

BROWARD HEALTH CERNER EHR STRATEGIC WORKSHOP JANUARY 26, 2022

Presenters:

Kathy Ross - Chief Information Officer

Chris Pernicano - Commissioner



AGENDA

Meeting Goal: *To review the Cerner EHR system from a business, technical, and functional perspective and make a recommendation as to the long-term Broward Health strategy for the solution.*

- Welcome & Agenda Review – **Chris Pernicano**
- Cerner Solution Overview – **Kathy Ross**
- Current Costs Review – **Kathy Ross**
- Upcoming Cerner Initiatives – **Kathy Ross**
- Broward Health Cerner User Survey Results – **Chris Pernicano**
- Review/Commentary of Recommendations from Outside Consultants – **Chris Pernicano**
- Lessons Learned & Process Improvement – **Kathy Ross**
- Open Discussion and Next Steps – **All**

CERNER SOLUTION OVERVIEW

- The Cerner solution is currently used by approximately 8,850 active Broward Health Users, this is approximately 91% of the employee base.
- Key Cerner user roles include doctors, nurses, ancillary department, HIM, revenue cycle, pop health
- Broward Health operates with ninety-five Cerner modules in production, three in process for implementation, one planned for implementation, and five modules not used with plans to implement.
- The Cerner solution is currently integrated with approximately 45 other Broward Health solutions such as Invision, NextGen, Precision, EICU, Teletracking, PACs, Mmodal Dictation, Philips Cardiology, 3M CDI, Florida DOH, Allscript referrals

Clinical Solutions

Device Connectivity (CareAware)



- Lab Device Connectivity (MDI)
- Vital Sign Entry to GE monitors (Vitalink)
- Bedside Connectivity (iBus BMDI)
- Care Communication (Connect)
- Fetal Monitoring Connectivity (Fetalink)
- Camera Capture

Interoperability



- Cerner Direct HISP
- Interface Open Engine
- CommonWell
- CareQuality

Key:

- Live
- In Process
- Planned
- Not Implemented

Departments and Specialty



- Laboratory (AP, Micro, GL)
- Radiology
- Inpatient Pharmacy (PharmNet)
- Emergency Department (FirstNet)
- Surgery (Surginet)
- Anesthesia
- ICU Critical Care (Inet)
- Archived Retail Pharmacy (Etreby)
- Labor & Delivery (PC Maternity)
- Lab Specimen Collection
- Therapies PT, OT, Speech
- Departmental Scheduling
- Departmental Supply Chain
- Electronic Consents
- Blood Bank
- Trackcore Integration
- OTTR Integration

Ambulatory/Acute



- EHR (PowerChart Ambulatory)
- EHR (PowerChart Acute)
- CPOE
- Documentation Notes/Dynamic
- Nursing documentation
- Care Plans
- ePrescribe
- Mobility (PC Touch)
- Meds Barcode Scanning
- Message Center
- Women's Health
- Scanning (Nextgen/Cerner)
- Eligible Provider Quality Reporting
- Enhanced Medical Necessity
- Non affiliate read only Physician access to EMR (mPages Reach)

Technology and Managed Services



- Remote Hosting
 - Millennium
 - Invision
 - MModal
- Upgrade Center Managed Services
- Business Continuity (724Access)
- EPCS (Workflow Authentication)
- Auditing Solution (P2 Sentinel)
- SMART and FHIR (Ignite API)
- Support Session Recorder
- Cerner Advance
- Lights on Network
- SSO Imprivata

Decision Support



- Quality Management and Performance Improvement
- Operational Reporting (PowerInsight Explorer)
- Public Health Reporting
- Chart Search
- Sepsis Agent (St. John)
- Infection Control
- Sepsis Management
- Readmission Prevention
- Annual Regulatory Services

Post Acute



- Behavioral Health
- Rehab*



Consumer and Revenue Cycle

Patient Financial Services



Billing & contract management

- Patient accounting
- Denial management
- CDM management*
- Contract Modeling
- Contract management
- Letters*
- Statements*
- Claims Mgmt.*
- Analytics
- Document Imaging
- Patient Online Pay *
- Commercial Lockbox

Population Health Consumer



- Patient Portal
- Care Management
- EDW
- Analytics
 - Cost & Utilization
 - HEDIS
 - HCC
 - Unified analytics
 - ACO
- Longitudinal Record
- Registries
 - Comprehensive Adult Wellness
 - Pediatric Wellness
 - Diabetes
 - Heart Failure
 - COPD
 - Hypertension
 - HIV
- MPI Duplicate Reconciliation
- Consumer Framework

- HealthIntent Data sources Onboarded
 - EMR
 - Millennium
 - NextGen
 - Scheduling
 - Millennium
 - NextGen
 - 837's
 - Invision RCM
 - NextGen
 - Payer Claims
 - Community Care Partners (CCP)
 - Florida Blue
 - Cigna
 - United
 - Sunshine
 - AvMed
 - Detailed Patient Accounting Data:
 - Invision Patient Accounting
 - Other:
 - Etreby pharmacy
 - ScriptPro pharmacy
 - Quest Lab

Key: ● Live ● In Process ● Planned ● Not Implemented

*denotes 3rd party software / **bolded** is our preferred partners

**denotes Hospital Outpatient Centers only

Patient Access



Access to care

- Scheduling (Cerner/NextGen)
- EMPI
- eSignature* (Precision)
- Appointment reminders*



Financial clearance

- Medical necessity
- Insurance verification



Visit

- Registration (Cerner/NextGen)
- Mobile eSignature*
- Scanning*

Case Management and Coding



Acute case management and HIM

Acute case management and HIM

- ACM Utilization review *
- HIM Coding (3M) *
- HIM Deficiency Tracking
- HIM Chart Printing / Faxing
- HIM Release of Information

Content Management



- Document Imaging
- IT training (Premier Pass)
- CPT
- Mulum
- Krames
- SnowMed
- ICD 10
- Exit/Writer/Care



CONTRACTED OBLIGATIONS 2022

Revenue Cycle	Invision – Software / Hosting Transaction Services – Revenue Cycle Transaction Services - Eligibility and Claims	\$2,858,548
Clinical	Clinical Licensed Software - Millennium Consulting Fees – Implementations Professional Services Recurring Subscriptions – Cerner and 3rd Party – Prescription Drug Monitor, Intel Software	\$2,699,468
Support	Support Services for Licensed Software Support Services Recurring Software Support	\$2,980,871
3rd Party	Equipment Maintenance Services – Hardware Sublicense Support - Software	\$163,058
Remote Hosting	Data Center – hosting of Millennium, MModal	\$5,148,072
Cloud Solutions	ePrescribe, FetaLink+, RLN, HealtheLife, CernerHub, API, CareSelect, Pop Health, HIE, HealtheEDW, Patient Portal, CareAware VitalsLink, HCC	\$3,133,368
Total	TOTAL Obligation 2022	\$16,983,390

CERNER PROJECTS IN FLIGHT

Cerner Millennium Code Upgrade 2018.01.09

- Upgrade to System

E- Consent

- Electronic Consents for Procedures

Trackcore

- Tissue tracking from the loading dock to the patient, regulatory requirement.

VitalsLink

- Vital sign capture at bedside, auto- sends to chart reduces transcription errors.

Nursing Optimization (Peds)

- Optimize and streamline charting for the Pediatric, NICU and PICU nurse.

2015 CEHRT Cures Act

- Regulatory Requirement

2022 eCQM

- Regulatory Requirement

CareSelect ACR billing

- Radiology decision support with correct billing. Regulatory requirement

Cerner Anesthesia

- Anesthesia Documentation and device integration with Cardiac Monitors and Anesthesia Machines

CERNER PLANNED PROJECTS



Cerner Oncology/ CareVive

- Oncology documentation, orders, cycle scheduling and survivorship



Infection Control

- All infection control documentation including isolation codes



PeriOp Optimization

- Optimizing the PeriOp, IntraOp and PostOp workflow, tracking and documentation



CareAware Connect for Nursing

- Mobile alerting, messaging and careteam functionality.



Behavior Health

- Documentation for inpatient and outpatient behavior health



Sepsis

- Realtime alerting on patients that are approaching sepsis



VTE Prevention

- Venous thromboembolism prevention



Bridge Medical Blood Transfusion

- Scanning Blood at the point of delivery



Bridge Medical Breast Milk

- Scanning breast milk and donor breast milk at time of feeding

CERNER PLANNED PROJECTS CONTINUED



ED Launch Point & Optimization

- Changing tracking boards in the ED to assist with throughput, optimizing nursing/physician documentation



Cerner Registration and Scheduling all sites

- Changing all inpatient and outpatient registration and scheduling to Cerner. Must be off current system by 2025

RevElate

- Cerner Revenue Cycle

IBus move to Cloud

- Changing medical device technology to the cloud

Move legacy MDIs to Ibus

- Changing remaining lab devices from point to point to Cerner technology

CDRC Assessment and Optimization

- Clinical Driven Revenue Cycle Assessment, readiness and optimization



Nursing Optimization

- Continue to review nursing positions to bring to Cerner Model



Physician Optimization

- Continue to review physician positions to bring to Cerner Model



Move CDTC to Cerner

- Changing CDTC from NextGen documentation to Cerner

Location Optimization

- Updating all locations with correct names and location

USER SURVEY METHODOLOGY

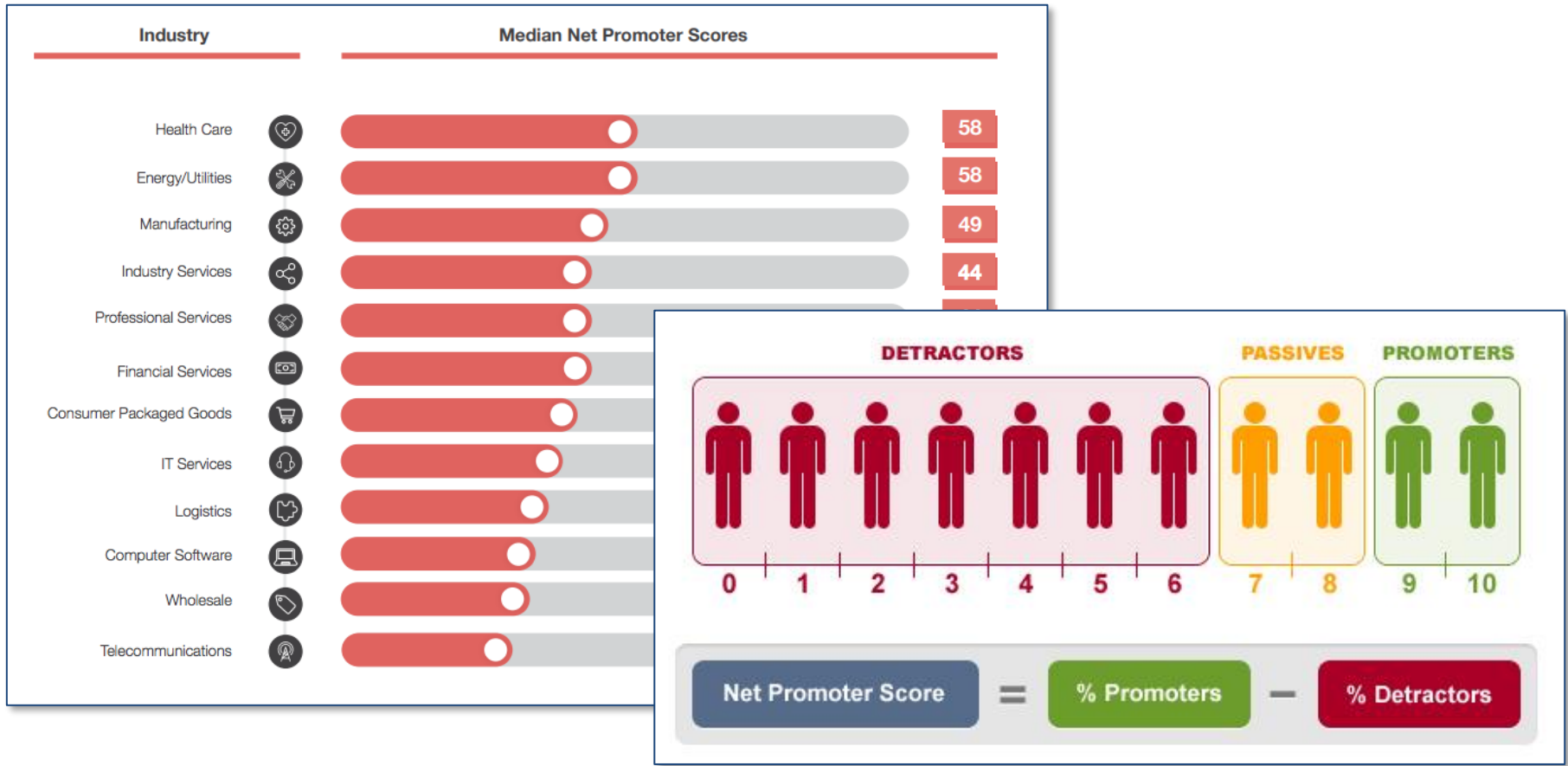
Survey Goal: *In reviewing the available information, it became clear that the voice-of-the-user was not available for decision-making input. The purpose of the survey was to hear from the system users.*

- **Survey Methodology** – Email survey using net promotor score NPS methodology (explained on next slide).
- **Scope** – Sent to all Broward Health Cerner users (9800 employees).
- **Response** – 267 employees responded, for a 3% response rate.
- **Survey Questions:**

1. *How do you use the EHR system: (multiple choice: Doctor, PowerChart as a Nurse, PathNet as an Administrator, ...)*
2. *How likely would you be to recommend our EHR solution?: (select 1-10 with 1 being least likely to recommend and 10 being the most likely to recommend)*
3. *What do you like most about our EHR solution? (free form text)*
4. *What do you like least about our EHR solution? (free form text)*
5. *What do you recommend that we do to improve the solution? (free form text)*

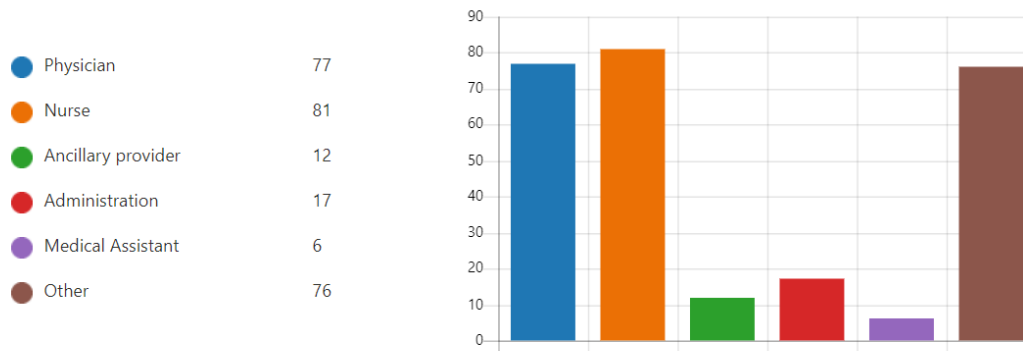
WHAT IS NPS?

Net promoter score is a widely used market research metric that typically takes the form of a single survey question asking respondents to rate the likelihood that they would recommend a company, product, or a service to a friend or colleague.



SURVEY RESULTS

RESPONDENT COUNTS BY ROLE:



NET PROMOTOR SCORE:

-35%

Likes

- Ease of Use - 86
- Comprehensive - 17
- Remote Access - 8
- Familiarity - 5
- Voice Dictation - 4

Dislikes

- Difficult to Use - 112
- Fragmented Charting - 16
- Slowness - 13
- Security (Password resets, open charts) - 10
- Lack of Oncology - 6
- Missing Data - 5

Suggestions for Improvement

- Switch to Epic - 20
- Add Oncology - 11
- Switch EHR (none specified) - 8
- Improve ease of use/navigation - 7
- Improve performance - 5

Select Quotes

- Fragmented areas for documentation, Care Compass not user friendly,
- The new charting is redundant
- extremely accessible/ fast from external desktop
- ...don't change to another EHR.
- cut back on the drug interaction warnings

USE OF OUTSIDE CONSULTANTS

January 2020, Cumberland Consultant was engaged to develop a comprehensive total implementation cost estimate (TICE) centered around capital, operating and implementation cost.

October 2020, Kauffman Hall was engaged to develop an impartial ten-year total cost of ownership model to estimate costs associated with revenue cycle and electronic health record proposals from Cerner and Epic.

