimization

- How can we establish a consistent language to ensure clarity across the system?
- How can ensure integration of SLs with operations (MORs, etc.)?
- How can we maximize the efficiency of provider time involvement?

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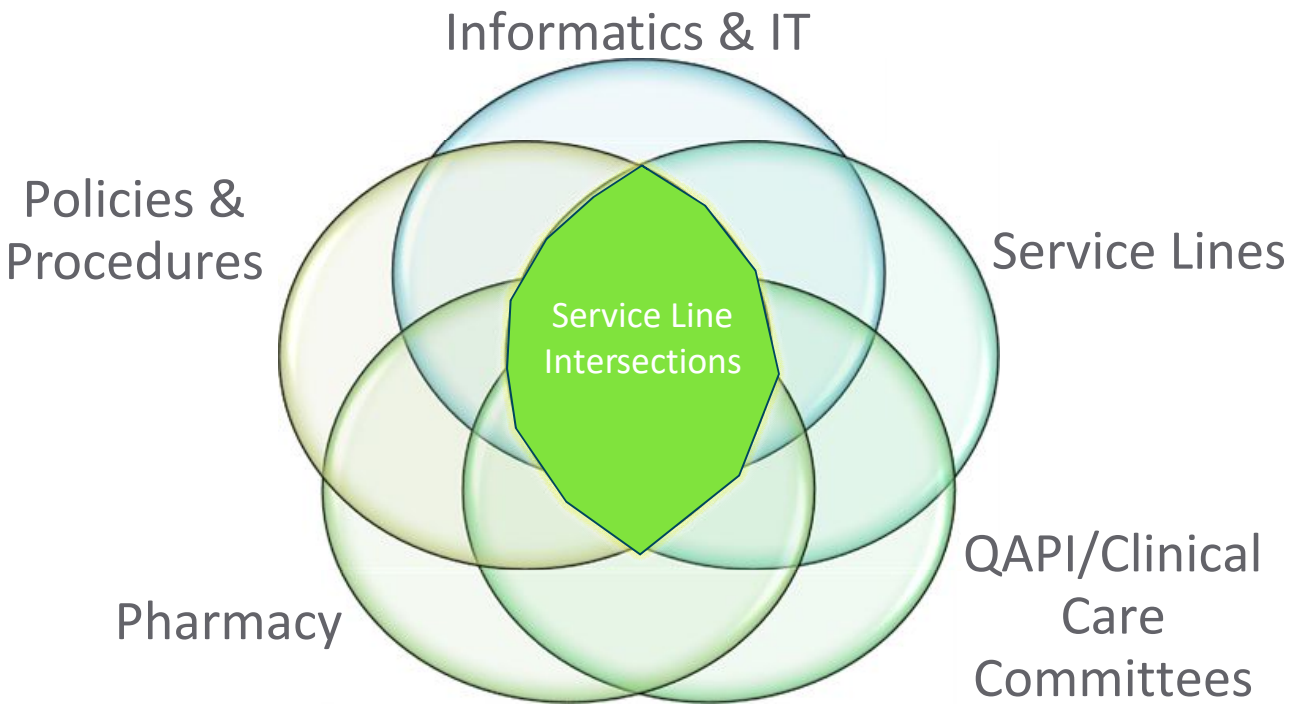
How to optimize stakeholder time in order to maximize engagement?



