2024 AHA Annual Survey
Information Technology Supplement File Layout

Note: Key FOLLOWS each Question set

Field Description	Database Field Name
AHA Identification Number	ID
Medicare Provider Number	MCRNUM
Hospital name	MNAME
Street Address	MLOCADDR
City	MLOCCITY
State	MSTATE
ZIP code	MLOCZIP
Total facility beds set up and staffed	BDTOT
Control/ownership	MCNTRL

Key

Government, nonfederal

12 = State
13 = County
14 = City
15 = City-county
16 = Hospital district or authority

Nongovernment, not-for-profit

21 = Church operated
23 = Other

Investor-owned, for-profit

31 = Individual
32 = Partnership
33 = Corporation

Government, federal

40 = Department of Defense
44 = Public Health Service other than 47
45 = Veterans Affairs
46 = Federal other than 41-45, 47-48
47 = Public Health Service Indian Service
48 = Department of Justice

Field Description	Database Field Name
Primary service code	MSERV

Key
10 = General medical and surgical
11 = Hospital unit of an institution (prison hospital, college infirmary, etc.)
12 = Hospital unit within a facility for persons with intellectual disabilities
13 = Surgical
18 = Rural Emergency Hospital
22 = Psychiatric
33 = Tuberculosis and other respiratory diseases
41 = Cancer
42 = Heart
44 = Obstetrics and gynecology
45 = Eye, ear, nose and throat
46 = Rehabilitation
47 = Orthopedic
48 = Chronic disease
49 = Other specialty
50 = Children's general
51 = Children's hospital unit of an institution
52 = Children's psychiatric
53 = Children's tuberculosis and other respiratory diseases
55 = Children's eye, ear, nose and throat
56 = Children's rehabilitation
57 = Children's orthopedic
58 = Children's chronic disease
59 = Children's other specialty
62 = Intellectual disabilities
80 = Acute Long-Term Care
82 = Alcoholism and other chemical dependency
90 = Children's acute long-term
91 = Children's cancer

EHR System and IT Vendors

1. Which vendor below provides your primary <u>inpatient</u> EHR/EMR system? *"Primary" is defined as the system that is used for the largest number of patients or the system in which you have made the single largest investment. Please answer based on the vendor name rather than product. (Check only one)*

	Survey Question Number	Database Field Name
Primary provider of inpatient EHR	Q1	PIEMR
Primary provider of inpatient EHR - other description	Q1_OTH	PIEMRO

Key
1 = Allscripts
2 = Cerner/Oracle Health
3 = eClinical works
4 = Eclipsys
5 = Epic
6 = GE
7 = McKesson
8 = MED3000
9 = Meditech
10 = NextGen
11 = Harris Healthcare/QuadraMed
12 = Sage
13 = Siemens
14 = Self-developed
15 = Other (specify)
Other described
16 = Would prefer not to disclose
17 = CPSI/Evident
18 = HMS
19 = Healthland
20 = Vitera/Greenway
21 = Evident
22 = MEDHOST
24 = Prognosis
25 = Athenahealth
26 = MedWorx
27 = Health Care System
28 = Azalea Health/Prognosis
29 = Altera Digital Health
30 = We do not use an EMR/EHR system

1a. If you indicated you do NOT use an EMR/EHR system, what are the primary challenge(s) that have prevented your hospital from implementing and using an EMR/EHR system? *(Check all that apply)*

	Survey Question Number	Database Field Name
1. Upfront capital costs/lack of access to capital to install systems	Q1a_1	CHCOST
2. Ongoing cost of maintaining and upgrading systems	Q1a_2	CHMAUP
3. Obtaining physician cooperation	Q1a_3	CHPHYCO
4. Obtaining other staff cooperation	Q1a_4	CHOTHCO
5. Concerns about security or liability for privacy breaches	Q1a_5	CHSECUR
6. Uncertainty about certification requirements	Q1a_6	CHREQUI
7. Limited vendor capacity	Q1a_7	CHLIMVEN
8. Lack of adequate IT personnel in hospital to support implementation/maintenance	Q1a_8	CHITPERS
9. Challenge/complexity of meeting Promoting Interoperability program criteria within implementation timeframe	Q1a_9	CHMPIP
10. Pace and extent of other regulatory requirement changes	Q1a_10	CHPACE
11. Other (challenges implementing EMR/EHR)	Q1a_11	CHOTHER
Other description (challenges implementing EMR/EHR)	Q1a_11_OTH	CHOTHER_DESC