10 YEAR FINANCIAL COMPARISON PER CUMBERLAND

Cerner Total Cost of Ownership (TCO) \$196M

- \$22.6M Capital
- \$173.3M Operating

Epic Direct \$244M

- \$62M Capital
- \$182M Operating

Epic Connect with MHS \$197M

- \$46M Capital
- \$151M Operating

FINANCIAL IMPACTS PER KAUFFMAN HALL

- Epic conversion will cost an estimated additional \$163M over the next 10 years compared to retaining Cerner.
- Eighty percent (80%) of \$163M in additional Epic costs will be incurred by the end of FY25, due to implementation costs (lasting 18 months) and existing contractual obligations with Cerner
- Broward Health entered into an 8-year master service agreement with Cerner in 2017 which expires in 2025; this includes an obligation to pay Cerner \$45M between 2021 through 2025 regardless of the EHR chosen

THIRD-PARTY ANALYSIS OVERVIEW

- A transition from INVISION to Cerner Patient Accounting is considered a moderate change to the Broward Health organization
- A transition from Cerner to Epic is considered a significant change to the Broward Health organization
- Adoption of a moderate change in Broward Health's EMR platform will require change management principles that are embedded within Cerner's implementation methodology
- Adoption of a significant change in Broward Health's Electronic Medical Record platform will require an Organizational Change Management project to be executed in parallel with the Electronic Medical Record implementation in order to achieve the required level of confidence for an optimal outcome

ADDITIONAL THIRD-PARTY ANALYSIS OVERVIEW

- Broward Health's existing platform is highly customized; meticulous planning and proactive process design will be required to successfully implement a new system
- Broward Health's near-term financial position would be stressed by transitioning to Epic; Cerner financial disruptions are minimal
- Broward Health must improve operational performance above historical levels to support a transition to Epic
- Transitioning to Epic will require tradeoffs to build incremental debt capacity; Cerner scenario provided additional financial flexibility

MIGRATING SYSTEMS

IMPACT TO ORGANIZATION PER CUMBERLAND

People

- Cerner Patient Accounting 2
- Epic Direct 4
- Epic connect with MHS 4

Process

- Cerner Patient Accounting 3
- Epic Direct 4
- Epic connect with MHS 4

Technology

- Cerner Patient Accounting 2
- Epic Direct 4
- Epic connect with MHS 4

Overall Rating

- Cerner Patient Accounting 2.3
- Epic Direct 4
- Epic connect with MHS 4

1 = No Impact

2 = Slight Impact

3 = Moderate Impact

4 = Significant Impact

LESSONS LEARNED

Meeting Goal: *Broward Health now has 29 years of experience in working with the Cerner solution; that time has come with some key lessons learned.*

▪ Customized vs. COTS Solution

- *Current Cerner solution is highly customized without using Cerner Standard.*
- *Go forth strategy is to implement Cerner Model Experience*

▪ Module-based vs. Enterprise License

- *For years Broward implemented single solutions compounding the chaos in the Electronic Medical Record*
- *Enterprise license will allow sequentially plan appropriate application implementation*

▪ Managing Change & Support Costs

- *Historically Broward Health paid for each solution and implementation independently increasing costs*
- *Partnering with Cerner will increase our licensing without increasing our overall cost*
- *Consolidate implementation process and costs*

▪ Capturing and Acting on User Feedback

- *Broward Health will increase user engagement and adoption*

OPEN DISCUSSION & NEXT STEPS

OPEN FORUM..!



APPENDIX





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EHR Total Cost of Ownership and Scenario Development Final Report

January 2020

Agenda

- Project Overview
- Market Analysis – Current Status of the Industry
- Cumberland's Assessment
- Implementation Scenarios and Pros/Cons Analysis
- Recommendations and Next Steps
- Appendix – Supporting Detail

Project Overview

- Develop a comprehensive Total Implementation Cost Estimate (TICE) model centered around implementation scenarios, which will include all capital and operating cost breakdowns annually for software, hardware/hosting and implementation services
- Key activities and inputs into the TICE model include:
 - Implementation scenario development and pros/cons evaluation
 - Implementation timelines and optimal critical path for each of the implementation scenarios identified
 - Staffing and project organization structure (internal/external)
 - Application scoping and pricing (including third-party applications)
 - Technology assessment (including interfaces/infrastructure/hosting)

Driving Factors for Researching Potential Change of EHR Platform

- Replace current aging revenue cycle system while maintaining revenue cycle performance metrics centered around the following:
 - Cash
 - Days in A/R
 - Clean Claim Rate / Denials
 - Charge Capture
- Increase capabilities around clinical data integration with other hospital systems within the county
- Maintain a level of satisfaction with the EHR platform for all end users while understanding the organization's readiness for change to a new EHR platform
- Maintain HIMSS level 6, while striving for HIMSS level 7 that provides a path to increased quality, safety, productivity and satisfaction

Implementation Scenarios



Scenario 1 – Enhance Cerner w/ Patient Acct

- Broward Health to Maintain Cerner Millennium
- Implementation of Cerner Revenue Cycle and Supporting Systems
- Clinical Data Sharing Capabilities between Broward Health and Memorial



Findings from fatal flaw analysis eliminated Scenario 2 – Phased Epic Connect. Detail provided in Pros/Cons section of the presentation.



Scenario 2 – Phased Epic Connect

- Broward Health to Implement Memorial's Instance of Epic Revenue Cycle to Replace Invision
- Memorial's Instance of EpicCare Ambulatory and Epic Inpatient Implemented once Epic Revenue Cycle has been Stabilized



Scenario 3 – Big-Bang Epic Connect

- Broward Health to Implement Memorial's Instance of Enterprise Epic (Epic Revenue Cycle, Epic Inpatient and EpicCare Ambulatory)



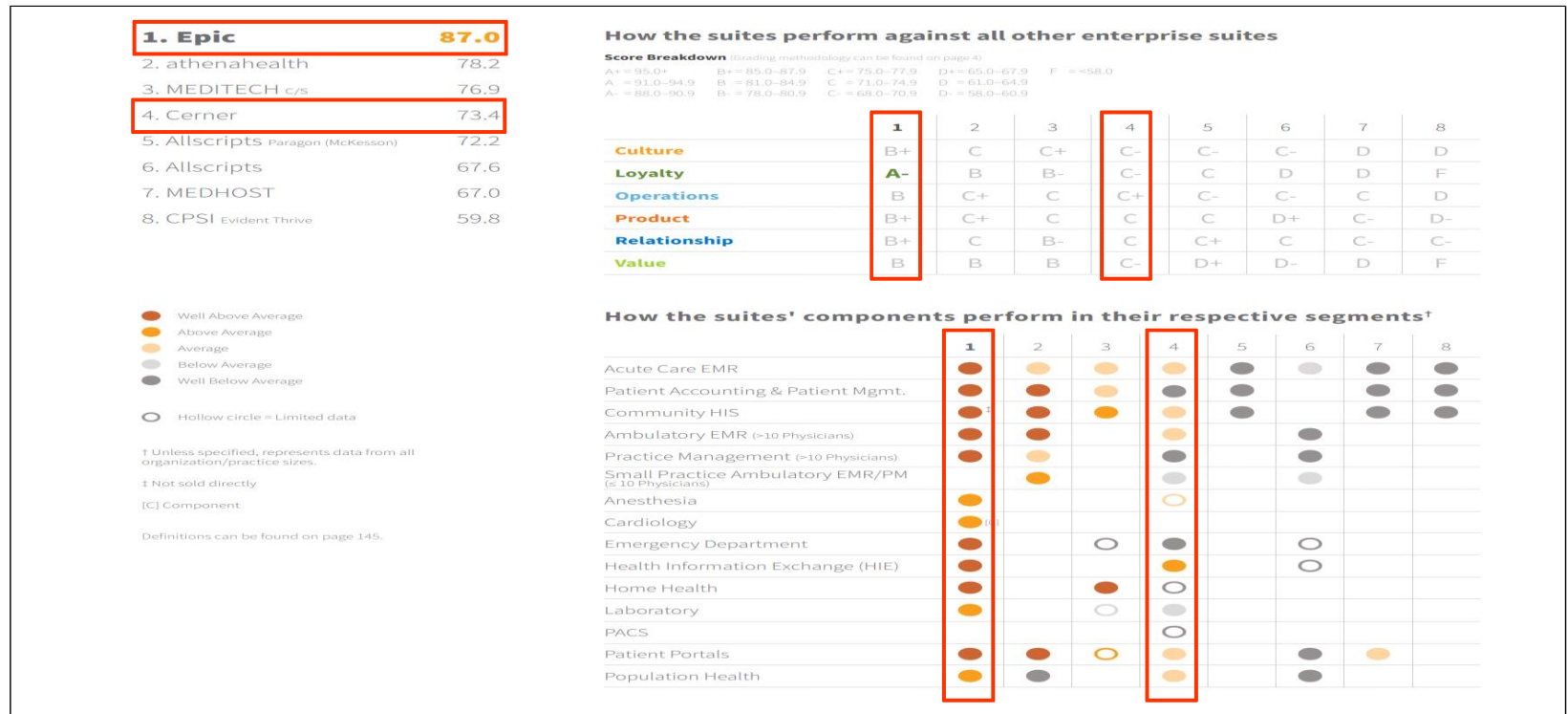
Scenario 4 – Epic Direct

- Broward Health to Implement Memorial's Instance of Enterprise Epic (Epic Revenue Cycle, Epic Inpatient and EpicCare Ambulatory)

Market Analysis

Current Status of the Industry

Vendor Solution Comparison KLAS Overall Software Suite Rankings (2019)



EHR Vendor Hospital Market Share

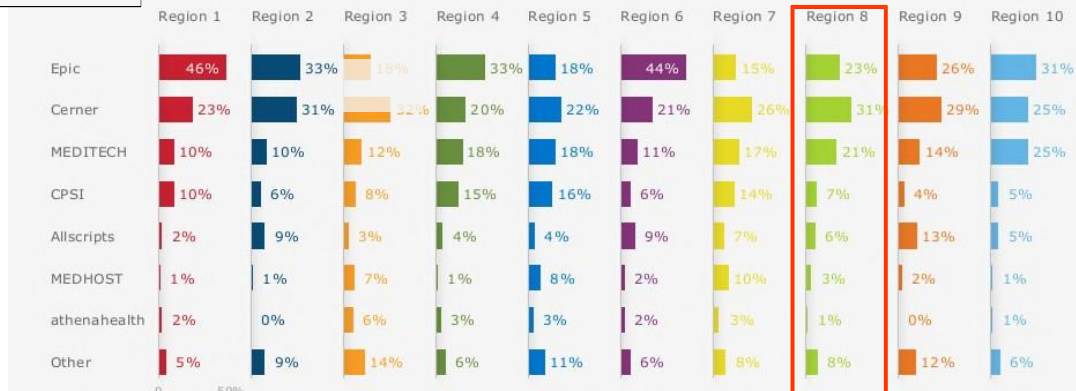
Market Share by Region



Key Takeaway: Broward's region (region 8) is predominately Cerner. The only region with a higher Cerner market share is the west (region 3).

Other observations:

- Epic and Cerner both have >30% market share in CA
- Regions 5, 7, and 9 do not have a vendor with >30%



Graph slightly modified from
KLAS, U.S. Hospital EMR Market
Share 2019

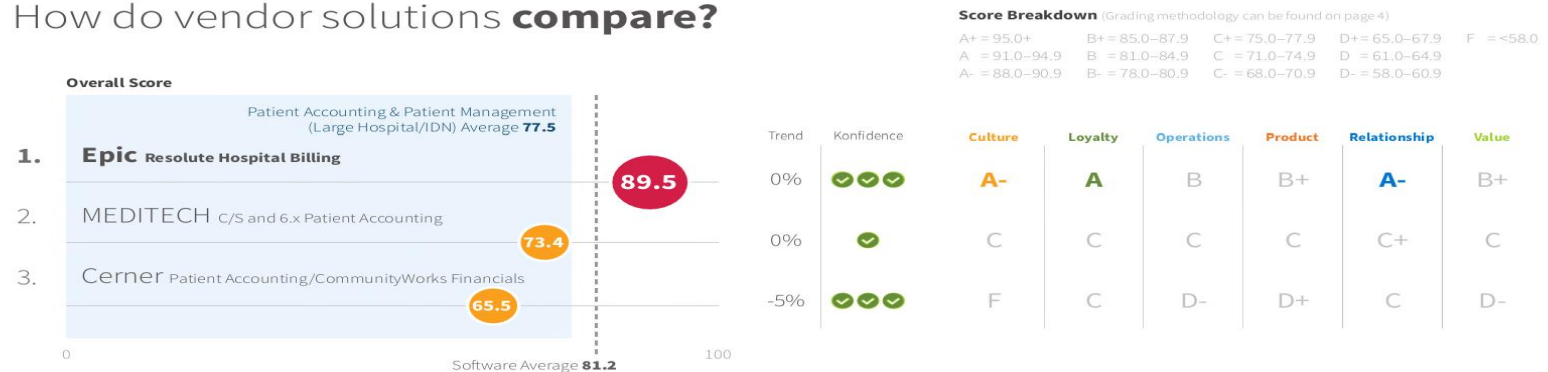


EHR Total Cost and Scenario Development

Revenue Cycle Management / Patient Accounting Comparative Data

Vendor Solution Comparison KLAS Patient Accounting and Patient Management (Large Hospital/IDN)

How do vendor solutions **compare?**



Solutions Not Ranked

*Limited Data Products

Allscripts Paragon Financials (McKesson)	Score 51.4*
Virence Health Centricity Business (Hospital) (GE Healthcare)	81.0*

Component [C], Not Primary [NP], or Regional [R]

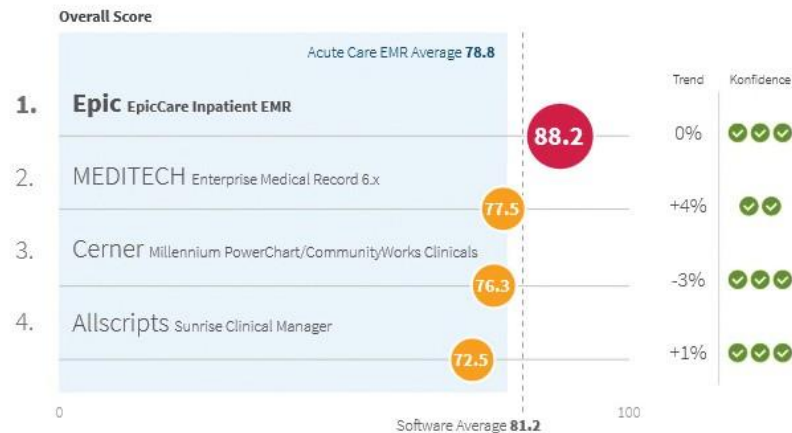
Cerner Soarian Financials [NP]	65.9
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Definitions can be found on page 145.

Acute Care EHR Comparative Data

KLAS 2019 – Acute Care EHR (Large Hospital/IDN)

- Epic leads the vendor rankings with 88.2
- Cerner (Millennium/PowerChart/CommunityWorks Clinicals) follows with 76.3



Best in KLAS 2019: Software and Services; Acute Care EMR (Large Hospital/IDN) (2019)



Cerner Commissioned KLAS Summit

Cerner Commissioned KLAS Summit

- In August 2018, representatives from some of Cerner's largest and most complex clients met with Cerner executives to participate in a revenue cycle summit
- The purpose of this summit was to provide insights that would enable Cerner to conduct a significant pivot to regain client confidence and deliver a world class RCM solution
- Cerner made commitments to their clients on issues to be addressed and enlisted KLAS to monitor and produce reports on Cerner's progress on those commitments
- The next slides are derived from that report and are presented to show how Cerner is striving to make improvements in transparency to the client base, as well as deliver on commitments they have made to deliver the product

Cerner Commissioned KLAS Summit

On the Relationship

- Two thirds of respondents believe Cerner has made customer RCM success a priority
- 88% feel their relationship with Cerner is improving, up from 44% in Q1 2019

On the Product

- 56% of respondents cannot report a single win that Cerner has delivered since the August 2018 Summit
- 94% report an urgent need for tangible improvements that directly impact their organization

Q2 2019 Respondents

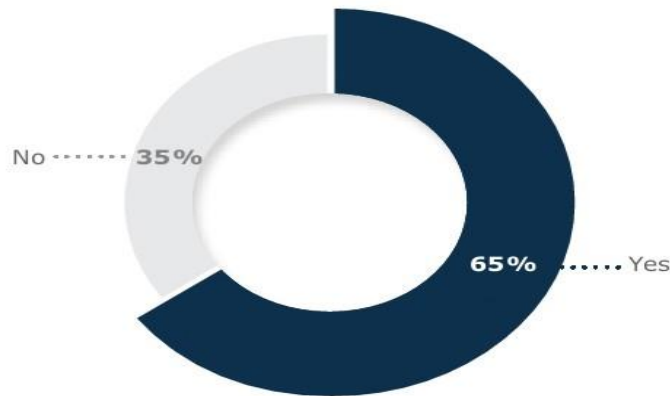


Do Cerner Customers Feel That the Relationship Is Improving?



Cerner Makes Strides in Improving Relationships with Customers

Do You Believe That Cerner Has Made Customer Success in RCM a Top Priority? (n=17)



KLAS INDICATORS

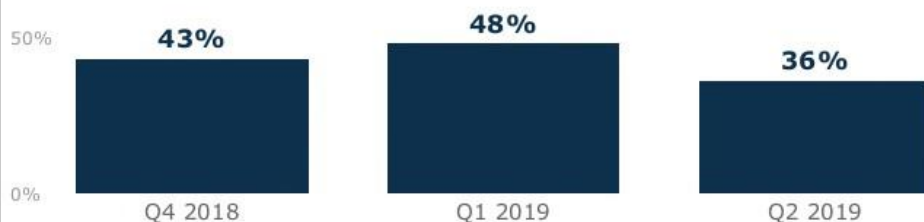
- Since the 2018 Summit, the changes observed by clients focus on leadership and communication, not product improvement
- Customers feel valued and express that to them Cerner is now ready to partner with them, something that was not present over the last five years

What Has Raised Customer Confidence That Cerner Is Making Needed Changes?