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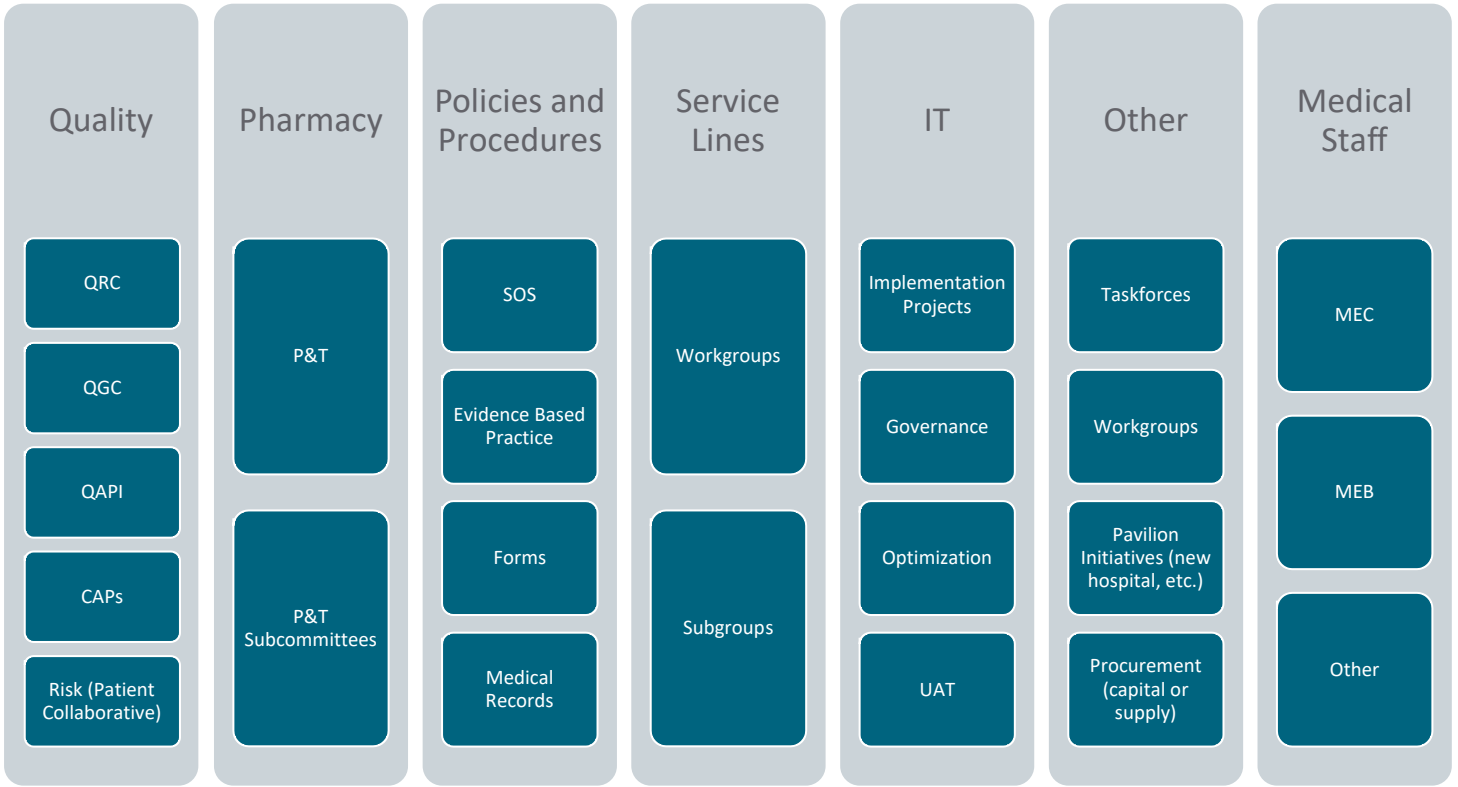
Time Demands on Providers



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Joint Conference Committee

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Thursday, January 12, 2023

Goal Update between Harris Health and UTH/BCM

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School Incentive Goals Year 3

