

# Broward Health

## EHR Options Cost Analysis/Review

### *Project Update*

August 31, 2022



# AGENDA

- Project Overview & Update
- Options Cost Analysis/Review:
  1. Oracle Cerner Clinical Steady State + RevElate Revenue Cycle System Replacement
  2. Oracle Cerner Clinical Uplift & Enhance + RevElate Revenue Cycle System Replacement
  3. Epic Direct
  4. Epic Symphony with Memorial
- TimeLine Review
- Survey Results
- Next Steps



# Project Overview

*Update July 20, 2022*

# HIGH LEVEL OPTION COMPARISON



	Cerner Clinical Steady State + RevElate	Cerner Clinical Uplift + RevElate	Epic Direct	Epic Symphony with Memorial
○ Time Frame	15 months	18+ months	18 Months	15-18 months
○ One-Time Costs	\$23.5M	\$101.6M	\$196.9M	174.9M
○ 10 Year Total IT Costs	\$421.0M	\$408.4M	\$546.4M	\$454.8M
○ Disruption - Revenue Cycle Users	High	High	High	High
○ Disruption - Clinical Users	Low	Medium	High	High
○ Adoption Requirements	30%	80%	90%	95%
Major Risks	RevElate new/unproven platform	RevElate new/unproven platform Larger IT staffing	Clinical Adoption Larger IT staffing Invision June 2025 Deadline	Clinical Adoption Cooperation between BH & MHS

Sources: <sup>1</sup> Epic Website: <https://www.epic.com/about> | <sup>2</sup> "Best in KLAS Software & Services," KLAS 2020 | "Cerner Revenue Cycle Management - Report 4 of 4," KLAS 2020 | <sup>4</sup> "US Hospital EMR Market Share 2020," KLAS 2020



# ANNUAL SUMMARY - OVERVIEW OF 4 OPTIONS

Cerner Steady State + RevElate Cost Model	Cerner Steady State + RevElate 10 Year Cost Summary										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
Total Cost	\$ 28,047,036	\$ 36,097,780	\$ 43,144,806	\$ 40,979,381	\$ 41,989,283	\$ 43,025,092	\$ 48,780,074	\$ 45,177,210	\$ 46,294,955	\$ 47,441,481	\$ 420,977,098
Cerner Uplift + RevElate Cost Model	Cerner Uplift + RevElate 10 Year Cost Summary										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
Total Cost	\$ 54,708,084	\$ 70,926,509	\$ 39,524,219	\$ 31,168,242	\$ 32,092,938	\$ 33,045,376	\$ 38,718,963	\$ 35,036,829	\$ 36,077,583	\$ 37,149,562	\$ 408,448,305
Epic Direct Cost Model	Epic Direct 10 Year Cost Summary										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
Total Cost	\$ 87,920,621	\$ 138,016,130	\$ 44,639,077	\$ 36,597,288	\$ 36,930,371	\$ 37,737,739	\$ 50,021,330	\$ 36,672,487	\$ 38,106,359	\$ 39,729,943	\$ 546,371,346
Symphony Cost Model	Symphony 10 Year Cost Summary										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
Total Cost	\$ 73,017,413	\$ 134,067,454	\$ 39,096,700	\$ 31,844,125	\$ 25,318,863	\$ 25,988,439	\$ 41,364,122	\$ 27,368,494	\$ 28,025,848	\$ 28,700,399	\$ 454,791,857