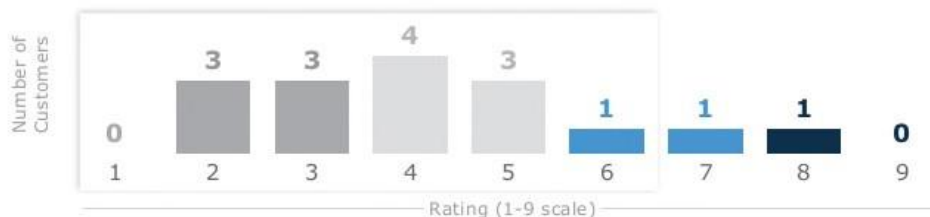


Customers Continue to Wait for Tangible Solution Improvements

How Close Is Cerner to Delivering a World-Class RCM Solution?



Satisfaction with Tangible Improvements since the August 2018 Summit That Have Impacted Your Organization's RCM Strategy



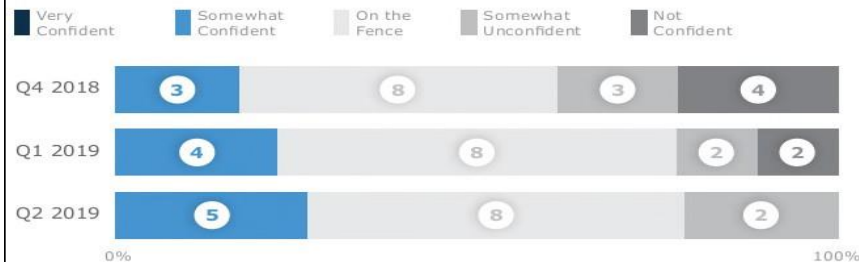
KLAS OBSERVATIONS

- In the year since the 2018 Summit, customers who attended have not seen meaningful improvements to the product
- As a result, many report decreased confidence in the solution
- As Cerner has become more transparent, some customers found the product is further from ideal than initially believed
- Concern with the lack of tangible results continues to grow and the need for results is becoming more urgent as time passes

Customers Continue to Wait for Tangible Solution Improvements, cont.

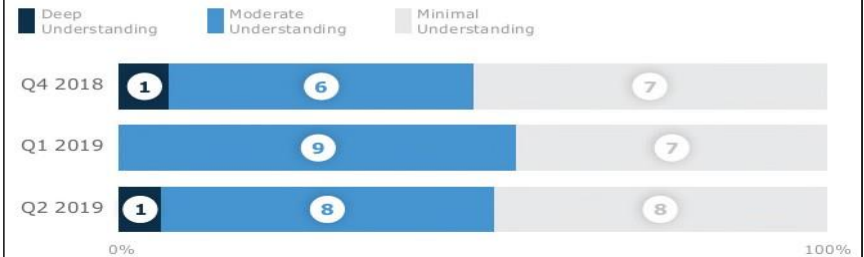
How Confident Are Customers That Cerner Will Deliver a World-Class RCM Solution?

Cerner clients only

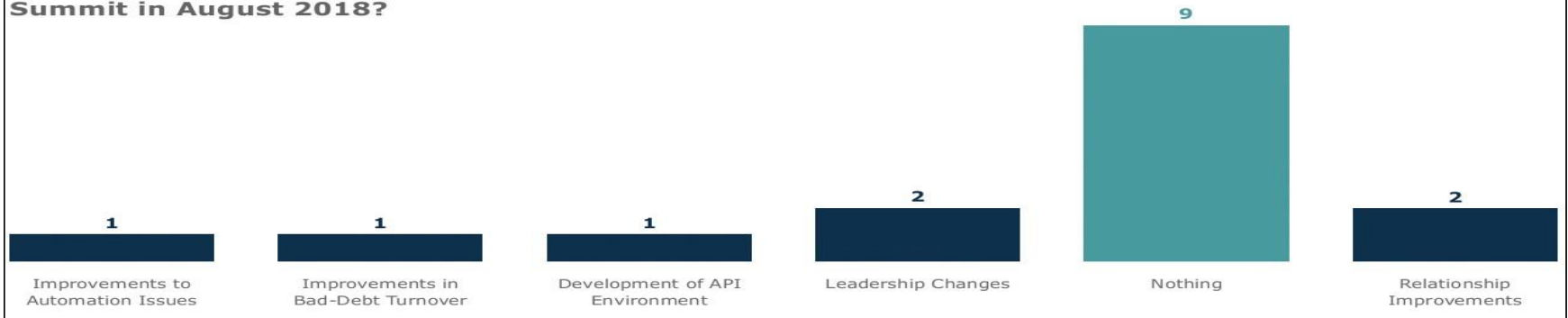


How Well Does Cerner Understand What It Takes to Deliver a World-Class RCM Solution?

Cerner clients only



What Has Been the Biggest RCM Win That Cerner Has Delivered for Your Organization since the Summit in August 2018?



Cumberland's Assessment

Cumberland's Assessment Key

- Based upon agreed priority level of the Driving Factors for researching potential change of an EHR Platform (reference slide 4 for listing of Driving Factors) for Broward, the below assessment guide depicts numerical values that correspond with a specific outcome

Key	Assessment Guidance
4	The driving factor for change exceeds the required level of confidence for an optimal outcome and operational performance excellence
3	The driving factor for change meets the required level of confidence for an optimal outcome and operational performance excellence
2	The driving factor for change partially meets the required level of confidence for an optimal outcome and operational performance excellence
1	The driving factor for change does not meet the required level of confidence for an optimal outcome and operational performance excellence

Implementation Scenario Rankings Against Driving Factors

	Cerner Patient Accounting	Epic Connect	Epic Direct
Cost to Implement and Maintain	3	2	1
Impact to Organization as it Relates to Change	3	1	1
Revenue Cycle Functionality	2	3	3
Ability to Maintain and Return to Baseline Revenue Cycle KPIs	2	4	4
Clinical Integration with Surrounding Hospitals	3	3	3
KLAS Rankings	2	3	3
Score*	2.5	2.6	2.5

**Total score assumes equal weighting amongst all of the driving factors*

1 = Does Not Meet 2 = Partially Meets 3 = Meets 4 = Exceeds



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EHR Total Cost and Scenario Development

Financial Comparison of Vendors Evaluated

	Current IT Spend		Total Implementation Cost Estimates – Vendors Evaluated					
	Cerner Millennium		Cerner Patient Accounting		Epic Connect with MHS		Epic Direct	
	Capital Cost	Operating Cost	Capital Cost	Operating Cost	Capital Cost	Operating Cost	Capital Cost	Operating Cost
Year 1 Allocations	-	\$17.3M	\$14M	\$6.8M	\$26M	\$4.8M	\$35M	\$10.2M
Spend Over 10 Years	-	\$122M	\$22.6M	\$51.3M	\$46M	\$151M	\$62M	\$182M
Total	\$122M		\$74M		\$197M		\$244M	

\$196M

Impact to Organization as it Relates to Change

- A transition from INVISION to Cerner Patient Accounting is considered a moderate change to the Broward Health organization
- A transition from Cerner to Epic is considered a significant change to the Broward Health organization
- Adoption of a moderate change in Broward Health's EHR platform will require change management principles that are embedded within Cerner's implementation methodology
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Organizational Change Management – Impact Areas

Cerner Patient Accounting	
Organizational Impact	
People	2
Process	3
Technology	2
Score	2.3

Epic Connect with MHS	
Organizational Impact	
People	4
Process	4
Technology	4
Score	4

Epic Direct	
Organizational Impact	
People	4
Process	4
Technology	4
Score	4

1 = No Impact

2 = Slight Impact

3 = Moderate Impact

4 = Significant Impact

Cerner Patient Accounting

- Cerner Patient Accounting has some functional limitations that require a solid implementation and manual workarounds in order to make it work:
 - Rebilled claims do not contain the same claim number as the original, forcing staff to manually track this in a spreadsheet or within other mechanisms to track the lifecycle of the claim
 - Medicare rule to combine OP and IP encounters into one claim cannot be automatically performed by the system, but must be combined manually
 - Within aged AR reports, user can drill down to encounter level in the aging buckets but not at the “grand total.” Often requires 4 spreadsheets to achieve overall analysis of aging AR
 - 835s received from a secondary/tertiary payer before a secondary/tertiary payer is assigned, Cerner will use the payer from the 835 and select the first payer that is found often resulting in inaccuracy and rework
 - Adjustment rules cannot be written based upon remittance remarks. The system will not read this code set on the remit
 - Must add diagnosis to every Recurring encounter. Other systems allow to code the first encounter, then it flows to subsequent encounters. Only need to code if the diagnosis changes

Epic Hospital Billing / Professional Billing

- Epic's Revenue Cycle product with Resolute HB/PB does not require manual workarounds to be in place in order to be fully functional within an organization
- Cash collections with co-pay alerts and the comprehensive co-pay collections report from Resolute PB is a comprehensive tool for POS Collections
- Seamless denial management functionality, integration to worklists with automatic eligibility checking provide ability for organizations to lower their claims denial rate
- Epic's implementation methodology is prescriptive and provides a disciplined path toward a successful install and maintaining/improving KPIs

Ability to Maintain and Return to Baseline KPIs

	Cerner Patient Accounting	Epic HB/PB
Cash Collections	3	4
Days in A/R	1	3
Clean Claim Rate / Denials	3	4
Charge Capture Adoption	3	4
Score	2.5	3.75

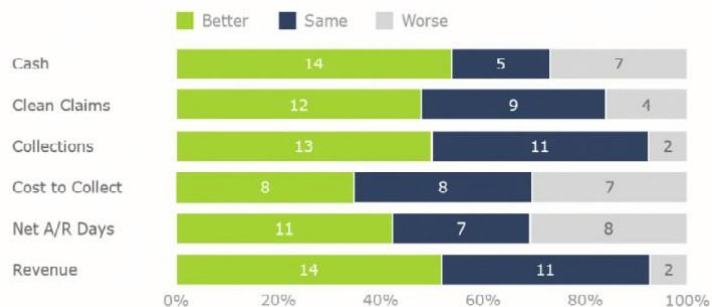
1 = Not Achieving Baseline 2 = Nearly Back to Baseline 3 = Back to Baseline 4 = Exceeding Baseline

*KPI information for both vendors referenced from the KLAS Patient Accounting Report from August 2018 (slide 34).
Additional information referenced from Cerner Revenue Cycle Summit white paper from KLAS on August 2018. Sample size of 16 hospital systems and Epic KPI information referenced from HIMSS analytics.*

Ability to Maintain and Return to Baseline KPIs – Vendor Comparisons

Cerner Patient Accounting

Current Financial Performance vs. Before Going Live



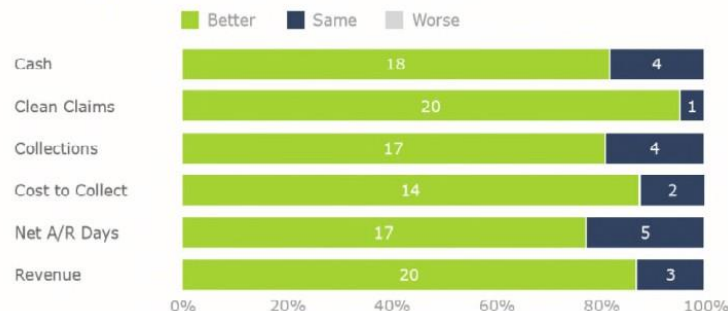
Average A/R Days

(n=28)

50.3

Epic Resolute Hospital Billing

Current Financial Performance vs. Before Going Live



Average A/R Days

(n=21)

41.9

KPI information referenced from the KLAS Patient Accounting report on transitioning from legacy revenue cycle systems August 2018.

Implementation Scenarios and Pros/Cons Analysis

Cerner Patient Accounting – Pros/Cons

Implementation Scenario Description	
<ul style="list-style-type: none"> Replace Siemens INVISION revenue cycle platform with Cerner Patient Accounting, which includes Patient Access, Ambulatory Billing, Ambulatory Practice Management, Hospital Billing, Professional Billing, and updates to Content360. Maintain status quo with Cerner Millennium. 	
Pros	Cons
<ul style="list-style-type: none"> Full integration with Cerner Millennium in order to maximize a clinically driven revenue cycle (i.e., simple visit charge automation, auto-scheduling, clinical denials management, seamless work queue management and flow of information surrounding bill edits to clinicians and front office workflow) Not needing to unravel an already implemented Cerner Millennium solution Does not require partnership, disrupting current governance model; allows to maintain direct ownership Training requirement for Cerner Patient Accounting is significantly less than either transition to Epic Does not require hiring additional IT staff to current staffing model for ongoing support Work queue management from business office to clinician and physician is integrated. Does not require a separate login account to access required edits and work queues (less interfaces) Maintains Broward Health's HIMSS level 6 distinction Implementation is minimally disruptive to clinicians and does not require an organizational change management project to ensure success 	<ul style="list-style-type: none"> Current gaps in functionality present the need for manual workarounds and adding third party systems/bolt-ons in order to address (i.e., front-end workflow, back-office workflow, standard reporting capabilities and DNFB workflow) Roadmap for Cerner to address functional gaps and optimization of their Patient Accounting platform extends out to 2024 Implementation results in longer time to get back to baseline KPIs or improve upon KPIs

Epic Connect Phased / Fatal Flaw Analysis

Implementation Scenario Description
<ul style="list-style-type: none">• Replace Siemens Invision with Memorial Healthcare System's instance of Epic Hospital Billing (HB) and Epic Professional Billing (PB). Memorial Healthcare System's instance of EpicCare Ambulatory and EpicCare Inpatient will be implemented once Epic Revenue Cycle and operations have stabilized.
Findings from Fatal Flaw Analysis
<ul style="list-style-type: none">• Benefits from a fully integrated Epic system would be realized later in the implementation lifecycle and is not a supported best practice implementation approach from Epic. This implementation scenario would require approval/sign off from Judy Faulkner• Licenses for Epic are enterprise licenses and are not separated by application type, even within a phased connect offering. Broward Health would incur full software license fees for the entire Epic suite• Phased approach to implementing Epic will require Broward Health to maintain Cerner Millennium, NextGen and Cerner Invision while requiring IT resources to support the newly implemented Epic HB/PB and supporting 3rd party software• Implementation timeline increases putting Broward in implementation mode for a longer period of time, extending the cost of implementation and stabilization timeline for the organization• Temporary interfaces will need to be developed, tested and maintained between Epic HB/PB and Cerner Millennium• No increased benefit from Broward Health current state with Cerner

Epic Connect Pros/Cons

Implementation Scenario Description	
<ul style="list-style-type: none"> Replace Siemens INVISION and Cerner Millennium with Memorial Healthcare System's instance of Epic Hospital Billing (HB), Epic Professional Billing (PB), EpicCare Ambulatory and EpicCare Inpatient. 	
Pros	Cons
<ul style="list-style-type: none"> Single integrated platform that does not require the need for manual workarounds to successfully utilize the functionality Standardizes Broward Health on a single integrated platform leveraging MHS's mature model and foundation build that is in place, functional and proven, while not having to wait years for key functionality Accelerated path to implementation with optimized workflows and pre-built foundation from MHS, which allows for a shorter timeline to implement in comparison to Epic direct and leverages best practices Allows for more seamless sharing of clinical data and integration between Broward Health and Memorial Healthcare System facilities – acts as one hospital system servicing patients of Broward County Provides proven 3rd-party integration for those 3rd-party applications extended to Broward Health, thereby reducing typical integration risks inherited with an Epic direct implementation Provides an already established HIMSS Level 7 application platform that allows Broward Health to inherit a path toward increased quality, safety, productivity and satisfaction Would inherit a revenue cycle system that improves upon current revenue cycle KPIs (i.e., MHS days in A/R improved from 45 to 35 post go-live) 	<ul style="list-style-type: none"> Organization will undergo significant change across the enterprise regarding a prescribed direction from Memorial Healthcare System as it relates to people, process and technology Broward Health becomes participants in Memorial Healthcare System's governance model and removes direct ownership; both organizations lose autonomy Training entire organization on a new EHR platform takes away resources from productive time with patients and their day-to-day operational responsibilities

Epic Direct Pros/Cons

Implementation Scenario Description	
<ul style="list-style-type: none"> Replace Siemens INVISION and Cerner Millennium with Epic Hospital Billing (HB), Epic Professional Billing (PB), EpicCare Ambulatory and EpicCare Inpatient. 	
Pros	Cons
<ul style="list-style-type: none"> Single integrated platform that does not require the need for manual workarounds to successfully utilize the functionality Standardizes Broward Health on a single integrated platform leveraging Epic's current state best practice's and recommendations, while not having to wait years for key functionality Allows for autonomy for Broward Health to own their own Epic governance model and does not rely on a partnership with another healthcare organization Allows Broward Health to build their own instance of Epic utilizing Epic's foundation system as a baseline 	<ul style="list-style-type: none"> Organization will undergo significant change across the enterprise, having to make their own decisions as it relates to change from a people, process and technology standpoint, resulting in the need for an OCM process in parallel to implementation Broward Health must commit to a large upfront capital investment Will require Broward Health to hire resources to their existing IT organization in order to cover the need of 28 additional resources to current staffing model for ongoing support of Epic Path to implementation will not be accelerated and will follow a more traditional Epic implementation approach and timeline Training entire organization on a new EHR platform takes away resources from productive time with patients and their day-to-day operational responsibilities Potential for integration risks from a third-party application standpoint