Monica Carbajal
VP, Contract Administration

Joint Conference Committee

January 12, 2023

Incentives Potential

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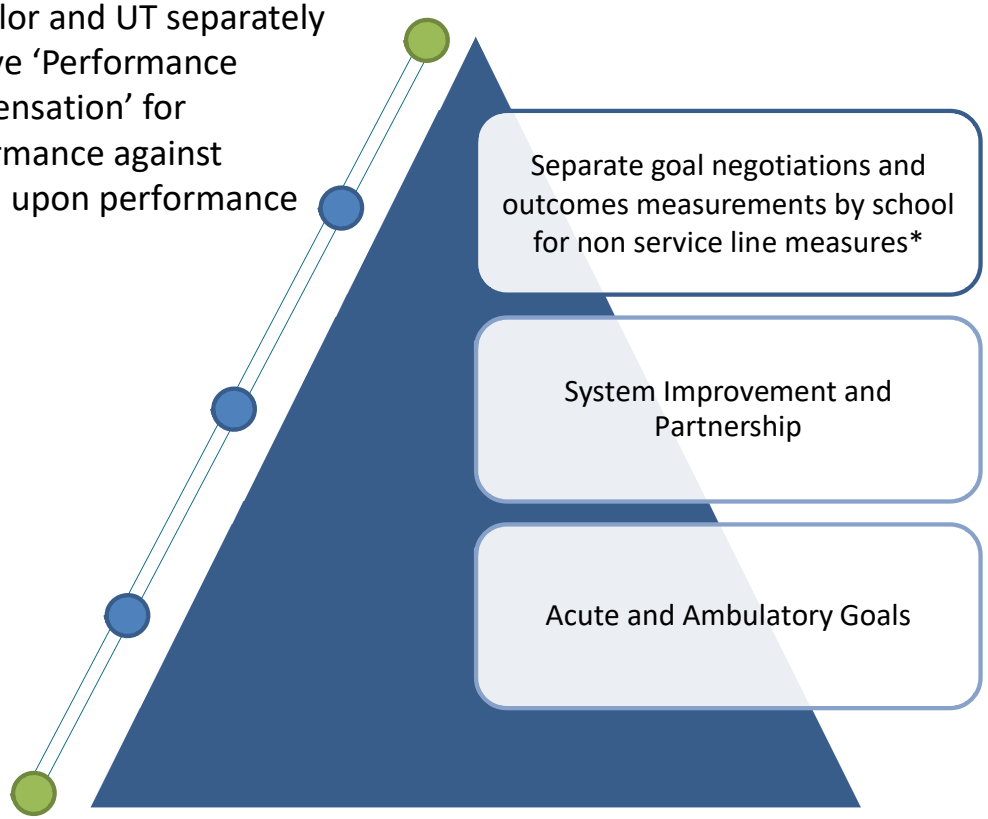
By contract, Baylor and UT separately eligible to receive 'Performance Incentive Compensation' for achieving performance against *mutually* agreed upon performance metrics



* Service line targets agreed upon with Baylor and UT together through system service line structure.

Areas of Focus

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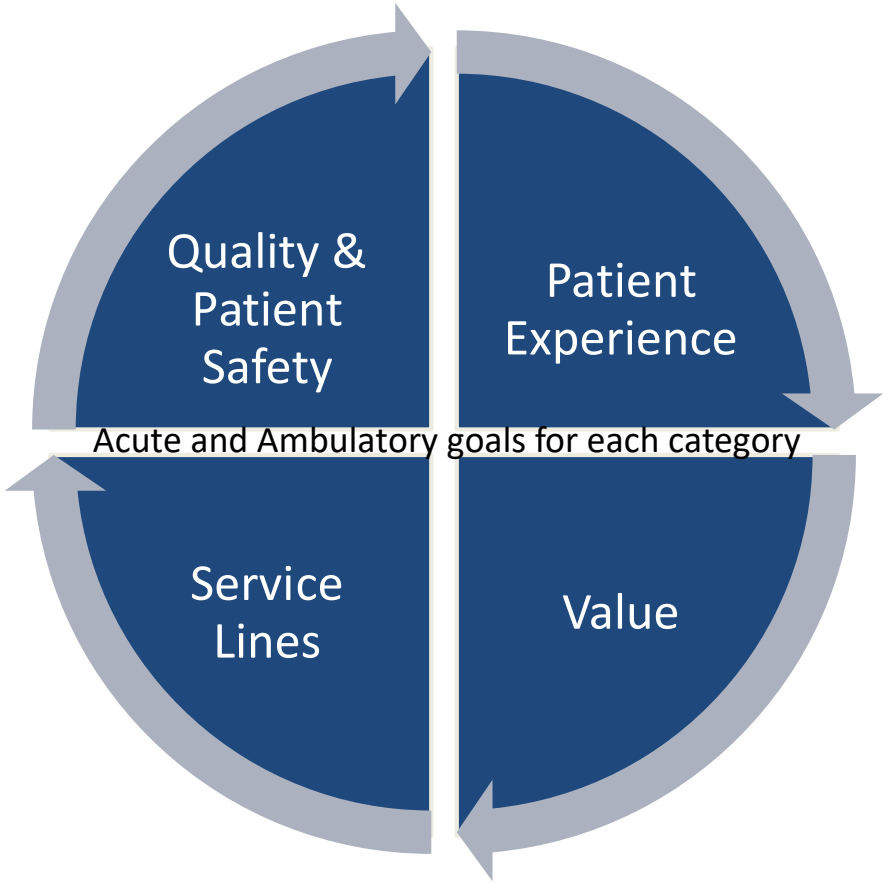