# SUMMARY - CERNER STEADY STATE + REVELATE

Cerner Steady State + RevElate Cost Model	Cerner Steady State + RevElate 10 Year Cost Summary											
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total	
System Software Costs (OS, DBA, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cerner Application Licensing Costs	\$ 19,532,551	\$ 22,428,200	\$ 20,732,949	\$ 19,085,164	\$ 19,466,867	\$ 19,856,204	\$ 20,253,328	\$ 20,658,395	\$ 21,071,563	\$ 21,492,994	\$ 204,578,215	
Interface & Conversion Costs	\$ 120,000	\$ 141,200	\$ 42,436	\$ 43,709	\$ 45,020	\$ 46,371	\$ 47,762	\$ 49,195	\$ 50,671	\$ 52,191	\$ 638,555	
3rd Party Applications	\$ 3,765,509	\$ 3,878,474	\$ 3,994,828	\$ 4,114,673	\$ 4,238,114	\$ 4,365,257	\$ 4,496,215	\$ 4,631,101	\$ 4,770,034	\$ 4,913,135	\$ 43,167,341	
Legacy Decommissioning Costs	\$ -	\$ -	\$ 121,875	\$ 31,956	\$ 32,914	\$ 33,902	\$ 34,919	\$ 35,966	\$ 37,045	\$ 38,157	\$ 366,734	
Cerner Hosting/Client Infrastructure Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Network and End User Devices Costs	\$ -	\$ 4,080,500	\$ -	\$ -	\$ -	\$ -	\$ 4,080,500	\$ -	\$ -	\$ -	\$ 8,161,000	
Cerner Implementation Services Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
3rd Party Consulting Costs - Project	\$ 970,667	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 970,667	
Client Implementation and Support Team Costs	\$ -	\$ -	\$ 11,998,779	\$ 12,358,742	\$ 12,729,505	\$ 13,111,390	\$ 13,504,731	\$ 13,909,873	\$ 14,327,170	\$ 14,756,985	\$ 106,697,175	
End-User Training Costs	\$ -	\$ 861,000	\$ 626,355	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,487,355	
Contingency: One-Time 15% and Annual 15%	\$ 3,658,309	\$ 4,708,406	\$ 5,627,583	\$ 5,345,137	\$ 5,476,863	\$ 5,611,969	\$ 6,362,618	\$ 5,892,680	\$ 6,038,472	\$ 6,188,019	\$ 54,910,056	
<b>Total Cost</b>	<b>\$ 28,047,036</b>	<b>\$ 36,097,780</b>	<b>\$ 43,144,806</b>	<b>\$ 40,979,381</b>	<b>\$ 41,989,283</b>	<b>\$ 43,025,092</b>	<b>\$ 48,780,074</b>	<b>\$ 45,177,210</b>	<b>\$ 46,294,955</b>	<b>\$ 47,441,481</b>	<b>\$ 420,977,098</b>	

Note: Cerner bundles system software, hosting, some 3rd party, and interfaces & conversions in the Cerner Application Licensing Costs

# SUMMARY - CERNER UPLIFT + REVELATE

Cerner Uplift + RevElate Cost Model	Cerner Uplift + RevElate 10 Year Cost Summary											
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total	
System Software Costs (OS, DBA, etc.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cerner Application Licensing Costs	\$ 13,795,459	\$ 13,795,459	\$ 14,160,322	\$ 13,202,799	\$ 13,589,882	\$ 13,988,579	\$ 14,399,237	\$ 14,822,213	\$ 15,257,879	\$ 15,706,616	\$ 142,718,445	
Interface & Conversion Costs	\$ 960,000	\$ 997,100	\$ 74,263	\$ 76,491	\$ 78,786	\$ 81,149	\$ 83,584	\$ 86,091	\$ 88,674	\$ 91,334	\$ 2,617,472	
3rd Party Applications	\$ 4,485,509	\$ 4,725,674	\$ 1,368,518	\$ 1,409,573	\$ 1,451,860	\$ 1,495,416	\$ 1,540,279	\$ 1,586,487	\$ 1,634,081	\$ 1,683,104	\$ 21,380,501	
Legacy Decommissioning Costs	\$ -	\$ -	\$ 1,203,839	\$ 55,213	\$ 56,870	\$ 58,576	\$ 60,333	\$ 62,143	\$ 64,008	\$ 65,928	\$ 1,626,911	
Cerner Hosting/Client Infrastructure Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Network and End User Devices Costs	\$ -	\$ 4,080,500	\$ -	\$ -	\$ -	\$ -	\$ 4,080,500	\$ -	\$ -	\$ -	\$ 8,161,000	
Cerner Implementation Services Costs	\$ 5,504,226	\$ 5,504,226	\$ 5,504,226	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,512,678	
3rd Party Consulting Costs - Project	\$ 9,578,271	\$ 19,185,734	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28,764,005	
Client Implementation and Support Team Costs	\$ 13,248,782	\$ 8,148,949	\$ 12,057,718	\$ 12,358,742	\$ 12,729,505	\$ 13,111,390	\$ 13,504,731	\$ 13,909,873	\$ 14,327,170	\$ 14,756,985	\$ 128,153,845	
End-User Training Costs	\$ -	\$ 5,237,583	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,237,583	
Contingency: One-Time 15% and Annual 15%	\$ 7,135,837	\$ 9,251,284	\$ 5,155,333	\$ 4,065,423	\$ 4,186,035	\$ 4,310,266	\$ 5,050,300	\$ 4,570,021	\$ 4,705,772	\$ 4,845,595	\$ 53,275,866	
<b>Total Cost</b>	<b>\$ 54,708,084</b>	<b>\$ 70,926,509</b>	<b>\$ 39,524,219</b>	<b>\$ 31,168,242</b>	<b>\$ 32,092,938</b>	<b>\$ 33,045,376</b>	<b>\$ 38,718,963</b>	<b>\$ 35,036,829</b>	<b>\$ 36,077,583</b>	<b>\$ 37,149,562</b>	<b>\$ 408,448,305</b>	