Recommendations and Next Steps

Our Perspective

- Over the duration of Cumberland's engagement with Broward Health, having interaction with all levels of employees, Cumberland has not observed or learned of a requirement for Broward Health to switch EHR platforms
- Cerner Patient Accounting has deficits; Cerner has a roadmap to address deficiencies by 2024
- INVISION is not Broward Health's long-term patient accounting platform
- There will be a financial and maintenance impact to support current portfolio of 3rd Party Applications and Bolt-Ons required to run INVISION

Our Perspective *Cont'd*

- Each implementation path has inherent risks and potential financial implications:
 - Broward decides to replace Cerner Millennium and INVISION by partnering with Memorial Healthcare System to implement Epic Connect
 - Significant operational disruption to people, process and technology
 - No direct ownership of current governance model (lose autonomy by being absorbed into MHS governance model)
 - Larger capital cost investment than just implementing Cerner Patient Accounting and supporting applications
 - Broward decides to replace Cerner Millennium and INVISION by partnering directly with Epic
 - Significant operational disruption to people, process and technology
 - Large upfront capital investment
 - Broward decides to implement Cerner Patient Accounting
 - Current Cerner Patient Accounting functionality has deficits; current roadmap to address deficits goes to 2024
 - Longer time to return to baseline revenue cycle KPIs

Recommendations and Next Steps

- If Broward Health has a specific requirement that would lead to a potential switch in their current EHR vendor, Epic is the industry leader and grades the best in KLAS
- In considering Epic, determine whether you are looking for a partnership or need to stay independent – there is a price for both
- In considering replacing INVISION with Cerner Patient Accounting:
 - Challenge Cerner to allow you the ability to dictate your own destiny
 - Own the build process in order to right-fit manual workflows and to decide where you want to rely on your 3rd party bolt-on applications to assist
 - Be willing to wait for the product to become more mature within the marketplace and use your current Cerner account resources to stay informed regarding their Cerner Patient Accounting Roadmap to 2024
- Explore Soarian Financials as a comparable Patient Accounting solution to Cerner Patient Accounting

Additional Considerations

- With any solution that is selected for your go-forward EHR platform, perform an operational analysis on CDM and EMPI and plan to optimize these areas before starting a new revenue cycle implementation project
- Leverage the overall Cost Model provided for Cerner Patient Accounting to negotiate a better position on your current Cerner Millennium contract
- Consider developing a Strategic Information System Plan that spans 5 years and looks at a potential requirements for a change in your EHR platform



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Appendix – Supporting Detail

Total Implementation Cost Estimate Detail and Assumptions

Cost of Cerner Patient Accounting – Key Assumptions

Cost Category	Key Assumptions
Software	<ul style="list-style-type: none"> • Current IT spend for Cerner Millennium calculated based upon annual current spend summary provided by Cerner • Cerner license software fees provided by Cerner estimated at \$997,380 spread across 2 years • Cerner 3rd party software, required subscriptions, transaction services and updates to Content360 estimated at \$2,174,222 spread across 2 years • Cerner annual application maintenance fees provided by Cerner estimated at \$205,370 annually • Cerner shared computing and EDI recurring fees estimated at \$798,000 annually • Cerner subscriptions and transaction services recurring fees estimated at \$1,412,984 annually • Cerner annual maintenance subject to annual calendar year increases. Cost model accounts for annual increases of 2.5% starting in year 4 through year 10
Implementation	<ul style="list-style-type: none"> • Cerner implementation fees provided by Cerner estimated at \$7,296,960 • Implementation timeline estimated at 18 months, starting in Jan 2021 • Cerner will provide standard CRE, EL, CE, EC, IA/SE for the engagement and will include financial alignment executive, revenue cycle architect, solution architect for each application area and learning manager • Travel costs for Cerner resources to Broward Health estimated at \$1,561,000
Staffing	<ul style="list-style-type: none"> • All internal resources listed as operational expenses with a labor rate of \$55/hr • All external resources listed as capital expenses with a fully loaded rate of \$180/hr

Cost of Cerner Patient Accounting – 10 YR Cost Summary

10-Year Project Estimate												
Cost Estimate	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL	
Cerner Software	\$ 524,880	\$ 472,50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 997,38	0
Cerner Implementation	\$ 3,398,480	\$ 3,398,48	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,796,96	0
3rd Party Solutions	\$ 1,087,111	\$ 1,087,11	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,174,22	2
Technology	\$ 6,210	\$ 6,21	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,42	0
Staffing	\$ 6,607,163	\$ 2,465,75	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,072,91	7
Travel and OOPs	\$ 1,170,750	\$ 390,25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,561,00	0
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
Capital Costs	\$ 12,794,594	\$ 7,820,30	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,614,89	9
Contingency	\$ 1,279,459	\$ 782,03	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,061,49	-
Current EMR Estimate	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL	
Cerner Millennium Division	\$ 14,074,054	\$ 8,602,33	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 22,676,38	0
Costs												-
Total Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
Cerner Millennium Division	\$ 13,841,146	\$ 39,24	\$ 150,05	\$ 155,19	\$ 160,45	\$ 165,84	\$ 171,37	\$ 7,747,840	\$ 182,85	\$ 7,747,840	\$ 1,432,35	6
3rd Party Solutions	\$ 300,000	\$ 9,830,38	\$ 9,425,73	\$ 7,752,00	\$ 7,747,84	\$ 7,747,84	\$ 7,747,84	\$ 7,747,84	\$ 7,747,84	\$ 7,747,84	\$ 87,336,31	6
Staffing	\$ 3,489,133	\$ 578,24	\$ 1,412,98	\$ 1,448,30	\$ 1,484,51	\$ 1,521,62	\$ 1,559,67	\$ 3,489,133	\$ 1,638,62	\$ 3,489,133	\$ 13,222,23	8
Technology	\$ -	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 3,489,13	\$ 34,891,33	8
Total Operating	\$ 17,330,279	\$ 13,319,521	\$ 12,914,864	\$ 11,241,142	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 122,227,644	9
Total Current EMR Costs	\$ 17,330,279	\$ 13,319,521	\$ 12,914,864	\$ 11,241,142	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 11,236,973	\$ 122,227,644	9
Offsets	\$ 5,917,470	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,036,849	\$ -	\$ -	\$ 2,119,138	8
Staffing Offsets	\$ -	\$ 3,120,46	\$ 1,844,83	\$ 1,881,73	\$ 1,919,36	\$ 1,957,75	\$ 1,996,91	\$ -	\$ 2,077,58	\$ -	\$ 24,872,11	9
IT Upgrade Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
Operating Costs	\$ 6,217,470	\$ 3,937,45	\$ 4,205,87	\$ 4,303,18	\$ 4,402,73	\$ 4,504,59	\$ 4,608,80	\$ 4,715,418	\$ 4,824,50	\$ 4,977,596	\$ 46,697,63	4
Contingency	\$ 621,747	\$ 393,74	\$ 420,58	\$ 430,31	\$ 440,27	\$ 450,45	\$ 460,88	\$ 471,542	\$ 482,45	\$ 497,760	\$ 4,669,76	3
Total Capital Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
Software	\$ 621,747	\$ 393,74	\$ 420,58	\$ 430,31	\$ 440,27	\$ 450,45	\$ 460,88	\$ 471,542	\$ 482,45	\$ 497,760	\$ 4,669,76	3
Total Operating Costs	\$ 6,839,217	\$ 4,331,20	\$ 4,626,46	\$ 4,733,50	\$ 4,843,01	\$ 4,955,05	\$ 5,069,68	\$ 5,186,960	\$ 5,306,95	\$ 5,475,356	\$ 51,367,39	8
Total Project Cost	\$ 25,910,271	\$ 12,933,540	\$ 4,626,46	\$ 4,733,50	\$ 4,843,01	\$ 4,955,05	\$ 5,069,68	\$ 5,186,960	\$ 5,306,95	\$ 5,475,356	\$ 74,043,78	6
Offsets	\$ -	\$ -	\$ 1,614,57	\$ 1,654,93	\$ 1,696,30	\$ 1,738,71	\$ 1,782,18	\$ -	\$ 1,872,40	\$ -	\$ 14,105,08	1
Total Project Offsets	\$ -	\$ -	\$ 1,614,57	\$ 1,654,93	\$ 1,696,30	\$ 1,738,71	\$ 1,782,18	\$ 1,826,739	\$ 1,872,40	\$ 1,919,218	\$ 14,105,08	1

Cost of Epic Connect with MHS – Key Assumptions

Cost Category	Key Assumptions
Software	<ul style="list-style-type: none"> Epic license fees provided by Epic for “large” connect clients estimated at \$17,100,000 spread across 3 years Epic annual maintenance fees provided by Epic for “large” connect clients estimated at \$3,200,000 annually MyChart and Lucy personal health record access estimated at 40,000 records starting in year 2, increasing by 50% annually up until year 5 Epic annual maintenance subject to annual calendar year increases. Cost model accounts for annual increases of 2.5% starting in year 3 through year 10 Epic required 3rd party software fees are based upon Cumberland baseline from like-sized clients MHS 3rd party software extensions to Broward Health not included in the cost model
Hosting	<ul style="list-style-type: none"> MHS hosting fees calculated at \$3,340,510 annually and assumes 3,000 Broward Health concurrent users. Estimate includes fees for Epic base infrastructure, application delivery, and dual premise networking MHS annual hosting subject to annual calendar year increases. Cost model accounts for annual increases of 2.5% starting in year 3 through year 10
Implementation	<ul style="list-style-type: none"> Epic implementation fees provided by Epic for “large” connect clients estimated at \$4,550,000 Implementation timeline with MHS estimated at 16 months, starting in Jan 2021 Epic will provide project coordination, application implementation services, assistance with interfaces and data conversion Travel costs for Epic resources estimated by Epic at \$2,150,000 Assumes no build deviation from MHS foundation system
Staffing	<ul style="list-style-type: none"> All internal resources listed as operational expenses with a labor rate of \$55/hr All external resources listed as capital expenses with a fully loaded rate of \$180/hr All MHS resources listed as capital expenses with a labor rate of \$55-\$65/hr

Cost of Epic Connect with MHS – 10 YR Cost Summary

10-Year Project Estimate											
Cost Estimate	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL
Epic Software	\$ 5,700,000	\$ 5,700,000	\$ 5,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,100,000
MHS Hosting	\$ 3,340,510	\$ 278,376	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,618,886
Epic Implementation	\$ 3,375,000	\$ 1,125,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,500,000
Required 3rd Party Software	\$ 318,727	\$ 26,561	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 345,288
Staffing	\$ 9,881,845	\$ 4,022,107	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 13,903,952
Travel and ODPs	\$ 1,984,615	\$ 165,385	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,150,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Costs	\$ 24,600,698	\$ 11,317,428	\$ 5,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 41,618,126
Contingency 10%	\$ 2,460,070	\$ 1,131,743	\$ 570,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,161,813
Total Capital Costs	\$ 27,060,768	\$ 12,449,171	\$ 6,270,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 45,779,939
Epic Software	\$ -	\$ 3,294,000	\$ 3,421,000	\$ 3,550,000	\$ 3,681,050	\$ 3,814,201	\$ 3,902,506	\$ 3,993,019	\$ 4,085,794	\$ 4,180,889	\$ 33,922,460
MHS Hosting	\$ -	\$ 3,062,134	\$ 3,424,023	\$ 3,509,623	\$ 3,597,364	\$ 3,687,298	\$ 3,779,480	\$ 3,873,967	\$ 3,970,817	\$ 4,070,087	\$ 32,974,794
Required 3rd Party Software	\$ -	\$ 1,212,914	\$ 1,243,237	\$ 1,274,318	\$ 1,306,176	\$ 1,338,830	\$ 1,372,301	\$ 1,406,608	\$ 1,441,774	\$ 1,477,818	\$ 12,073,975
Staffing	\$ 4,302,641	\$ 6,623,955	\$ 5,593,974	\$ 5,705,854	\$ 5,819,971	\$ 5,936,370	\$ 6,055,098	\$ 6,176,200	\$ 6,299,724	\$ 6,425,718	\$ 58,939,503
Travel and ODPs	\$ 117,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,600
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Costs	\$ 4,420,241	\$ 14,193,003	\$ 13,682,234	\$ 14,039,795	\$ 14,404,560	\$ 14,776,700	\$ 15,109,385	\$ 15,449,794	\$ 15,798,108	\$ 16,154,512	\$ 138,028,333
Contingency 10%	\$ 442,024	\$ 1,419,300	\$ 1,368,223	\$ 1,403,979	\$ 1,440,456	\$ 1,477,670	\$ 1,510,939	\$ 1,544,979	\$ 1,579,811	\$ 1,615,451	\$ 13,802,833
Total Operating Costs	\$ 4,862,265	\$ 15,612,304	\$ 15,050,457	\$ 15,443,774	\$ 15,845,016	\$ 16,254,369	\$ 16,620,324	\$ 16,994,774	\$ 17,377,919	\$ 17,769,963	\$ 151,831,166
Total Project Cost	\$ 31,923,033	\$ 28,061,474	\$ 21,320,457	\$ 15,443,774	\$ 15,845,016	\$ 16,254,369	\$ 16,620,324	\$ 16,994,774	\$ 17,377,919	\$ 17,769,963	\$ 197,611,104

Current EMR	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL
Cerner Millennium	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
INVISION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cerner Millennium	\$ 12,329,850	\$ 10,472,340	\$ 9,230,387	\$ 8,825,731	\$ 7,752,009	\$ 94,190	\$ -	\$ -	\$ -	\$ -	\$ 48,704,507
INVISION	\$ 3,368,806	\$ 3,368,806	\$ 859,451	\$ 849,893	\$ 849,893	\$ 145,522	\$ -	\$ -	\$ -	\$ -	\$ 9,442,371
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating	\$ 15,698,656	\$ 13,841,146	\$ 10,089,838	\$ 9,675,624	\$ 8,601,902	\$ 239,712	\$ -	\$ -	\$ -	\$ -	\$ 59,146,978
Total Current EMR	\$ 15,698,656	\$ 13,841,146	\$ 10,089,838	\$ 9,675,624	\$ 8,601,902	\$ 239,712	\$ -	\$ -	\$ -	\$ -	\$ 58,146,978

Offset Estimate	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL
Software Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Staffing Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IT Upgrade Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Contingency 10%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Software Offsets	\$ -	\$ -	\$ 1,467,792	\$ 1,504,487	\$ 1,542,099	\$ 1,580,651	\$ 1,620,168	\$ 1,660,672	\$ 1,702,189	\$ 1,744,743	\$ 12,822,801
Staffing Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IT Upgrade Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Offsets	\$ -	\$ -	\$ 1,467,792	\$ 1,504,487	\$ 1,542,099	\$ 1,580,651	\$ 1,620,168	\$ 1,660,672	\$ 1,702,189	\$ 1,744,743	\$ 12,822,801
Contingency 10%	\$ -	\$ -	\$ 146,779	\$ 150,449	\$ 154,210	\$ 158,065	\$ 162,017	\$ 166,067	\$ 170,219	\$ 174,474	\$ 1,282,280
Total Operating Offsets	\$ -	\$ -	\$ 1,614,571	\$ 1,654,935	\$ 1,696,309	\$ 1,738,717	\$ 1,782,185	\$ 1,826,739	\$ 1,872,408	\$ 1,919,218	\$ 14,105,081
Total Project Offsets	\$ -	\$ -	\$ 1,614,571	\$ 1,654,935	\$ 1,696,309	\$ 1,738,717	\$ 1,782,185	\$ 1,826,739	\$ 1,872,408	\$ 1,919,218	\$ 14,105,081

Cost of Epic Direct – Key Assumptions

Cost Category	Key Assumptions
Software	<ul style="list-style-type: none"> Epic license fees provided by Epic for enterprise clients estimated at \$18,100,000 spread across 3 years Epic annual maintenance fees provided by Epic for enterprise clients estimated at \$3,200,000 annually MyChart and Lucy personal health record access estimated at 40,000 records starting in year 2, increasing by 50% annually up until year 5 Epic annual maintenance are subject to annual calendar year increases. Cost model accounts for annual increases of 2.5% starting in year 3 through year 10 Epic required 3rd party software fees are based upon Cumberland baseline from like-sized clients
Hosting	<ul style="list-style-type: none"> Epic hosting fees calculated at \$3,600,000 annually and assumes 3,000 Broward Health concurrent users Epic annual hosting subject to annual calendar year increases. Cost model accounts for annual increases of 2.5% starting in year 3 through year 10
Implementation	<ul style="list-style-type: none"> Epic implementation fees provided by Epic for enterprise clients estimated at \$11,850,000 Implementation timeline estimated at 18 months, starting in Jan 2021 Epic will provide project coordination, application implementation services, principal trainers, business intelligence development, implementation of Epic's interface starter set, and assistance with data conversion Travel costs for Epic resources estimated by Epic at \$2,150,000
Staffing	<ul style="list-style-type: none"> All internal resources listed as operational expenses with a labor rate of \$55/hr All external resources listed as capital expenses with a fully loaded rate of \$180/hr