Sample Year 3 Goals

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Quality (Acute):

Improvement Opportunity	Sample Goal
Deep Vein Thrombosis and Pulmonary Embolism (DVT/PE) are often underdiagnosed and serious, but preventable medical conditions. (CDC guidance)	XX% of patients admitted to the XX medicine/hospitalist service have the DVT screening enhanced order set completed.

Patient Experience (Ambulatory):

Improvement Opportunity	Sample Goal
Listening behavior is highly correlated with patient satisfaction. Harris Health nursing and our physician and trainee partners completed the "Commit to Sit"/listening education module in early 2022	Performance of patient listening question (noted below) at XX percent. Clinic discharges only.

"Did this provider listen carefully to you?" Answers – No, Yes, somewhat, Yes, mostly, Yes, definitely. Scoring methodology is top box, percent that answered ***Yes, definitely***

Sample Year 3 Goals

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- Service Line developed goals for cardiology, GI and OB/Maternal Health.
- One cardiology goal has already been completed. All other goals are being actively worked.

Cardiology

HH Service Line Developed Goals
Develop comprehensive system wide pathway for diagnosis, management, & referral of heart failure patients in the outpatient setting at Harris Health System.
Develop a comprehensive system wide pathway for diagnosis and referral of lipid management in high risk patients.
(COMPLETE) Develop comprehensive system wide pathway for triage, transport, and transfer of patients with Acute Coronary Syndrome.

Performance Measurement, Support & Reporting

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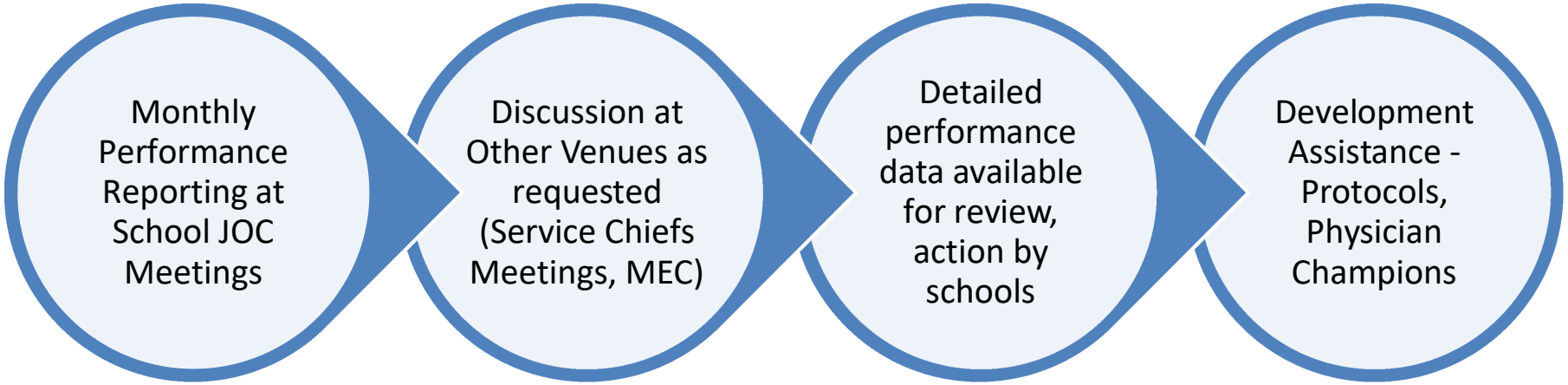

What's Next?