Note: Cerner bundles System Software, Hosting, some 3<sup>rd</sup> party, and Interfaces & Conversions in the Cerner Application Licensing Costs

# SUMMARY - EPIC DIRECT

Epic Direct Cost Model	Epic Direct 10 Year Cost Summary										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
System Software Costs (OS, DBA, etc.)	\$ 2,772,158	\$ 576,414	\$ 593,706	\$ 611,517	\$ 629,863	\$ 648,759	\$ 668,222	\$ 688,268	\$ 708,916	\$ 730,184	\$ 8,628,006
Epic Application Licensing Costs	\$ 1,889,903	\$ 5,553,203	\$ 7,466,667	\$ 7,523,117	\$ 7,797,915	\$ 7,615,388	\$ 4,556,905	\$ 4,763,819	\$ 4,871,632	\$ 4,980,358	\$ 57,018,907
Interface & Conversion Costs	\$ 6,020,000	\$ 3,112,200	\$ 785,066	\$ 808,618	\$ 832,877	\$ 857,863	\$ 883,599	\$ 910,107	\$ 937,410	\$ 965,532	\$ 16,113,271
3rd Party Applications	\$ 10,176,322	\$ 11,887,132	\$ 3,777,146	\$ 3,890,460	\$ 4,007,174	\$ 4,127,389	\$ 4,251,211	\$ 4,378,747	\$ 4,510,109	\$ 4,645,413	\$ 55,651,102
Legacy Decommissioning Costs	\$ 20,738,899	\$ 21,361,066	\$ 5,598,936	\$ 596,288	\$ 448,535	\$ 508,023	\$ 514,713	\$ 521,603	\$ 528,700	\$ 536,010	\$ 51,352,771
Epic Hosting/Client Infrastructure Costs	\$ 3,431,380	\$ 3,500,008	\$ 3,600,096	\$ 3,735,332	\$ 3,911,705	\$ 4,138,146	\$ 4,427,514	\$ 4,798,099	\$ 5,275,866	\$ 5,897,850	\$ 42,715,995
Network and End User Devices Costs	\$ -	\$ 12,827,194	\$ -	\$ -	\$ -	\$ -	\$ 12,827,194	\$ -	\$ -	\$ -	\$ 25,654,388
Epic Implementation Services Costs	\$ 7,052,222	\$ 7,052,222	\$ 1,763,056	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,867,500
3rd Party Consulting Costs - Project	\$ 11,402,820	\$ 27,788,858	\$ 924,195	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,115,873
Client Implementation and Support Team Costs	\$ 8,329,010	\$ 13,864,978	\$ 14,307,722	\$ 14,658,396	\$ 14,485,298	\$ 14,919,857	\$ 15,367,453	\$ 15,828,477	\$ 16,303,331	\$ 16,792,431	\$ 144,856,954
End-User Training Costs	\$ 4,640,000	\$ 12,490,752	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,130,752
Contingency: One-Time 15% and Annual 15%	\$ 11,467,907	\$ 18,002,104	\$ 5,822,488	\$ 4,773,559	\$ 4,817,005	\$ 4,922,314	\$ 6,524,521	\$ 4,783,368	\$ 4,970,395	\$ 5,182,167	\$ 71,265,828
<b>Total Cost</b>	<b>\$ 87,920,621</b>	<b>\$ 138,016,130</b>	<b>\$ 44,639,077</b>	<b>\$ 36,597,288</b>	<b>\$ 36,930,371</b>	<b>\$ 37,737,739</b>	<b>\$ 50,021,330</b>	<b>\$ 36,672,487</b>	<b>\$ 38,106,359</b>	<b>\$ 39,729,943</b>	<b>\$ 546,371,346</b>