Cost of Epic Direct – 10 YR Cost Summary

10-Year Project Estimate											
Cost Estimate	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL
Epic Software and Hosting	\$ 6,033,333	\$ 6,033,333	\$ 6,033,333	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,100,000
Epic Hosting	\$ 3,600,000	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,900,000
Epic Implementation	\$ 10,487,500	\$ 4,562,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,050,000
Required 3rd Party Software	\$ 318,727	\$ 26,561	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 345,288
Staffing	\$ 9,868,092	\$ 7,165,258	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,033,350
Travel and ODPs	\$ 1,984,615	\$ 165,385	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,150,000
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Costs	\$ 32,292,268	\$ 18,253,037	\$ 6,033,333	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 56,578,638
Contingency 10%	\$ 3,229,227	\$ 1,825,304	\$ 603,333	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,657,864
Total Capital Costs	\$ 35,521,495	\$ 20,078,341	\$ 6,636,667	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 62,236,502
Epic Software and Hosting	\$ -	\$ 3,294,000	\$ 3,421,000	\$ 3,550,000	\$ 3,681,050	\$ 3,814,201	\$ 3,902,506	\$ 3,993,019	\$ 4,085,794	\$ 4,180,889	\$ 33,922,460
Epic Hosting	\$ -	\$ 3,300,000	\$ 3,690,000	\$ 3,782,250	\$ 3,876,806	\$ 3,973,726	\$ 4,073,070	\$ 4,174,896	\$ 4,279,269	\$ 4,386,250	\$ 35,536,268
Required 3rd Party Software	\$ -	\$ 1,212,914	\$ 1,243,237	\$ 1,274,318	\$ 1,306,176	\$ 1,338,830	\$ 1,372,301	\$ 1,406,608	\$ 1,441,774	\$ 1,477,818	\$ 12,073,975
Staffing	\$ 10,112,041	\$ 12,132,150	\$ 7,171,061	\$ 7,314,482	\$ 7,460,772	\$ 7,609,987	\$ 7,762,187	\$ 7,917,431	\$ 8,075,779	\$ 8,237,295	\$ 83,793,186
Travel and ODPs	\$ 172,200	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 172,200
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Costs	\$ 10,284,241	\$ 19,939,064	\$ 15,525,298	\$ 15,921,050	\$ 16,324,804	\$ 16,736,745	\$ 17,110,064	\$ 17,491,954	\$ 17,882,616	\$ 18,282,253	\$ 165,498,089
Contingency 10%	\$ 1,028,424	\$ 1,993,906	\$ 1,552,530	\$ 1,592,105	\$ 1,632,480	\$ 1,673,675	\$ 1,711,006	\$ 1,749,195	\$ 1,788,262	\$ 1,828,225	\$ 16,549,809
Total Operating Costs	\$ 11,312,665	\$ 21,932,970	\$ 17,077,828	\$ 17,513,155	\$ 17,957,284	\$ 18,410,420	\$ 18,821,070	\$ 19,241,150	\$ 19,670,878	\$ 20,110,478	\$ 182,047,898
Total Project Cost	\$ 46,834,160	\$ 42,011,311	\$ 23,714,494	\$ 17,513,155	\$ 17,957,284	\$ 18,410,420	\$ 18,821,070	\$ 19,241,150	\$ 19,670,878	\$ 20,110,478	\$ 244,284,400


Current EMR	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL
Cerner Clinicals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
INVISION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cerner Clinicals	\$ 12,329,850	\$ 10,472,340	\$ 9,230,387	\$ 8,825,731	\$ 7,752,009	\$ 94,190	\$ -	\$ -	\$ -	\$ -	\$ 48,704,507
INVISION	\$ 3,368,806	\$ 3,368,806	\$ 859,451	\$ 849,893	\$ 849,893	\$ 145,522	\$ -	\$ -	\$ -	\$ -	\$ 9,442,371
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating	\$ 15,698,656	\$ 13,841,146	\$ 10,089,838	\$ 9,675,624	\$ 8,601,902	\$ 239,712	\$ -	\$ -	\$ -	\$ -	\$ 58,146,878
Total Current EMR	\$ 15,698,656	\$ 13,841,146	\$ 10,089,838	\$ 9,675,624	\$ 8,601,902	\$ 239,712	\$ -	\$ -	\$ -	\$ -	\$ 58,146,878

Offset Estimate	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	TOTAL
Total Capital Offsets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operating Offsets	\$ -	\$ -	\$ 789,571	\$ 809,310	\$ 829,543	\$ 850,282	\$ 871,539	\$ 893,327	\$ 915,661	\$ 938,552	\$ 6,897,786
Total Project Offsets	\$ -	\$ -	\$ 789,571	\$ 809,310	\$ 829,543	\$ 850,282	\$ 871,539	\$ 893,327	\$ 915,661	\$ 938,552	\$ 6,897,786

Implementation Scenarios

Supporting Detail

Cerner Patient Accounting Implementation Timeline

2021												2022					
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Cerner Align Phase			Cerner Engage Phase										Activate	Cerner Measure Phase			
<ul style="list-style-type: none">Project Startup (<i>scope, project charter, project plan</i>)Leadership AlignmentBaseline Revenue Cycle KPI DefinitionValue Management WorkshopsProject Team ReadinessCurrent State Data CollectionCurrent State Review			<ul style="list-style-type: none">Future State Definition and Future State ValidationUnit TestingSystem TestingIntegration Testing Sessions 1 & 2Paralell Claims TestingUser AcceptanceMaintenance and End User TrainingOperational ReadinessGo-Live Structure Definition (<i>command center activities, project team and super user staffing assignments, ticket triage and tracking, cutover planning</i>)										 CPA Go-Live	<ul style="list-style-type: none">Documentation of Project Lessons LearnedValue Achievement ReviewsHealth Check of Baseline Revenue Cycle KPIs and End User AdoptionDefine Future Plan for Enhancements / Optimization			

Excludes Cerner Contract Management and RevWorks Transition Services (Legacy A/R management)

- January 2021 Project Kick Off
- 18 Month Duration
- Supports 5 Acute Facilities, 1 CBO, ~80 Clinics, 125 Ambulatory Providers
- Implementation includes Patient Access, Practice Management, PowerChart Ambulatory, Patient Accounting and Supporting 3rd Party Solutions

Scope of Cerner Patient Accounting

■ Patient Access

- Cerner Patient Registration
- Cerner Enterprise Master Patient Index
- Cerner Eligibility and Benefits Checking
- Cerner Patient Tracking / Bed Management
- Cerner Patient Kiosk (5 Licenses)

■ Practice Management

- Cerner Practice Management – Scheduling and Registration
- Cerner Practice Management – Patient Accounting
- Cerner Patient Statements
- Cerner Patient Kiosk (20 Licenses)

■ Ambulatory

- Cerner PowerChart Ambulatory

■ Acute Back Office

- Cerner Patient Accounting
- HealtheAnalytics for Revenue Cycle
- Cerner Patient Statements

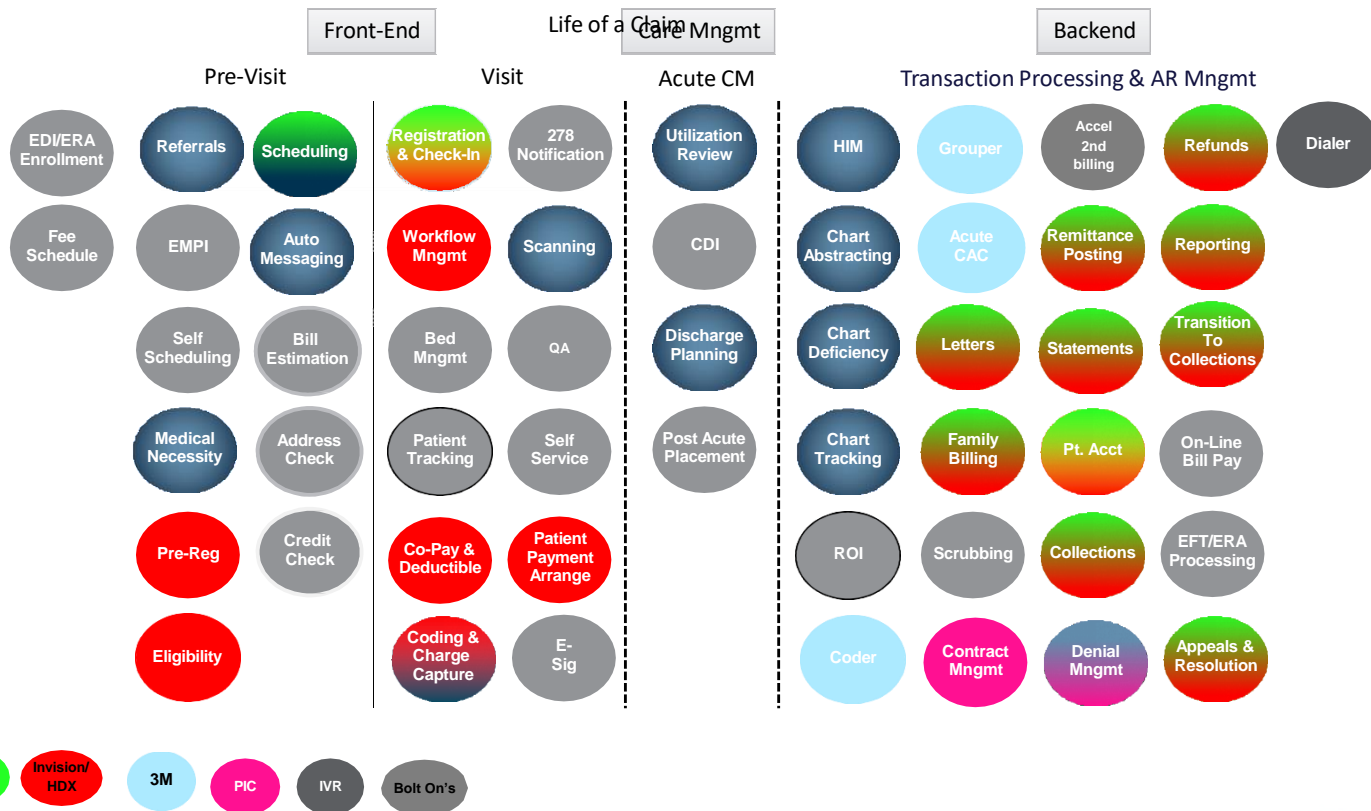
■ Ancillary Solutions/Services

- Project Management
- FSI/Interfaces
- Learning and Training Services
- Remote Hosting
- INVISION System Support – FY2023

■ 3rd Party Solutions/Services

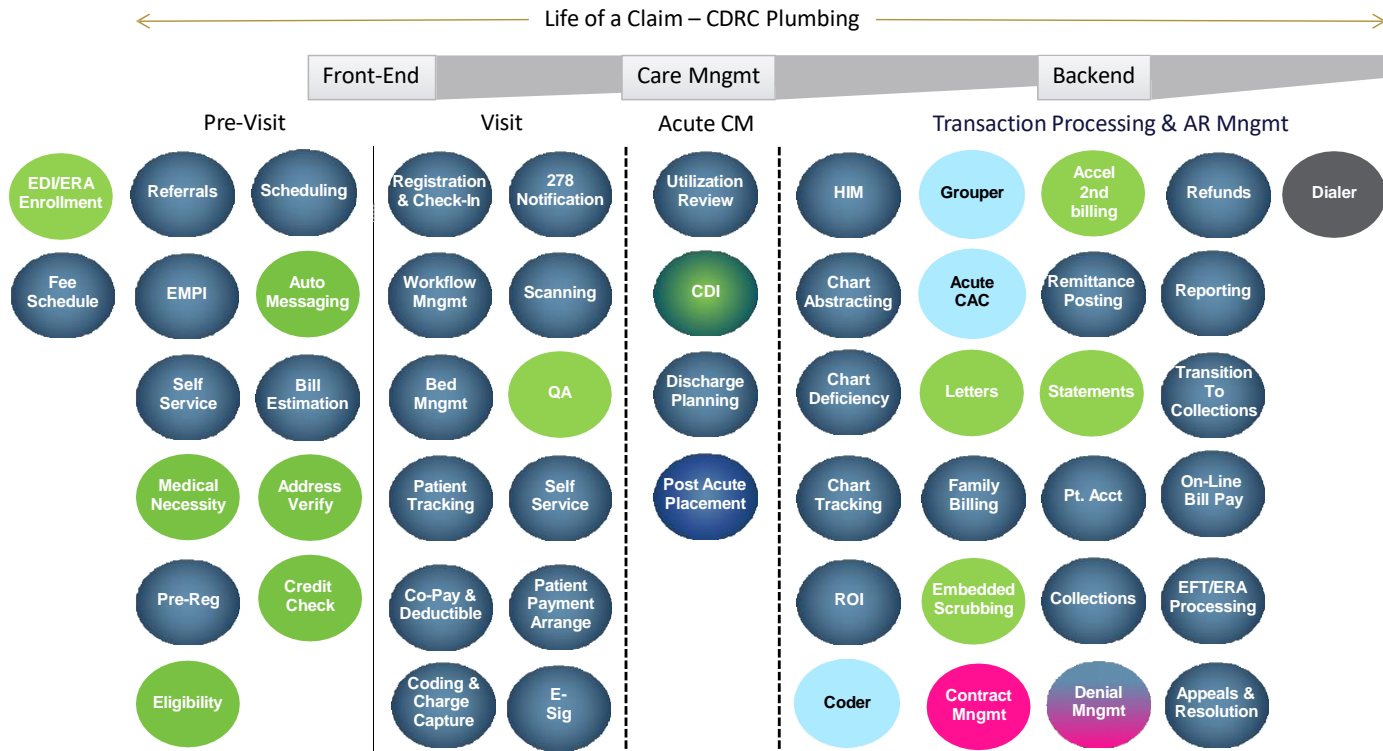
- Experian Finance Clearance
- Transaction Services
- Content360

Broward Health Current State Revenue Cycle Portfolio



EHR Total Cost and Scenario Development

Broward Health Future State Revenue Cycle Portfolio



EHR Total Cost and Scenario Development



Epic Connect / Big Bang Implementation Timeline

2021												2022			
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Epic Phase 0 Planning			Epic Phases 1-3 (Direction, Adoption and Testing)									Train and GL		Phase 5 Support	
<ul style="list-style-type: none"> Finalize Epic License Agreement Complete Contract Amendments for non-Epic 3rd Party Systems Setup 3rd Party Test Systems Complete Epic Scoping Decisions Project Team Staffing Data Conversion Extracts Complete Legacy Data Collection and Pre-Work Complete Hardware Walkthroughs Stand Up Project Governance with MHS Develop Training Plan Complete Facility Structure 			<ul style="list-style-type: none"> Finalize Project Planning and Application Scoping Direction Sessions Held by Epic Implementation Team and MHS KPIs Defined Project Team Completes Certification within Areas Required Complete Gorundwork Questionnaires MHS Foundation System Dellivered Configuration and Build Based Upon Decisions Made during Application Scoping Sessions (<i>User Templates, Speciality Screens, Masterfiles</i>) Workflow Sprints and Speciality-Specific Adoption Sessions Focusing on Organizational Specific Roles and Policies Content Build for Order Sets, Smartsets, Note Templates, 3rd Party Content Integration, Dashboards, Extracts, Workqueues, etc Implement Integrated Areas to Promote Successful Install Application and Integrated Testing Charge and Parallel Revenue Cycle Testing Interface Testing Training Lesson Plans Completed (<i>Identify Training Tracks, Review and Modify Curriculum, Build and Test Training Env, Class Setup</i>) Adoption Sessions Held with Project Stakeholders at Broward Health 									<ul style="list-style-type: none"> End Users Trained End-User Devices Deployed Pre-Live Checks (<i>IAR & GLRA</i>) Dress Rehearsals (<i>Technical, Workflow, Log-In Labs</i>) Go-Live Support Planning Go-Live 		<ul style="list-style-type: none"> Post-Live Support Post-Live Visits End-User Surveys Ongoing Training Long-Term Support Upgrades and Optimization 	

- January 2021 Project Kick Off
- 16 Month Duration
- Implementation will leverage MHS existing workflows with updated clinical content appropriate for Broward's scope of care
- 3rd party integration to include an extension of MHS existing applications and interface instances

Application Scope of Epic Connect

■ Patient Access

- Epic Grand Central ADT
- Epic Prelude
- Epic Cadence
- Epic Identity EMPI
- Epic MyChart Patient Portal
- Epic CRM

■ Revenue Cycle

- Epic Resolute Hospital Billing
- Epic Resolute Professional Billing
- Epic HIM
- Epic Tapestry Managed Care Admin
- EpicCare Clinical Case Management

■ Inpatient Clinical Applications

- EpicCare Inpatient
- Epic Willow Inpatient Pharmacy
- Epic ASAP
- Epic
Haiku/Canto/Limerick/Rover
- Epic Care Everywhere
- MyChart Bedside
- Epic Dorothy Home Care & Hospice
- Epic Nurse Triage
- Epic Long Term Care
- Epic Rehabilitation
- Epic Wound Care
- Epic Behavioral Health
- Epic Social Care
- Epic Beacon Oncology
- Epic Cupid Cardio

Application Scope of Epic Connect *Cont'd*

■ Inpatient Clinical Applications *Cont'd*

- Epic Bones Orthopedics
- Epic Stork
- Epic Beaker Lab
- Epic Anesthesia
- Epic Buggy Infection Control
- Epic OpTime
- Epic Phoenix Transplant System
- Epic Radiant

■ Ambulatory Clinical Applications

- EpicCare Ambulatory EMR
- EpicCare Urgent Care
- Willow Ambulatory Pharmacy System
- Epic Welcome Patient Kiosks

■ Reporting

- Epic Caboodle – Data Warehouse
- Epic Slicer Dicer – Analytics
- Epic Cosmos – Research Database
- Epic Cogito – AI
- Epic Healthy Planet – Pop Health