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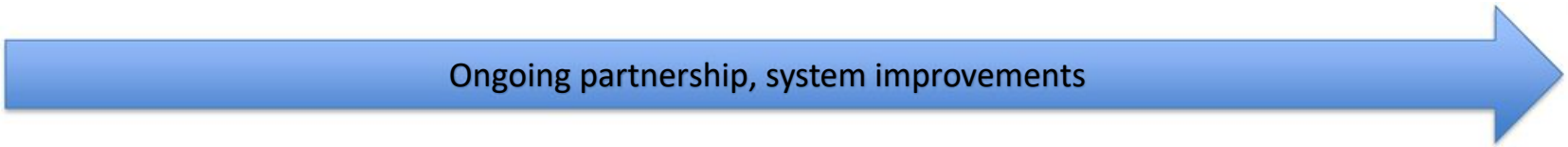
- Working to successfully close out Year 3
  - -Period ends June 30, 2023

- Negotiation of Year 4 incentive goals will begin in March
  - - Year 4 will begin July 1, 2023



BOARD OF TRUSTEES

Joint Conference Committee

HARRISHEALTH SYSTEM

Thursday, January 12, 2023

Electronic Health Record and Information Technology Disaster Planning

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Electronic Medical Records and IT Disaster Planning

Jeffrey M. Vinson Sr.
Senior Vice President & Chief Cyber & Information Security Officer (CCISO)
Ronald Fuschillo
Senior Vice President & Chief Information Officer (CIO)

Executive Summary on Cybersecurity

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- Cybersecurity risks continue to be a top challenge for the organization.
- There have been numerous Cybersecurity bulletins from the FBI/NSA/CISA warning of specific and credible threats to the healthcare industry.
- The war between Ukraine and Russia continues to impact the critical infrastructure in the US, with healthcare being the top target.
- The healthcare sector as a whole is reporting a tremendous amount of breaches to the OCR. In Sept. 2022, the FBI warned about cyber risks due to legacy medical devices on hospital networks.
  - We had 602 reported breaches versus 289 during the same time last year, representing over a 100% increase and impacting over 49million patients.
  - Of the 44 reported breaches in Texas, the Oakbend ransomware event made national news.
  - CommonSpirit, with its Houston affiliated hospitals are feeling the negative impact on clinical operations caused by a cyber event.

The Impact of Ransomware to Patient Safety

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Clinical and Business Impact of Ransomware Attacks on Hospitals 2022-2022

- ***Risk to patient safety***. ED's shutdown - **Ambulances placed on full divert - rural distance** delay of emergency treatment. Trauma Center availability - Regional impact - Cancer treatment delayed
- Telemetry systems inoperable – additional staff required for patient monitoring - Home health care telemetry. *Patients at home, greater risk*
- Radiology / Imaging / PACS down - other diagnostic technology lost
- EHR rendered inaccessible. Patient history, treatment protocols, drug allergies / interactions unknown – delay in rendering care
- Lab results unavailable or delayed
- Surgeries cancelled - ADT impact
- Drug cabinet/ pharmacy systems down
- Loss of VoIP phones and email systems

- Ransomware "blast radius" – other providers who are dependent for ED, EMR, labs, imaging, cancer treatment and other third parties also disrupted
- Simultaneous loss of all network and internet connected information, medical and operational technology – ***Downtime computers lost***
- **Staff unprepared for extended clinical downtime procedures for all functions and paper charting lasting up to three to four weeks.**

- *Three to four week recovery time for mission critical systems, ransom paid or not, residual impacts lasting minimum 6 months*
- Legacy systems unrecoverable
- Revenue cycle interruption and revenue loss due to incomplete charts. **Need 60 days cash on hand – no income for 60 days.**
- Scheduling, timekeeping and payroll systems disrupted
- Operational and physical security technology impact
- Third parties requesting independent certification before reconnection
- Increased insurance premiums or loss of coverage
- Class action and individual lawsuits from patients
- HHS OCR investigation/audit + State investigations
- Credit monitoring costs
- Increase in credit risk rating, increased financing and bond issuance
- Lost business opportunities, future revenue
- *Reputational harm – possible loss of patient, community and investor confidence*