# SUMMARY - EPIC SYMPHONY WITH MEMORIAL

Symphony Cost Model	Symphony 10 Year Cost Summary										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10 Year Total
System Software Costs (OS, DBA, etc.)	\$ 2,147,351	\$ 438,369	\$ 451,520	\$ 465,066	\$ 479,018	\$ 493,388	\$ 508,190	\$ 523,436	\$ 539,139	\$ 555,313	\$ 6,600,788
Epic Application Licensing Costs	\$ 1,818,525	\$ 6,764,023	\$ 8,902,724	\$ 8,948,326	\$ 3,600,612	\$ 3,694,592	\$ 3,789,277	\$ 3,984,677	\$ 4,080,803	\$ 4,177,666	\$ 49,761,224
Interface & Conversion Costs	\$ 6,020,000	\$ 3,112,200	\$ 785,066	\$ 808,618	\$ 832,877	\$ 857,863	\$ 883,599	\$ 910,107	\$ 937,410	\$ 965,532	\$ 16,113,271
3rd Party Applications	\$ 9,864,000	\$ 11,606,640	\$ 3,488,239	\$ 3,592,886	\$ 3,700,673	\$ 3,811,693	\$ 3,926,044	\$ 4,043,825	\$ 4,165,140	\$ 4,290,094	\$ 52,489,235
Legacy Decommissioning Costs	\$ 20,738,899	\$ 21,361,066	\$ 5,598,936	\$ 596,288	\$ 448,535	\$ 508,023	\$ 514,713	\$ 521,603	\$ 528,700	\$ 536,010	\$ 51,352,771
Epic Hosting/Client Infrastructure Costs	\$ 3,807,460	\$ 3,811,609	\$ 3,815,841	\$ 3,820,158	\$ 3,824,561	\$ 3,829,053	\$ 3,833,634	\$ 3,838,306	\$ 3,843,072	\$ 3,847,934	\$ 38,271,629
Network and End User Devices Costs	\$ -	\$ 12,827,194	\$ -	\$ -	\$ -	\$ -	\$ 12,827,194	\$ -	\$ -	\$ -	\$ 25,654,388
Epic Implementation Services Costs	\$ 3,418,667	\$ 3,418,667	\$ 854,667	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,692,000
3rd Party Consulting Costs - Project	\$ 7,842,200	\$ 28,047,719	\$ 840,177	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 36,730,096
Client Implementation and Support Team Costs	\$ 7,836,302	\$ 12,702,156	\$ 9,259,960	\$ 9,459,201	\$ 9,130,127	\$ 9,404,031	\$ 9,686,152	\$ 9,976,737	\$ 10,276,039	\$ 10,584,320	\$ 98,315,026
End-User Training Costs	\$ -	\$ 12,490,752	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,490,752
Contingency: One-Time 15% and Annual 15%	\$ 9,524,010	\$ 17,487,059	\$ 5,099,570	\$ 4,153,582	\$ 3,302,460	\$ 3,389,796	\$ 5,395,320	\$ 3,569,804	\$ 3,655,545	\$ 3,743,530	\$ 59,320,677
<b>Total Cost</b>	<b>\$ 73,017,413</b>	<b>\$ 134,067,454</b>	<b>\$ 39,096,700</b>	<b>\$ 31,844,125</b>	<b>\$ 25,318,863</b>	<b>\$ 25,988,439</b>	<b>\$ 41,364,122</b>	<b>\$ 27,368,494</b>	<b>\$ 28,025,848</b>	<b>\$ 28,700,399</b>	<b>\$ 454,791,857</b>

# PROJECT OVERVIEW

## STAFFING COMPARISON BETWEEN OPTIONS

Epic / Cerner Cost Model Cost Summary	Total implementation Resources	Implementation FTEs	Implementation Consultants	Legacy Backfill (FTE/Consultants)	Long Term Support (FTEs)
10 Year Summary -Cerner Steady State + RevEvlate	97.6	71.1	26.5	-	74.1
10 Year Summary - Cerner Uplift + RevElate	97.6	71.1	26.5	14.2	74.1
10 Year Summary - Epic Direct	121.8	82.3	39.5	16.5	84.1
10 Year Summary - Symphony	104.8	72.3	32.5	14.5	54.6

*Notes/Assumptions:*

- A) *Cerner Steady State + RevElate assumes similar level of functionality eventually will implemented.*
- B) *No legacy Backfill needed for Cerner Steady State + RevElate.*
- C) *Legacy Backfill is 40% of the Legacy Backfill .Cerner Steady State + RevElate for other options.*
- D) *The long-term Symphony support estimate is only Broward’s part of the team and does not include the staffing that Broward has assigned to Epic.*