■ Suggested 3rd Party Applications

- Hyland, OnBase
- Emdeon
- 3M
- PIC – *Contract Management*
- CapsuleTech
- CBORD Food Services
- Elsevier CPM
- First Databank
- M*Modal
- RightFax

Application Scope of Epic Connect *Cont'd*

■ Suggested 3rd Party Applications *Cont'd**

- RightFax
- Pyxis Carefusion
- Snomed IMO
- Wolters Kluwer
- PACS
- Softlab SoftBank
- Televox
- AHCA AMA
- IVR

**Suggested 3rd party applications that MHS would extend to Broward Health. These have not been included within the cost estimates*

Epic Direct Implementation Timeline

2021												2022						
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	
Phase 0 Planning			Phase 1-3 (Direction, Adoption and Testing)											Train & GL	Phase 5 Support			
<ul style="list-style-type: none">Finalize Epic License AgreementComplete Contract Amendments for non-Epic 3rd Party SystemsSetup 3rd Party Test SystemsComplete Epic Scoping DecisionsProject Team StaffingData Conversion ExtractsComplete Legacy Data Collection and Pre-WorkComplete Hardware WalkthroughsStand Up Project GovernanceDevelop Training PlanComplete Facility Structure			<ul style="list-style-type: none">Finalize Project Planning and Application ScopingDirection Sessions Held by Epic Implementation TeamKPIs DefinedProject Team Completes Certification within Areas RequiredComplete Gorundwork QuestionnairesEpic Foundation System DelliveredConfiguration and Build Based Upon Decisions Made during Application Scoping Sessions (<i>User Templates, Speciality Screens, Masterfiles</i>)Workflow Sprints and Speciality-Specific Adoption Sessions Focusing on Organizational Specific Roles and PoliciesContent Build for Order Sets, Smartsets, Note Templates, 3rd Party Content Integration, Dashboards, Extracts, Workqueues, etcImplement Integrated Areas to Promote Successful InstallApplication and Integrated TestingCharge and Parallel Revenue Cycle TestingInterface TestingTraining Lesson Plans Completed (<i>Identify Training Tracks, Review and Modify Curriculum, Build and Test Training Env, Class Setup</i>)Adoption Sessions Held with Project Stakeholders at Broward Health											<ul style="list-style-type: none">End Users TrainedEnd-User Devices DeployedPre-Live Checks (<i>IAR & GLRA</i>)Dress Rehearsals (<i>Technical, Workflow, Log-In Labs</i>)Go-Live Support PlanningGo-Live	<ul style="list-style-type: none">Post-Live SupportPost-Live VisitsEnd-User ServeysOngoing TrainingLong-Term SupportUpgrades and Optimization			
Organizational Change Management (OCM)																		

- January 2021 Project Kick Off
- 18 Month Duration
- Implementation includes Epic's Foundation System Composed of Customer's Best Practice Content and Workflows

Application Scope of Epic Direct

■ Patient Access

- Epic Grand Central ADT
- Epic Prelude
- Epic Cadence
- Epic Identity EMPI
- Epic MyChart Patient Portal
- Epic CRM

■ Revenue Cycle

- Epic Resolute Hospital Billing
- Epic Resolute Professional Billing
- Epic HIM
- Epic Tapestry Managed Care Admin
- EpicCare Clinical Case Management

■ Inpatient Clinical Applications

- EpicCare Inpatient
- Epic Willow Inpatient Pharmacy
- Epic ASAP
- Epic
Haiku/Canto/Limerick/Rover
- Epic Care Everywhere
- MyChart Bedside
- Epic Dorothy Home Care & Hospice
- Epic Nurse Triage
- Epic Long Term Care
- Epic Rehabilitation
- Epic Wound Care
- Epic Behavioral Health
- Epic Social Care
- Epic Beacon Oncology
- Epic Cupid Cardio

Application Scope of Epic Direct *Cont'd*

■ Inpatient Clinical Applications

Cont'd

- Epic Bones Orthopedics
- Epic Stork
- Epic Beaker Lab
- Epic Anesthesia
- Epic Buggy Infection Control
- Epic OpTime
- Epic Phoenix Transplant System
- Epic Radiant

■ Ambulatory Clinical Applications

- EpicCare Ambulatory EMR
- EpicCare Urgent Care
- Willow Ambulatory Pharmacy System
- Epic Welcome Patient Kiosks

■ Reporting

- Epic Caboodle – Data Warehouse
- Epic Slicer Dicer – Analytics
- Epic Cosmos – Research Database
- Epic Cogito – AI
- Epic Healthy Planet – Pop Health

■ Suggested 3rd Party Applications

- Hyland, OnBase
- Experian
- 3M
- PIC – *Contract Management*
- CapsuleTech
- CBORD Food Services
- Elsevier CPM
- First Databank
- Mmodal

Application Scope of Epic Direct *Cont'd*

■ Suggested 3rd Party Applications *Cont'd**

- EllKay Data Archival
- RightFax
- Pyxis Carefusion
- Snomed IMO
- Wolters Kluwer
- PACS
- Wellsky Bloodbank
- Televox
- AHCA AMA
- IVR

**Suggested 3rd party applications that Broward Health would need to account for. These have not been included within the cost estimates*

Cerner Patient Accounting Cumberland Success Stories

Cerner Patient Accounting Case Study



Situation	
<p>Health Quest intends to replace McKesson Series with Cerner Patient Accounting in order become fully integrated within Cerner Millennium. Health Quest requested to have a business case justification, project definition materials and a roadmap to implementation. Health Quest also requested assistance in ensuring a successful implementation of all new systems within their revenue cycle portfolio.</p>	
Approach	Outcomes/Findings
<ul style="list-style-type: none"> Worked collaboratively with Health Quest executives, ITPMO and Revenue Cycle staff to develop program definition materials including charter, scope, program governance, program timeline and appropriate resource model based upon initiatives and resources Developed a 7-year implementation cost estimate and developed a Business Justification Case that was presented to the board for project approval Provided overall Program Director overseeing Cerner Patient Accounting, Centralized Scheduling, Clinically Driven Registration and Case Management projects Provided hospital billing, charge services and case management team leads that brought prior Cerner clinical and revenue cycle experience as well as analysts to support the implementation 	<ul style="list-style-type: none"> Determined overall budgetary estimate for capital and operating cost impacts along with cost offsets based upon the sun-setting of McKesson Series Implemented a “two-in-the-box” project staffing model that paired Cumberland and Health Quest resources to marry the right mix of Cerner implementation experience with operational knowledge Facilitated AR rundown strategy to maximize revenue at time of go-live Went live on-time and under budget with Case Management, Centralized Scheduling, Clinically Driven Registration and Revenue Cycle

Cerner Patient Accounting Case Study



Situation	
<p>Memorial Health System decided to replace SMS Sapphire Institutional and Mysis Professional billing systems with Cerner Patient Accounting in order become fully integrated within Cerner Millennium. MHS requested technical and project management implementation assistance to ensure a successful implementation. Success was defined as 'do no harm' to A/R.</p>	
Approach	Outcomes/Findings
<ul style="list-style-type: none"> Worked collaboratively with MHS executives, PMO and Revenue Cycle staff to develop program definition materials including charter, scope, program governance, program timeline and appropriate resource model based upon initiatives and resources. Developed an implementation timeline that was presented to the Executive Sponsors for project approval. Provided overall Program Director overseeing the Cerner Patient Accounting, Charge Services and Contract Management projects. Provided hospital billing team leads that brought prior Cerner revenue cycle experience as well as analysts to support the implementation. 	<ul style="list-style-type: none"> Completed a successful go-live of Cerner Patient Accounting, including no slowdown in claims transmission to payers. MHS received record cash collections within 4 months of go-live. Days in A/R never rose above pre-implementation levels. It took multiple years to implement Cerner Patient Accounting due to several project stoppages, internal & external staffing changes and awaiting Cerner functionality. MHS refused to go live with issues that prevented keeping A/R whole. Established and facilitated Revenue Integrity Teams, DNFB Teams and Issue Impact Teams to ensure A/R management post go-live. Cumberland facilitated these teams until A/R stabilized.

Cerner Patient Accounting Case Study



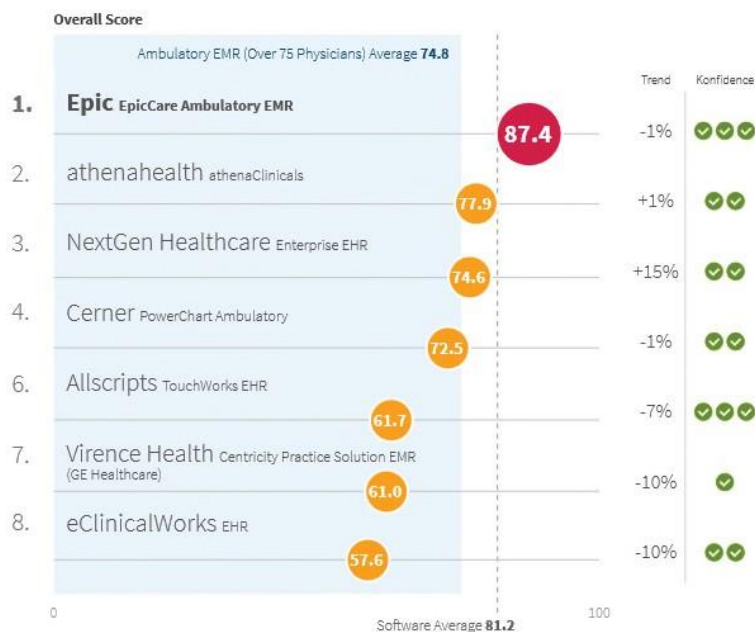
Situation	
<p>Menninger has an executive Information Management Initiative, with a vision to deliver the right information to the right people at the right time and in the right way. To support this initiative, Menninger sought to replace disparate paper and outdated "EHR" systems with a single, integrated solution. Cerner Millennium was the vendor of choice, but additional assistance was needed to close the sales process and implement the full suite of the multi-tenant version.</p>	
Approach	Outcomes/Findings
<ul style="list-style-type: none"> Worked collaboratively with CIO and project leadership to develop program foundation including charter, scope, program governance, program timeline and appropriate resource model based upon current initiatives and resources. Developed detailed project plan to support management of a project this scale and complexity. Implemented Cerner Millennium in 2 phases, providing key project leadership and SME positions as well as lead coordinators for change management activities in support of organizational change. Provided the following roles: Program Director / Advisor, Project Manager / Advisor, Testing Coordinator, Pharmacy Lead, Revenue Cycle Lead, Change Management / Training Coordinator. Cumberland also filled many resource gaps throughout the project as needed due to resource constraints of both the client and vendor. 	<ul style="list-style-type: none"> Cerner's multi-tenant space, especially for Behavioral Health is relatively young and requires strict management. Cerner's Model content, resources, and processes in this space are not fully developed. To ensure project success and delivery of contractual items, heavy vendor management was required along with breaking the clinical and revenue cycle components into two separate Go-Live phases. Change management considerations were key for an anxious client organization moving from paper (inpatient) and two disparate outpatient EHRs with relatively low technological practical knowledge and highly narrative patient documentation. Introduction of organizational change such as centralized scheduling and charge capture created additional complexity that required intentional planning and communication.



Additional Market Analysis

KLAS 2019 – Ambulatory Care EMR (75+ Providers)

- Epic leads the vendor rankings with 87.4. Cerner (Millennium/ PowerChart/ CommunityWorks Clinicals) follows with 72.5



*Best in KLAS 2019: Software and Services;
Ambulatory Care EMR (Over 75 Physicians) (2019)*



2019 Vendor Media Impressions

2019 Implementation Perception

Allscripts - Only 2 go-lives identified. Summit Healthcare in AZ reported significant problems that made the press. Other implementation was in Australia



Cerner - Mixed reviews. Initial DoD roll-out was problematic, while second phase has been neutral. Bad press from Washington State with continued delays. Positive news elsewhere



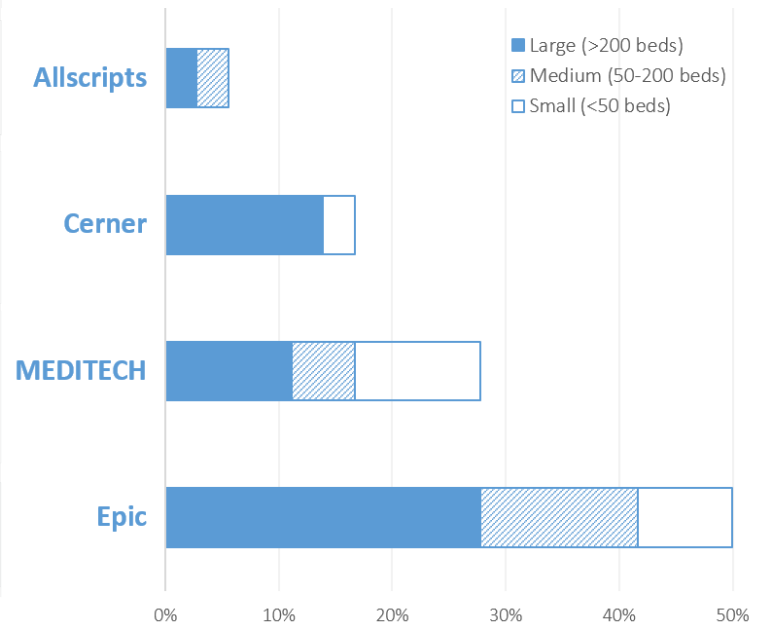
MEDITECH - Many positive press releases and significant momentum with MEDITECH Expanse. Most implementations are small-medium. Expanse has been released to a few large hospitals, but no large IDNs have deployed it



Epic - Positive implementation perception. Most press releases focus on the positive impact of a standard enterprise and fully interoperable system.



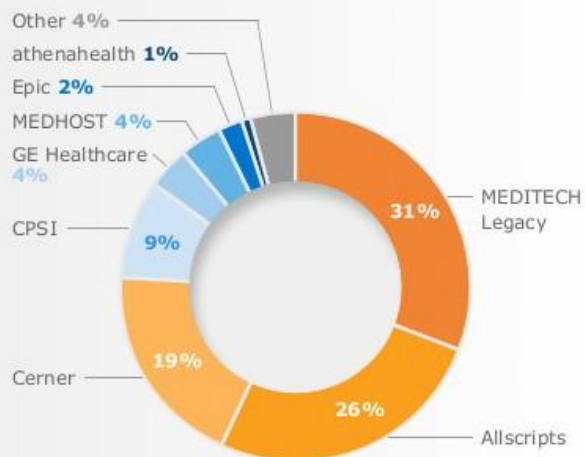
% of Implementations (n=37)



KLAS Decision Insights

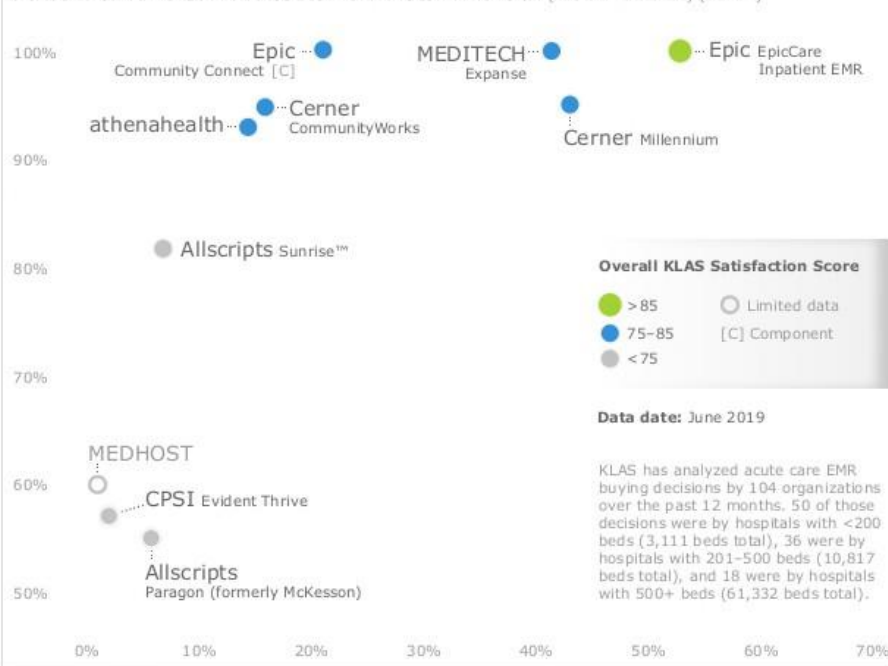
Which Customer Bases Are Considering Their Options?

(n=113†)



† Represents 113 vendor systems potentially being replaced as part of 104 decisions. One organization may be replacing multiple vendor systems.

Percent of Time Current Customers Retain Vendor (100-Percent Scale) (n=441)



Overall KLAS Satisfaction Score



Data date: June 2019

KLAS has analyzed acute care EMR buying decisions by 104 organizations over the past 12 months. 50 of those decisions were by hospitals with <200 beds (3,111 beds total), 36 were by hospitals with 201-500 beds (10,817 beds total), and 18 were by hospitals with 500+ beds (61,332 beds total).