Information Security Controls

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- Information Security has deployed some of the best solutions in the industry to protect the enterprise from cyber attacks. Below are a few highlights:
  - CrowdStrike
    - ✓ CrowdStrike Falcon unifies the next-generation antivirus, endpoint detection and response (EDR), and a 24/7 threat hunting service that is delivered via a single agent.
    - ✓ Provides protection on endpoints (currently deployed on workstations & servers)
  - Radware DDoS
    - ✓ Provides automated protection against emerging network attacks, ransom DDoS campaigns, IoT botnets, phantom floods, and other types of cyberattacks.
  - IBM Qradar
    - ✓ Collects, processes, aggregates, and stores log data and provide near real-time information and monitoring, alerts and offenses, and responses to network threats.
  - Netskope
    - ✓ Delivers a modern cloud security with unified capabilities for data and threat protection, plus secure access to cloud based solution.

Information Technology Disaster Planning

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- InfoSec and IT meet weekly to review potential security risk(s) and current and future project(s) to mitigate those risk(s)

- CCISO and CTO meet biweekly to discuss cyber security risk prevention and remediation initiatives

- Facts: Hurricane Harvey – August 2017
  - Challenges: to provide health care services to evacuees, Harris Health stood up a temporary clinic at NRG stadium and it took the system 48 hours to complete the setup
  - Lesson learned:
    - IT created a hot-standby an Alternate Care Kit that includes (equipment, software, and clinic layout) that can be deployed within 4-6 hours to an alternate facility that can provide power
    - Installed additional data circuits to improve network connectivity availability

Disaster Recovery - Overview

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- Harris Health System has a robust data center disaster recovery (DR) strategy, which is includes identical data centers, 100 miles geographically apart to avoid hurricane impacts to the services.
- All production clinical and business systems have primary and secondary copies and can run fully in either data center at any given time.
- Disaster recovery failover testing is completed at the system, application and data center level multiple times each year to ensure the DR plan is working as it should.
- Before hurricane season, system upgrades, or in the event of a hardware failure outage, clinical and business applications are failed over from one data center to the other to eliminate or reduce service interruptions.
- As a practice, we also plan for the 'what if' scenario so that we can be prepared to respond effectively and minimize disruptions to patient care.

Disaster Recovery - Backups

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- All Systems are backed up daily
- There are three(3) online instances of the Epic database – Production, DRS, Read Only, running in different data centers.
- Online system backups are done daily at the designated primary site, then are replicated daily to secondary site.
- Backups are set to physical/offline backup media, stored in fireproof safe at primary site.
- Use 3rd party vendor, Iron Mountain, to secure physical tapes
- To help to reduce Ransomware threats, IT is investigating cloud based storage solution.