# TimeLine Review

# CERNER CLINICAL UPLIFT / EXPAND + REVELATE REVENUE CYCLE SYSTEM REPLACEMENT

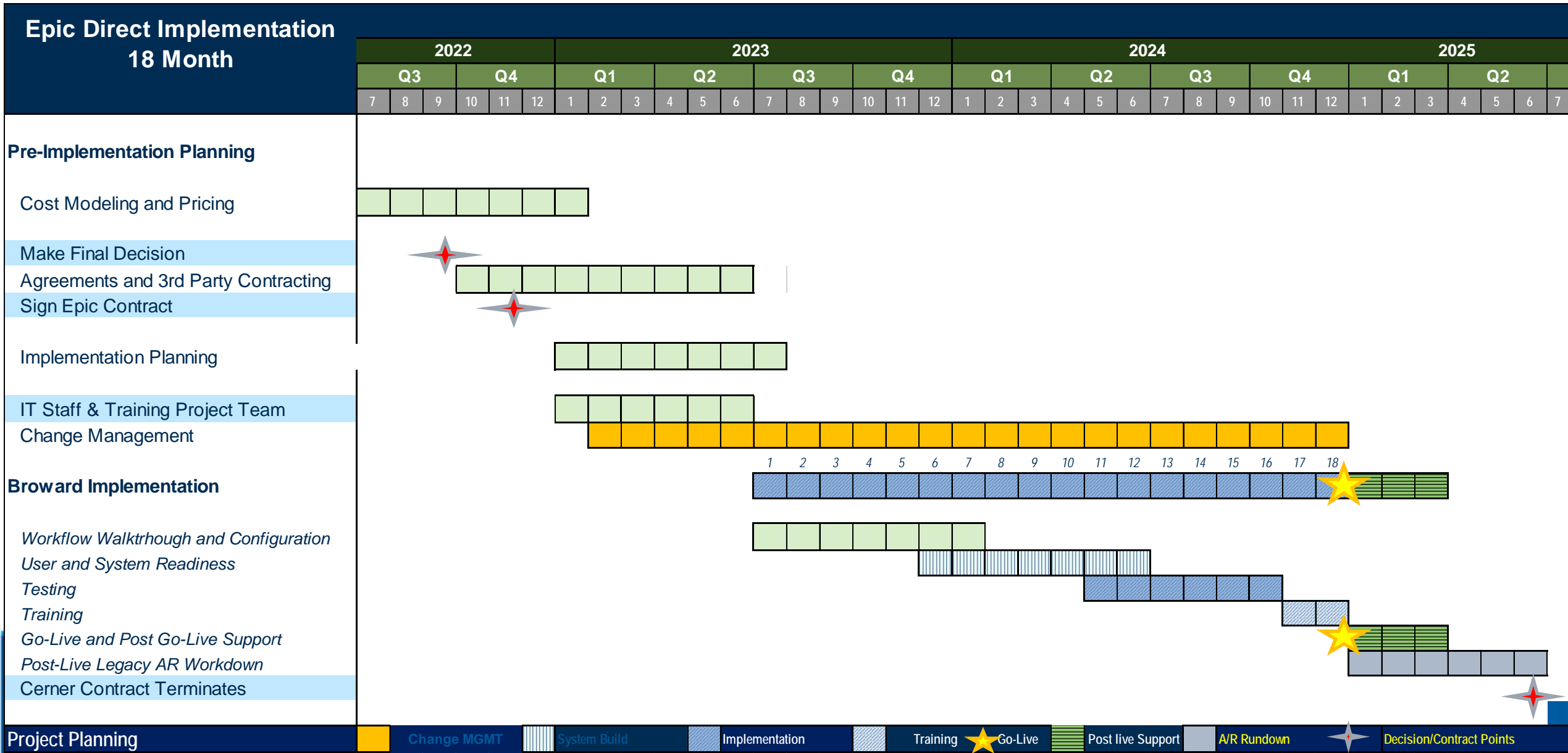
Cerner		2023												2024												
		Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
Broward Health		Duration	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>Clinical Optimization</b>																										
Clinically Driven Revenue Cycle (CDRC)		8																								
CDRC Assessment		2																								
CDRC Critical Path Items		3																								
CDRC Optimizations		6																								
Accelerated Optimization of Current Footprint		14																								
Location and Organization Redesign		5																								
Assess and Optimize		12																								
<b>Clinical</b>																										
CareAware Connect		8																								
Infection Control/ASP/AUR		6																								
Infusion Suite		9																								
Bridge Blood & Breast Milk		10																								
<b>Specialty</b>																										
Oncology		14																								
Cavevive (Survivorship)		3																								
Behavioral		11																								
<b>Engage &amp; Access + Revenue Cycle migration</b>																										
Millennium Registration/Scheduling Uplift + Soarian Rev Cycle		18																								
<b>Population Health</b>																										
EDW Advance																										
<b>Performance Improvement</b>																										
Sepsis		8																								
VTE Prevention		6																								
<b>Technical Projects &amp; Upgrades</b>																										
P2 Migration (SAAS)		3																								
Enterprise Device Connectivity		6																								
CareAware migration (cloud)																										
MDI/iBus clean up																										
EDM Upgrade		4																								