Percent of Potential Customers That Consider Vendor (n=104)

KLAS, Decision Insights,
Acute Care EMR, July 2019



KLAS 2019 Interoperability Report

Vendor Abilities to Make Shared Data Usable



Allscripts
No current connection to Carequality;
committed to deliver in Q2 2019

MEDHOST
Has not connected to CommonWell
despite being a member for several years

Epic and Cerner stand out from other EMR vendors in making less-structured data, like labs and notes, more usable. In the **Epic** EMR, problem, allergy, medication, and immunization (PAMI) data from any vendor flows directly into native fields to be reconciled. Notes and labs from Epic sites also flow automatically, while non-Epic sites need to be individually configured for the same automation to be achieved. **Cerner** users must select documents to bring in, and then the system automatically organizes the data into a summary view and shows it in the chart. Both Epic and Cerner enable clinicians to access any outside data with a search bar, which saves clinicians from needing to sort through CCDs.






















*KLAS, Interoperability
2019, Vendor Success in
Making Outside Data
Usable, January, 2019*



KLAS 2019 Interoperability Report

Flow of Shared Data into the EMR

 Flows directly into native fields
  Manually selected for import
  Manually entered

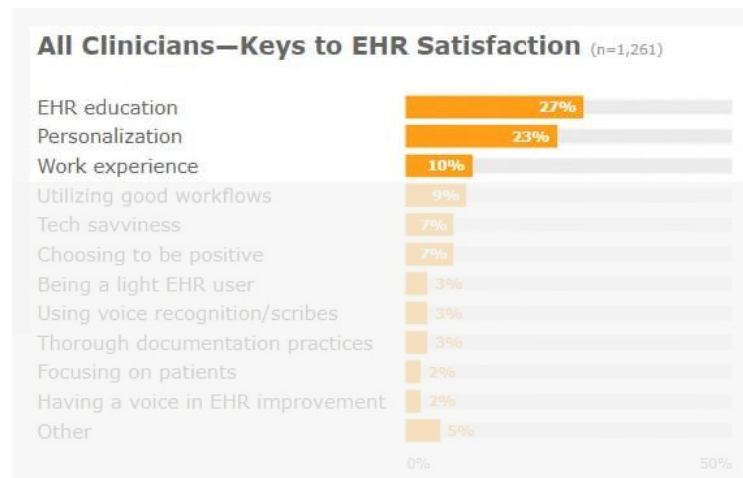
	PAMI Data	Lab Data	Progress Notes
athenahealth			
Cerner			
CPSI			
eClinicalWorks			
Epic			
NextGen Healthcare			
Virence Health (GE Healthcare)			

KLAS, Interoperability
 2019, Vendor Success in
 Making Outside Data
 Usable, January, 2019



Clinician satisfaction with the EHR: *Arch Collaborative 2019*

- There is no definitive clinician satisfaction leader among the major EHR vendors
- Research shows that satisfaction ratings from clinicians are highly dependent on **training, personalization, and experience** rather than inherent usability of the EHR



*KLAS 2019 Arch Collaborative Impact Report:
Successful Users' Key to EHR Satisfaction (5/2019)*



Cerner Makes Strides in Improving Relationships with Customers, cont.

What Has Raised Customer Confidence That Cerner Is Making Needed Changes?



Customers Continue to Wait for Tangible Solution Improvements, cont.

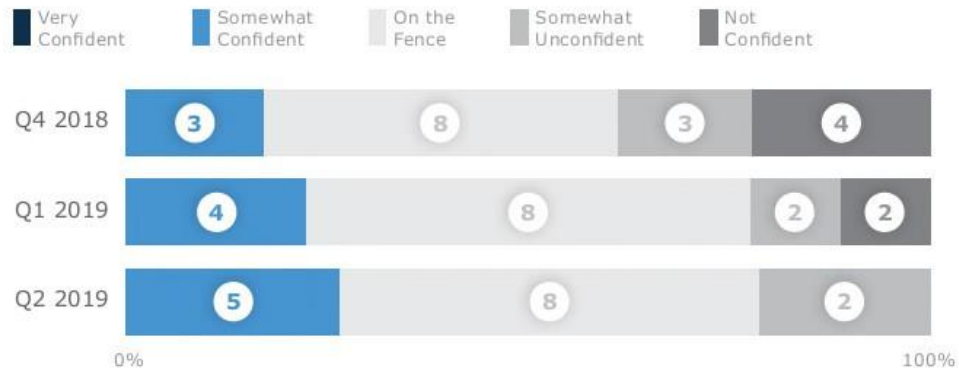
**Satisfaction with Tangible Improvements since
the August 2018 Summit That Have Impacted
Your Organization's RCM Strategy**



Customers Continue to Wait for Tangible Solution Improvements, cont.

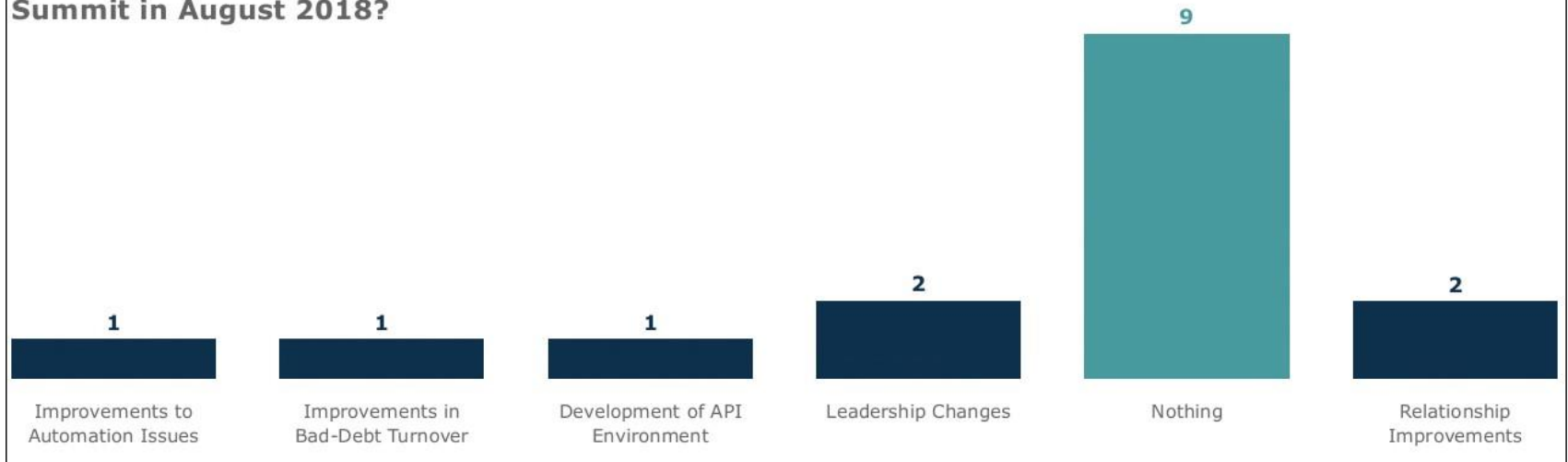
How Confident Are Customers That Cerner Will Deliver a World-Class RCM Solution?

Cerner clients only



Customers Continue to Wait for Tangible Solution Improvements, cont.

**What Has Been the Biggest RCM Win That Cerner
Has Delivered for Your Organization since the
Summit in August 2018?**



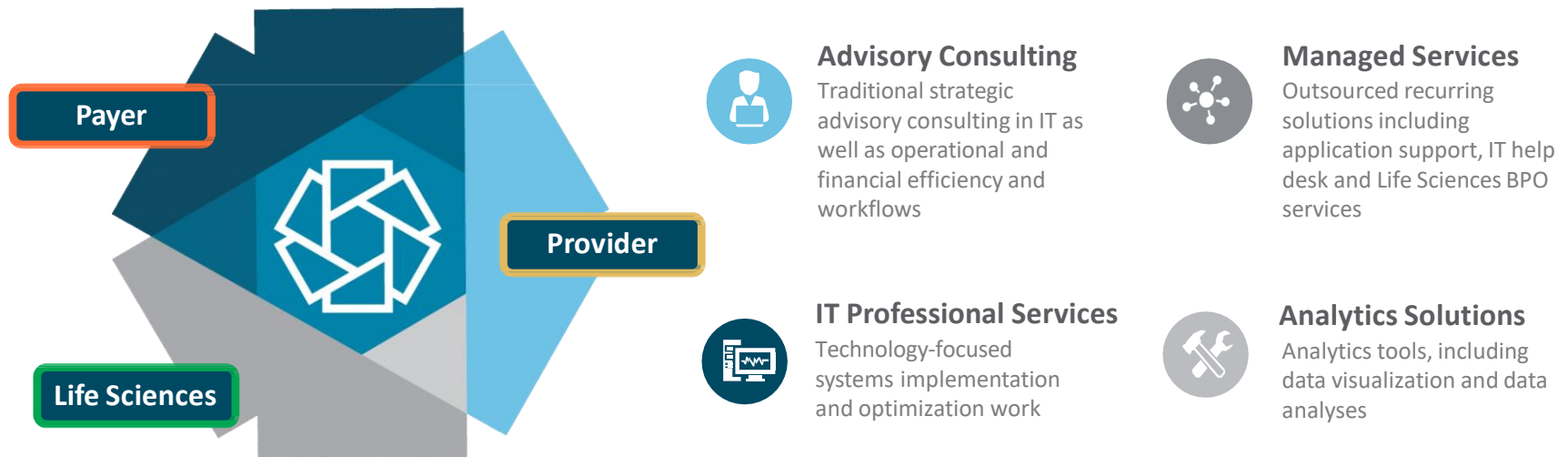
Cumberland Overview

Cumberland Overview

- Cumberland is a leading healthcare consulting and services firm providing strategic advisory, professional and managed services
- We serve healthcare clients in provider, payer and life sciences organizations
- Founded in 2004, we have grown to a team of ~500 healthcare professionals with both operational and technical expertise
- In addition, we also have access to thousands of qualified candidates with vendor-specific expertise to meet our specialized analyst and trainer needs

We help our clients select, implement, optimize, support and integrate technology solutions to increase operational efficiencies and improve business performance.

Cumberland Overview



We deliver solutions that **advance** the business of healthcare.

Strength Across Three Markets



Payer



Provider



Life Sciences

Client Overview	<ul style="list-style-type: none"> Regional Health Plans & Blues Plans Provider-Owned Health Plans National Insurers Federal, State and Local Government Agencies 	<ul style="list-style-type: none"> Academic Medical Centers Regional Health Systems Integrated Delivery Networks Freestanding Ambulatory Clinics Long-Term Care and Behavioral Health Facilities 	<ul style="list-style-type: none"> Pharmaceutical Manufacturers <ul style="list-style-type: none"> - All Tiers Biotech <ul style="list-style-type: none"> - Research and Manufacturing
	<ul style="list-style-type: none"> Advisory Services IT Professional Services <ul style="list-style-type: none"> - Implementation and Optimization Government Services Agile Services <ul style="list-style-type: none"> - Transformation - Program Execution 	<ul style="list-style-type: none"> Advisory Services <ul style="list-style-type: none"> - System Selections - Pre- and Post-Live Assessments and Planning - Strategic IT Planning and Integration Services IT Professional Services <ul style="list-style-type: none"> - Implementation and Optimization Managed Services <ul style="list-style-type: none"> - Help Desk and Application Support Services 	<ul style="list-style-type: none"> Advisory Practice <ul style="list-style-type: none"> - Commercialization - Government Pricing and Compliance - Contract Strategy and Optimization Systems Integration Managed Services <ul style="list-style-type: none"> - Business Process Outsourcing Analytics

Claims and benefit administration systems

Clinical EHR and revenue cycle management systems

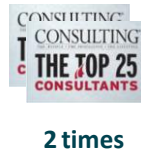
Enterprise contract and revenue management systems

System Expertise



Our Values in Action

Cumberland is consistently recognized for quality of service, growth and company culture



KLAS Recognition

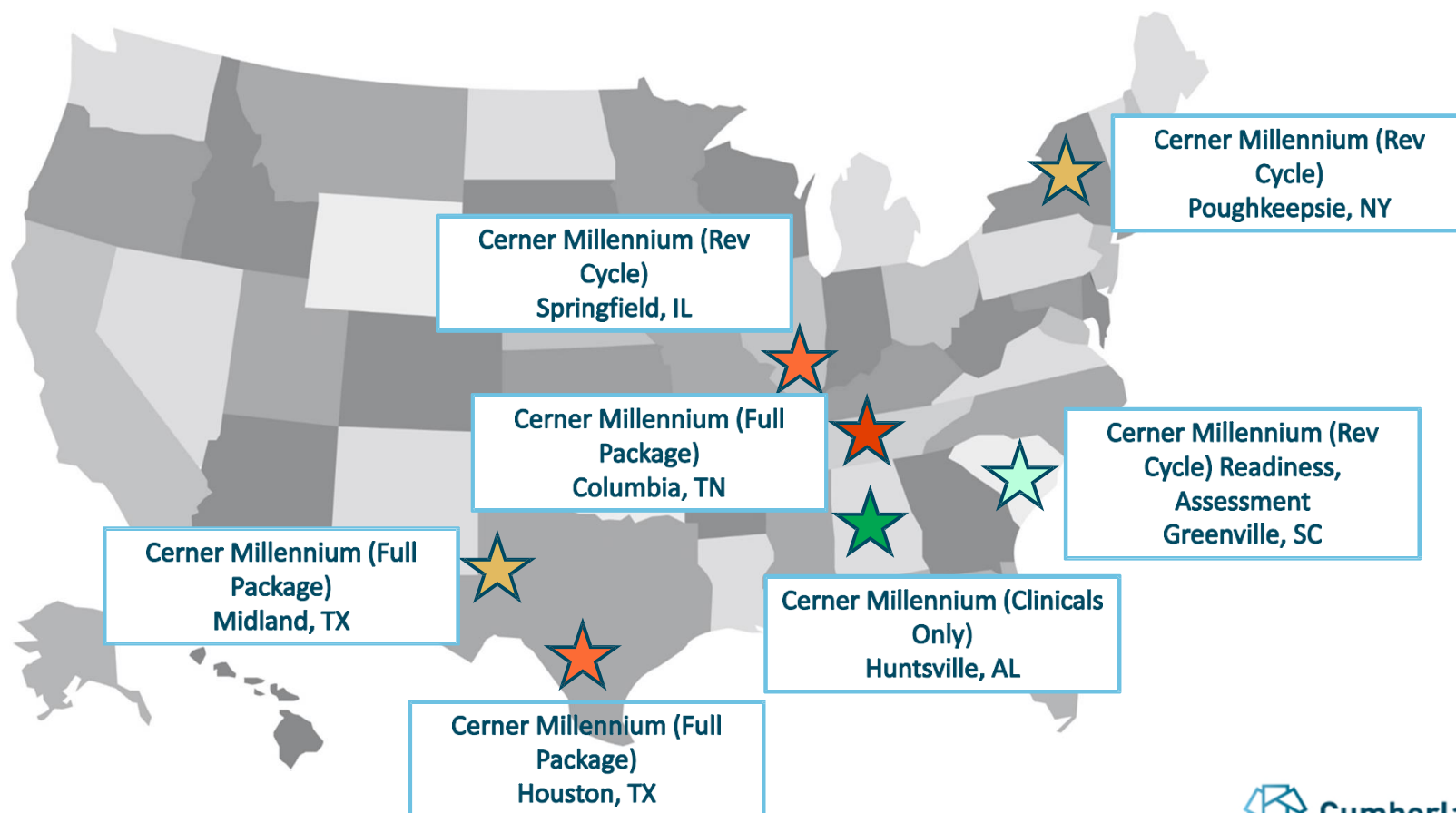
- 2019 Best in KLAS: Software & Services
 - #2 in Partial IT Outsourcing
 - #2 in HIT Enterprise Implementation Leadership
- 2019 Payer IT Consulting Report⁽¹⁾
 - #3 with an Overall Score of 92.0
- 2018 HIT Assessment & Strategic Planning Report⁽²⁾
 - Recognized as firm most consistently exceeding expectations
- 2016 Top Performing Targeted Epic Consulting Firm⁽³⁾
- 2012 Top Meaningful Use Firm⁽⁴⁾
- 2011 Best in KLAS: Software & Services
 - #1 IT Planning & Assessment (tie)

Gartner

- Listed in Gartner's July 2017 Market Guide for Revenue Management in Pharma and Biotech
- Recognized as one of two representative vendors with capabilities in all seven service categories outlined by the Gartner report

Cumberland's RCM Work

Cumberland's Cerner Millennium Work





KaufmanHall

Exceptional Partners. Exceptional Performance.