Harris Health Enterprise Network Connectivity Redundancy

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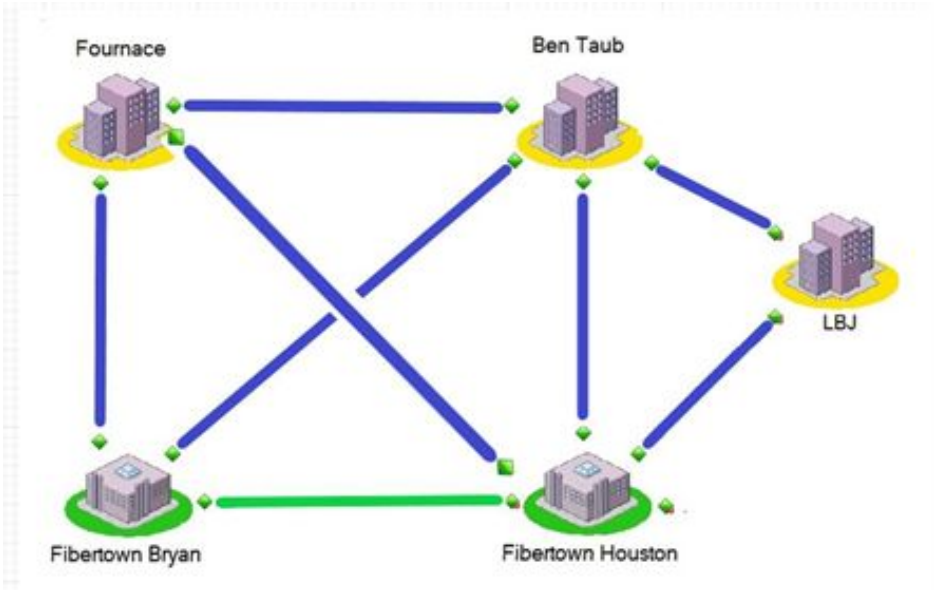
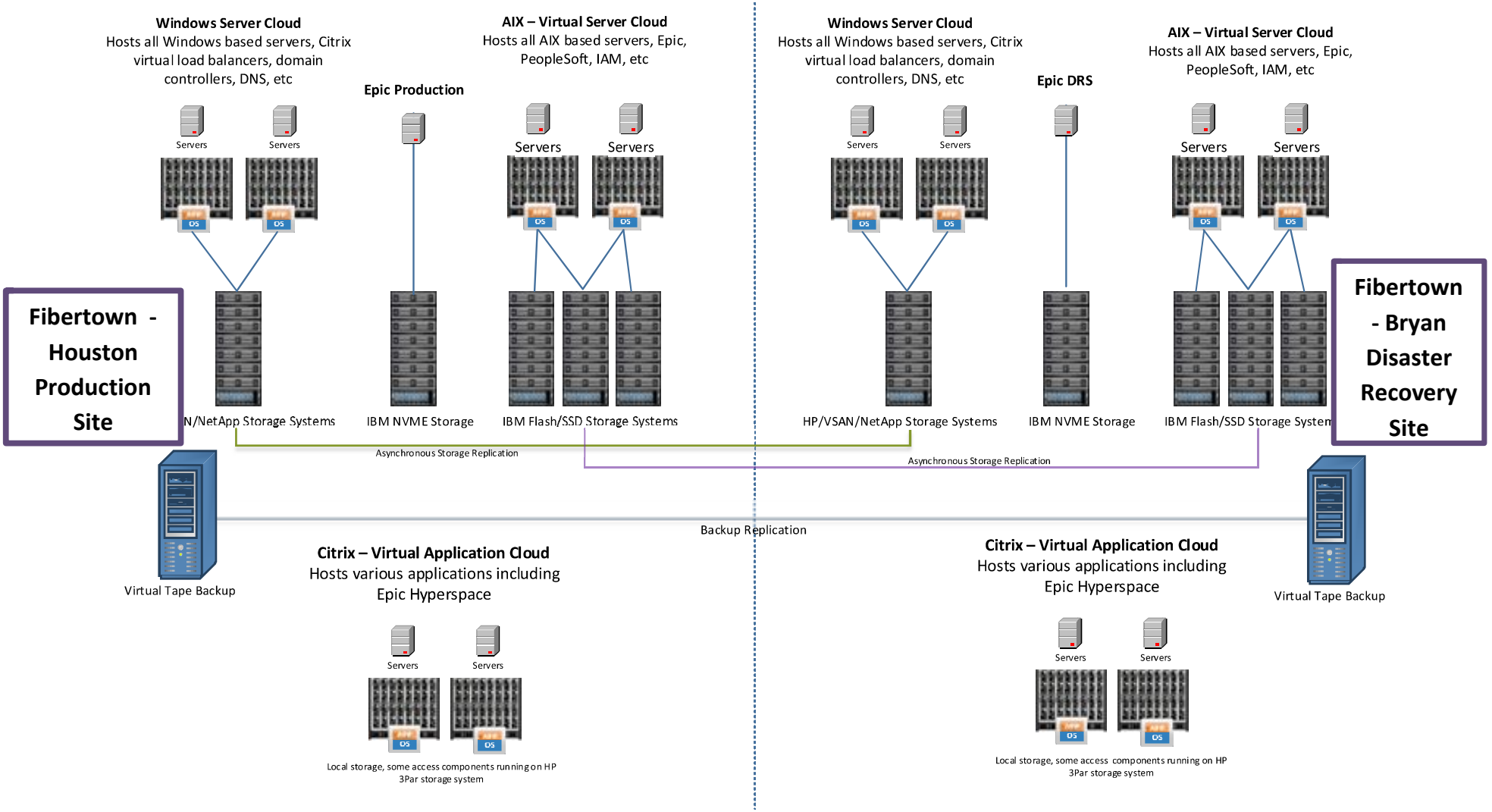
- Harris Health System data center and connectivity strategies are a set of standards using SOC compliant data centers, advanced redundant networking, AIX and VMWare virtual cloud technology. This strategy includes technology architecture that provides near-seamless continuity in the event of a myriad of failure scenarios.