Note: Catalog only items are not represented in this timeline



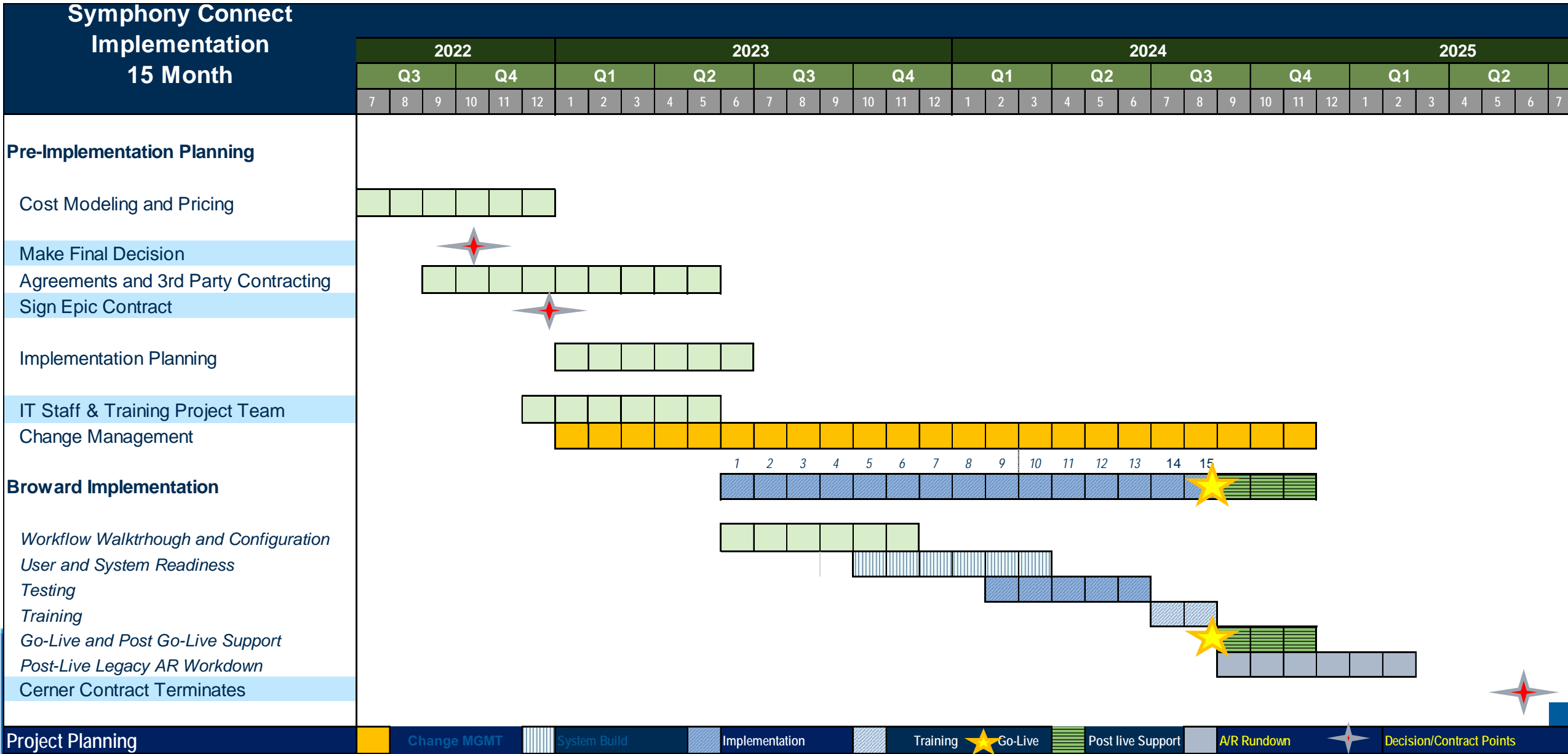
# EPIC DIRECT

## IMPLEMENTATION TIMELINE - 18 MONTHS (BEGINNING JANUARY 2023)



# EPIC SYMPHONY WITH MEMORIAL

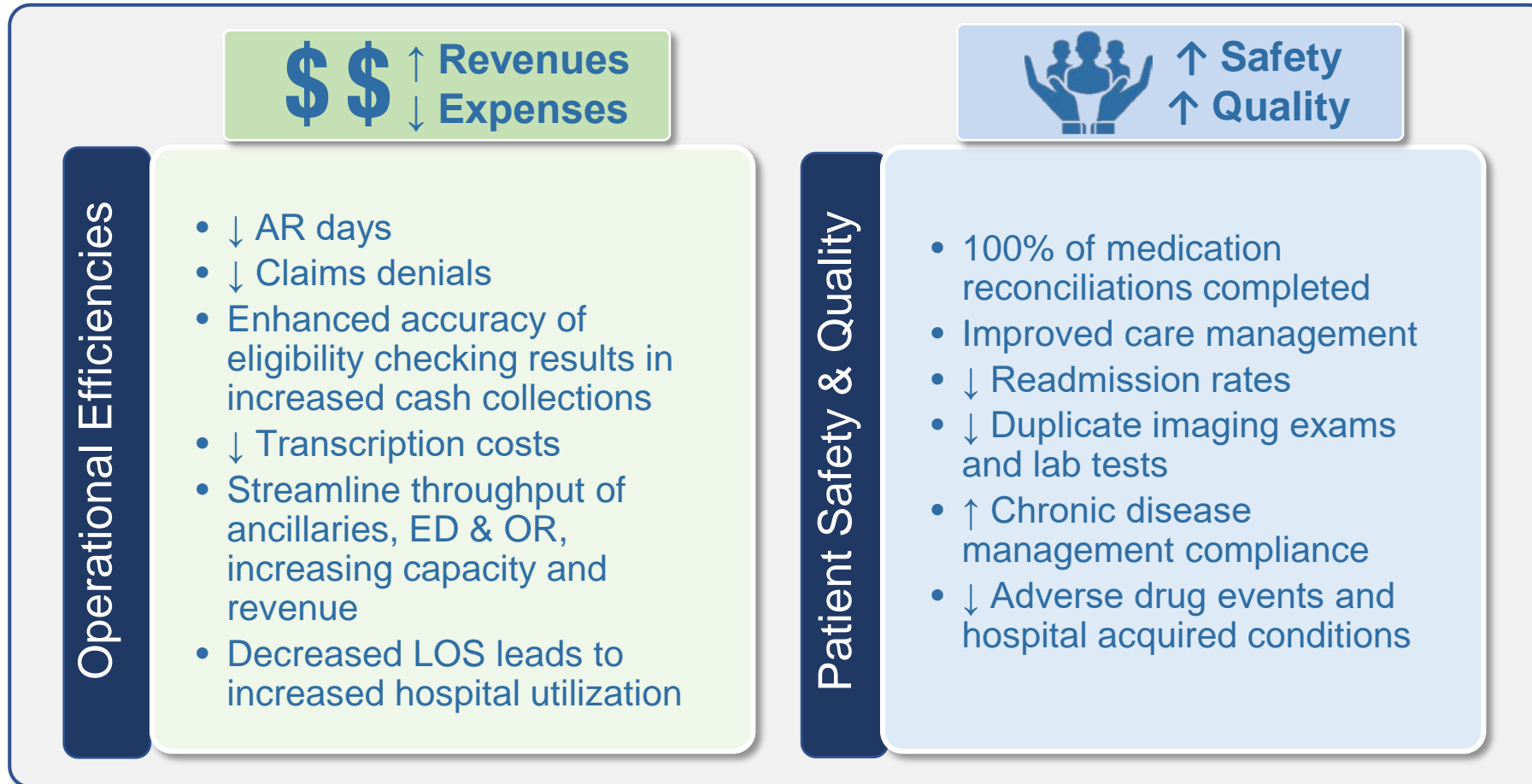
## IMPLEMENTATION TIMELINE - 15 MONTHS (BEGINNING JANUARY 2023)