EHR Evaluation Executive Team Report

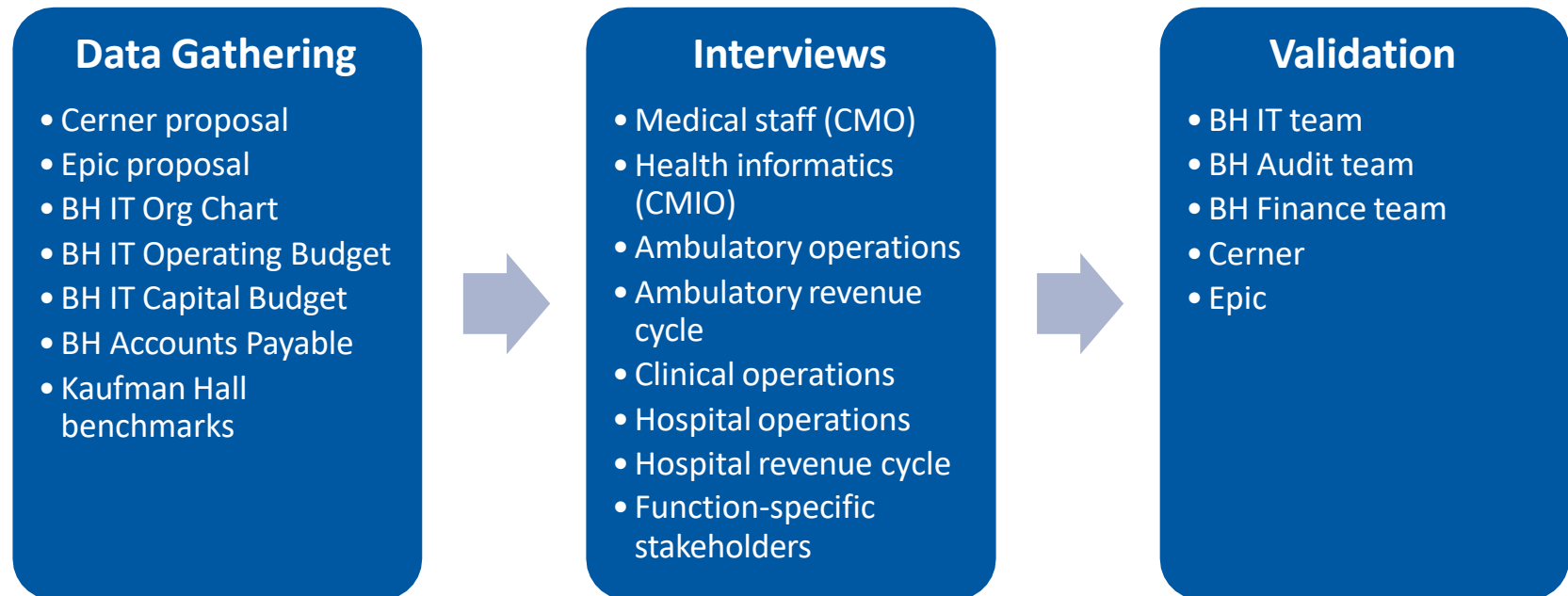
Fort Lauderdale, Florida | October 2020

***Preliminary Working Draft
Subject To Ongoing Review and Refinement***

Overview of Engagement

Purpose: Develop an impartial ten-year total cost of ownership model to estimate costs associated with revenue cycle and electronic health record upgrade proposals from Cerner and Epic.

Key Work Steps



Executive Summary

Total Cost of Ownership (TCO) differential is significant

- *Epic conversion will cost an additional \$163M over the next 10 years compared to Cerner*
- *80% of \$163M in additional Epic costs will be incurred by the end of FY25, due to implementation costs (lasting 18 months) and existing contractual obligations with Cerner*
- *Broward Health entered into an 8-year master service agreement with Cerner in 2017 which expires in 2025; this includes an obligation to pay Cerner \$45M between 2021 through 2025 regardless of the EHR chosen*

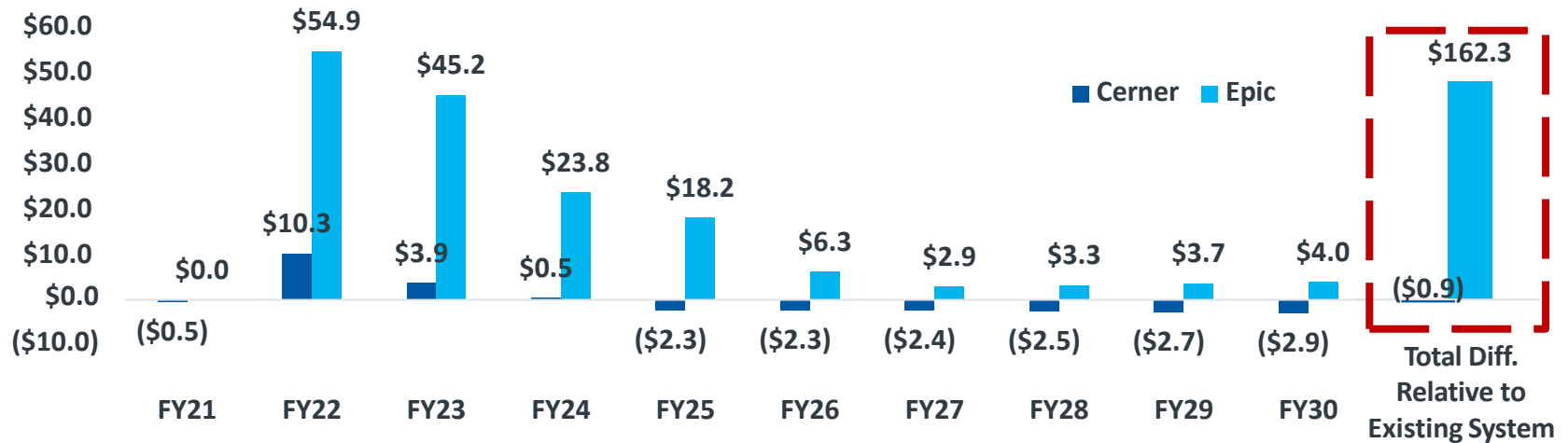
Broward Health has strong performing revenue cycle operations today

- *While a new system may present opportunities for improvement, successful implementation and process design will be most significant drivers of incremental benefit*

The EHR choice will have implications for Broward Health's financial position and flexibility to support other near-term strategic priorities

- *Future financial flexibility to support major new strategic initiatives, including growth into new markets and the rehab hospital, will be more limited by the higher cost EPIC alternative*
- *The incremental cost of the EPIC solution will necessitate the determination of financial tradeoffs over the next few years; timing or scope of some investments will need to be revisited*

Epic Conversion Will Cost an Additional \$163M Over the Next 10 Years Compared to Cerner



Key Differences		Cerner (Relative to Existing System)	Epic (Relative to Existing System)	Epic vs Cerner
Total Cost of Ownership (TCO) Relative to Current System		(\$1M) net benefit	\$162M	\$163M
Capital Costs / % of TCO		\$20M / 100%	\$96M / 59%	\$76M
Operating Expenses		(\$21M) net benefit	\$67M / 41%	\$88M
Subset of Above TCO	Additional Cost to Fulfill Existing Cerner Agreement Until Contract End (FY25)	N/A	\$45M	\$45M
	Implementation Team Costs	\$17M	\$66M	\$49M

Broward's Existing Platform Is Highly Customized; Meticulous Planning and Proactive Process Design Will Be Required To Successfully Implement a New System

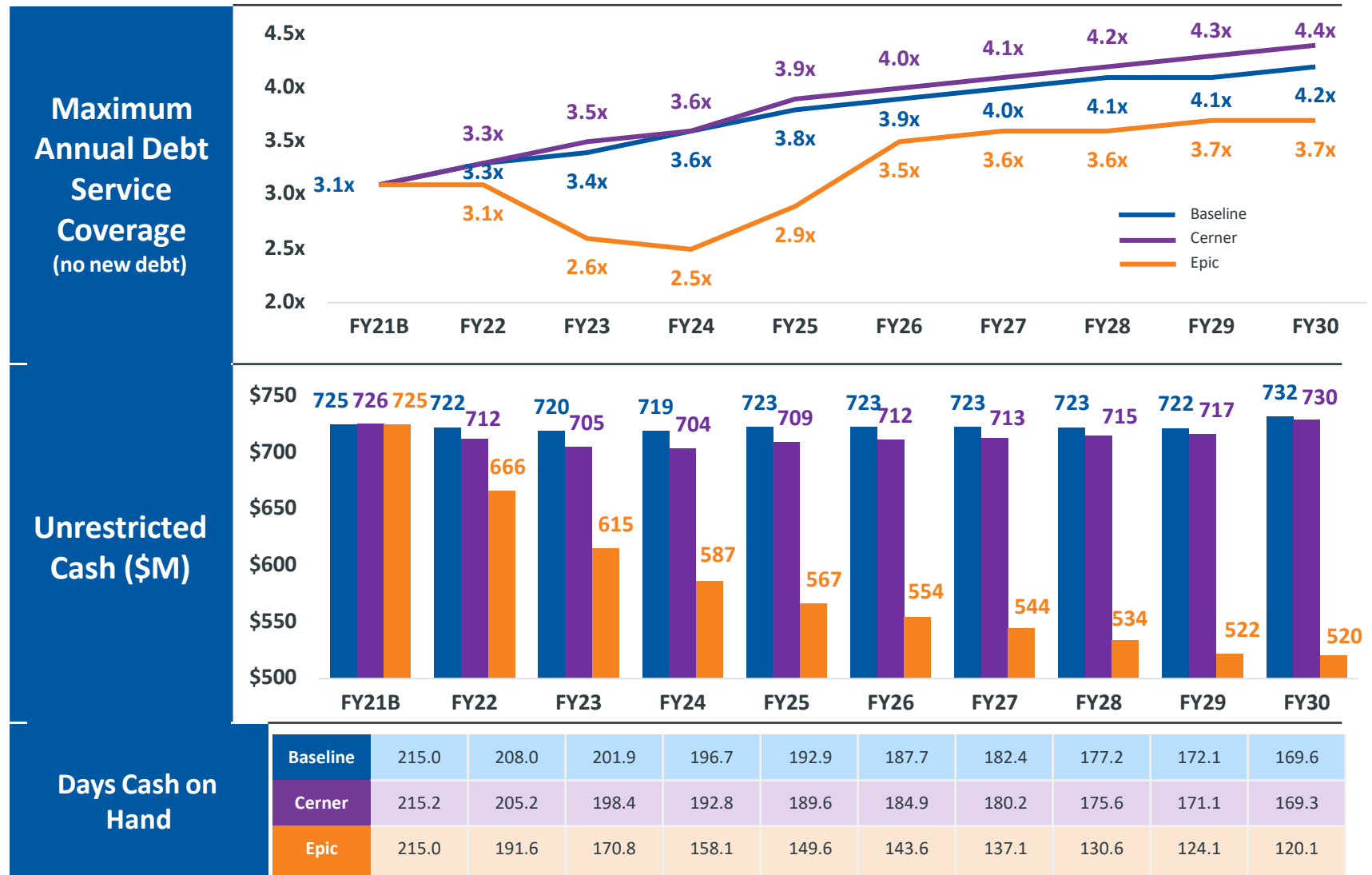
Interview Findings

- Broward's revenue cycle solution (**Invision**) has been **highly customized** and configured to meet specific needs to optimize revenue cycle performance
- The **high level of customization increases risks** that the future platform may:
 - Temporarily reduce functionality
 - Require operational changes to processes
 - Necessitate manual workarounds to match or improve current levels of performance
- Given the level of customization in the existing platform, **the organization will need to evaluate vendors' preferences to build a new platform based on "default" configurations** and likely formulate alternative solutions
 - Broward will lose functionality should the organization choose Cerner OR Epic

Keys to Successful Implementation

- 1 **Collaboration between stakeholders**, not driven by one department
- 2 **Challenge team to innovate** and avoid building on old processes
 - Leverage best practices/lesson learned from leading practices
- 3 **Identify and mitigate risks to cash flow and revenue early and often**
- 4 **Remember patient engagement and customer satisfaction are critical**

Broward Health's Near Term Financial Position Would Be Stressed By Transitioning to Epic; Cerner Financial Disruptions Are Minimal



Broward Health Must Improve Operating Performance Above Historical Levels To Support a Transition to Epic

Key Ratios	Moody's "A3"(A)	Moody's "Baa2"(A)	Planning Targets	Baseline		Cerner Revenue Cycle Upgrade		Epic Revenue Cycle and EHR Transition			
				FY24	FY30	FY24	FY30	No New Debt		\$100M New Debt ^(B)	
								FY24	FY30	FY24	FY30
New Debt	---	---	---	None		None		None		\$100M FY22	
Operating EBIDA Margin	8.0%	5.8%	6.0%	3.8%	4.1%	3.9%	4.3%	2.4%	3.9%	2.4%	3.9%
Unrestricted Cash (\$M)	\$454.4	\$198.1	---	\$719.3	\$732.2	\$703.9	\$729.7	\$586.5	\$520.1	\$675.2	\$574.5
Days Cash on Hand ^(C)	179.2	143.5	200.0	196.7	169.6	192.8	169.3	158.1	120.1	181.5	132.5
Cash to Debt	141.5%	139.2%	175.0%	251.7%	302.4%	246.3%	301.3%	205.2%	214.8%	179.9%	194.6%
Max. Ann. Debt Service Coverage ^(D)	4.1x	3.2x	3.0x	3.6x	4.2x	3.6x	4.4x	2.5x	3.7x	1.9x	2.7x
Required Annual Op. EBIDA To Maintain 200 DCOH	---	---	---	5%		5%		6%		6%	

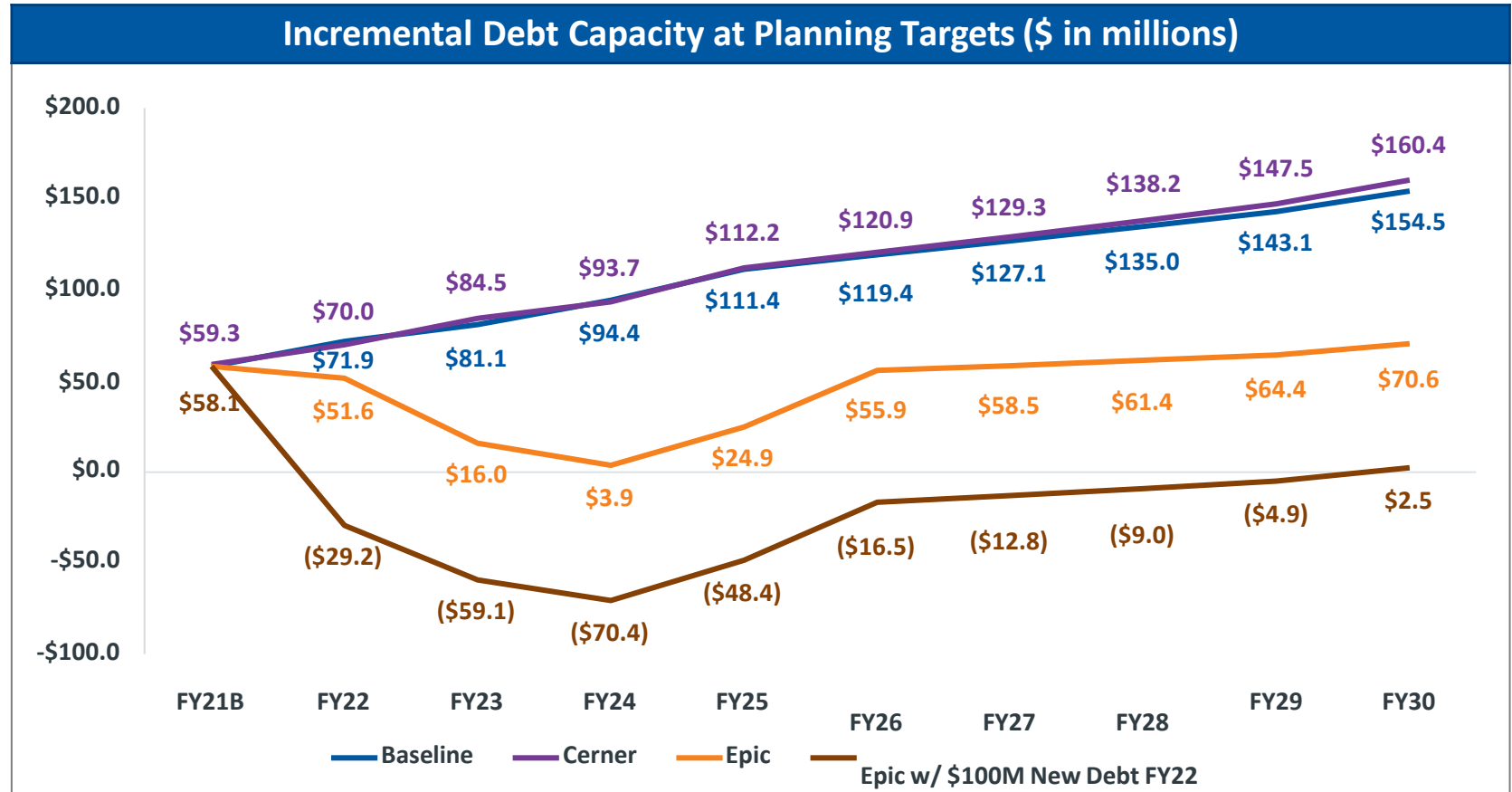
Note (A): Moody's statistics from 2020 Median Ratios for Not-for-profit System Hospitals

Note (B): Assumes \$100M issuance in FY22 (in line with anticipated Epic capital costs) with a 15 year term and 3.5% rate

Note (C): Includes cash and cash equivalents, short-term investments and investments

Note (D): Broward Health Maximum Annual Debt Service calculated to be \$22.6M without new debt; \$31.3M with \$100M new debt in FY22

Transitioning to Epic Will Require Tradeoffs to Build Incremental Debt Capacity; Cerner Scenario Provides Additional Financial Flexibility



Planning Targets: MADS Coverage – 3.0x, debt-to-capitalization – 35.0%, cash-to-debt – 175.0%

Note: Debt capacity based on weighted average of MADS coverage (50%), debt-to-capitalization (10%), and cash-to-debt (40%)