Fibertown – Bryan Disaster Site

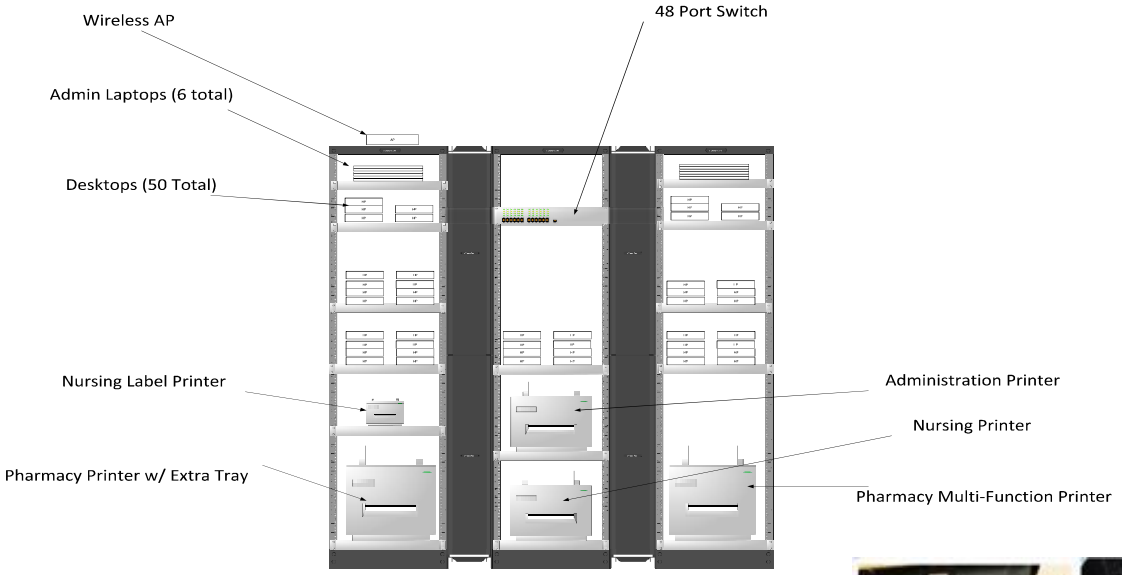
Fibertown – Houston Production Site

Harris Health Disaster Recovery - Compute, Storage and Backups



Alternate Care Site

- An alternative Care Site (as mentioned in the previous slide) with Hardware, Software, and clinical workflow that can be deploy at a designated location within 4 to 6 hours



Additional Mitigation Strategy

- A debrief was done with Baylor St-Luke Leadership regarding the Cybersecurity Event

- In the near future, Harris Health will begin a process to review and perform real-time simulations using downtime procedures with medical staff (via the Chiefs of Staff/Chiefs of Service) for the following key documentation types:
  - History & Physical and Progress Notes for each Specialty ;
  - Informed Consent Forms;
  - Pharmacy Orders;
  - Laboratory Orders;
  - Radiology Orders;
  - Pathology Orders;