# *Identify* Benefit Opportunities

# BENEFITS IDENTIFICATION & REALIZATION MODEL

## OPPORTUNITY FOR IMPROVING “TECHNOLOGY ENABLED” OUTCOMES

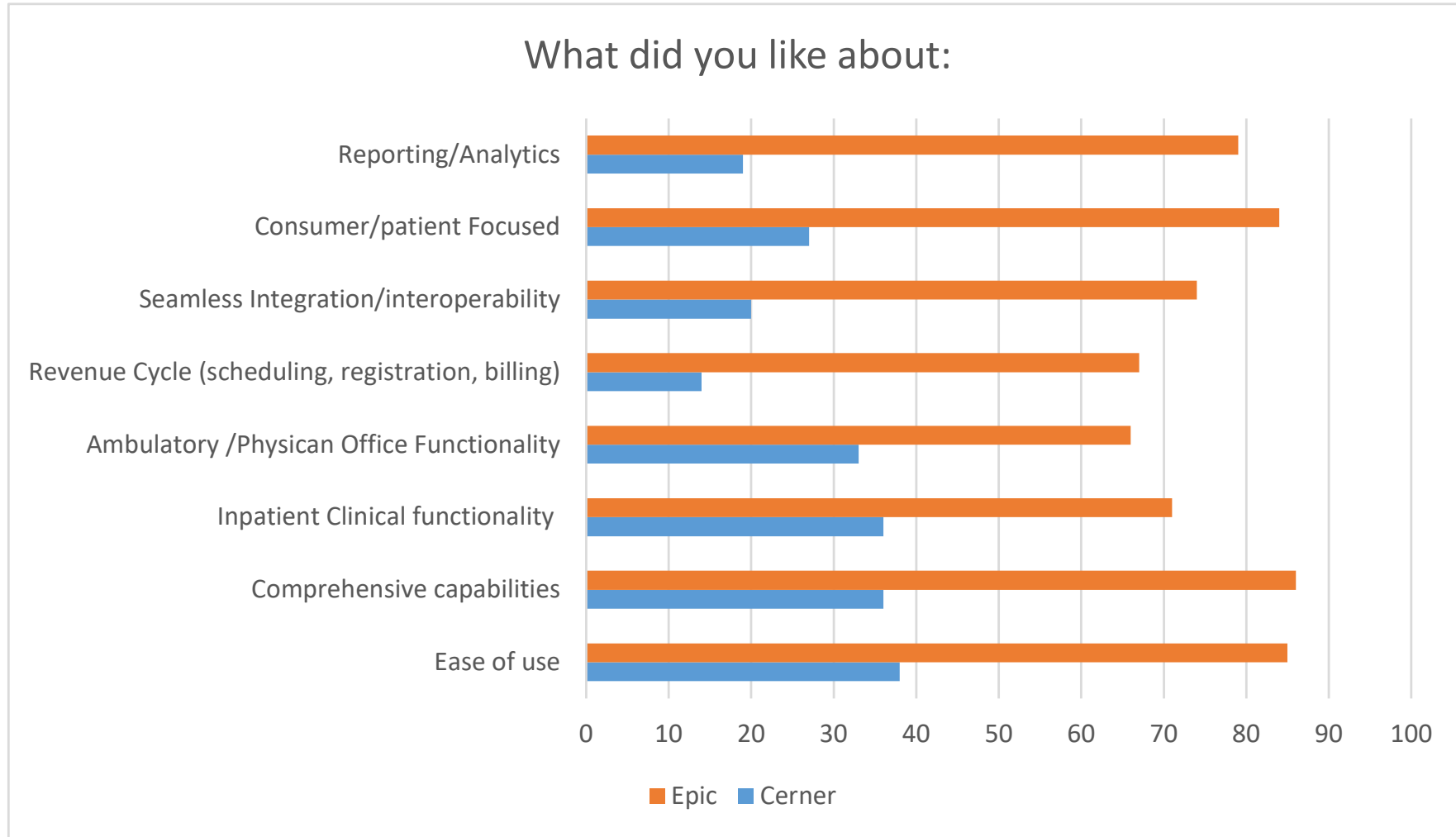




# *Survey Results*

# BROWARD SURVEY RESULTS

## WHAT DID YOU LIKE ABOUT EACH VENDOR PRODUCT PRESENTATION?



# *Finalize Preferred Option and Next Steps*

# NEXT STEPS

- *Identify* preferred Option, Approach, and Kickoff / Timeline
- *Estimate* and commit to Benefit ranges
  - Clinical improvements
  - Better care coordination
  - Operational improvements
  - Patient engagement with more self-service tools
  - Combined staffing
- *Establish* Project and On-going Support Governance
- *Determine and commit* to the level of sponsorship, change management, business transformation, and benefits realization required:
  - To achieve projected benefits for Broward Health's providers, users, and Broward County patients and residents
- Others?

# Thank You



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