Key
1 = Yes
0 = No

2. Does your hospital provide outpatient care to patients? *Note: Outpatient care refers to both hospital based and satellite outpatient departments/sites.*

	Survey Question Number	Database Field Name
Hospital provides outpatient care to patients	Q2	OPCARE

Key
1 = Yes (go to 3)
0 = No (go to 4)

3. Do you use the same primary inpatient EMR/EHR system vendor (noted above) for your primary outpatient EMR/EHR system?

	Survey Question Number	Database Field Name
Same primary inpatient EHR/EMR system vendor (noted above) for primary outpatient EMR/EHR system	Q3	SIOPV

Key
1 = Yes, share single instance
2 = Yes, but do not share the single instance/version
3 = No
4 = Do not know
5 = NA

4. Are patients who receive care provided by your hospital or outpatient sites able to do the following: *(Check "Yes" only if the functionality has been "turned on" and is fully implemented and available to patients. Check both (1) and (2) if the functionality is turned on in both inpatient and outpatient settings)*

	Survey Question Number	Database Field Name
a. View their health/medical information online in their portal - some or all inpatient sites	Q4a_1	PEFVIIS
a. View their health/medical information online in their portal - some or all outpatient sites	Q4a_2	PEFVIOS
a. View their health/medical information online in their portal - no	Q4a_3	PEFVINO
a. View their health/medical information online in their portal - do not know	Q4a_4	PEFVIDNK
b. Download health/medical information from their medical record from your portal - some or all inpatient sites	Q4b_1	PEFDIIS
b. Download health/medical information from their medical record from your portal - some or all outpatient sites	Q4b_2	PEFDIOS
b. Download health/medical information from their medical record from your portal - no	Q4b_3	PEFDINO
b. Download health/medical information from their medical record from your portal - do not know	Q4b_4	PEFDIDNK
c. Import their medical records from other organizations into your portal - some or all inpatient sites	Q4c_1	PEFIRIS
c. Import their medical records from other organizations into your portal - some or all outpatient sites	Q4c_2	PEFIROS
c. Import their medical records from other organizations into your portal - no	Q4c_3	PEFIRNO
c. Import their medical records from other organizations into your portal - do not know	Q4c_4	PEFIRDNK
d. Electronically transmit (send via email or secure message) health/medical information to a third party from your portal (in a structured format such as CCDA) - some or all inpatient sites	Q4d_1	PEFSFIS

d. Electronically transmit (send via email or secure message) health/medical information to a third party from your portal (in a structured format such as CCDA) - some or all outpatient sites	Q4d_2	PEFSFOS
d. Electronically transmit (send via email or secure message) health/medical information to a third party from your portal (in a structured format such as CCDA)- no	Q4d_3	PEFSFNO
d. Electronically transmit (send via email or secure message) health/medical information to a third party from your portal (in a structured format such as CCDA)- do not know	Q4d_4	PEFSFDNK
e. View their clinical notes (e.g., visit notes including consultation, progress, history and physical) in their portal - some or all inpatient sites	Q4e_1	PEFVCNIS
e. View their clinical notes (e.g., visit notes including consultation, progress, history and physical) in their portal - some or all outpatient sites	Q4e_2	PEFVCNOS
e. View their clinical notes (e.g., visit notes including consultation, progress, history and physical) in their portal - no	Q4e_3	PEFVCNNO
e. View their clinical notes (e.g., visit notes including consultation, progress, history and physical) in their portal - do not know	Q4e_4	PEFVCNDNK
f. Access their health/medical information using applications (apps) configured to meet the application programming interfaces (API) specifications in your EHR - some or all inpatient sites	Q4f_1	PEFAPIIS
f. Access their health/medical information using applications (apps) configured to meet the application programming interfaces (API) specifications in your EHR - some or all outpatient sites	Q4f_2	PEFAPIOS
f. Access their health/medical information using applications (apps) configured to meet the application programming interfaces (API) specifications in your EHR - no	Q4f_3	PEFAPINO
f. Access their health/medical information using applications (apps) configured to meet the application programming interfaces (API) specifications in your EHR - do not know	Q4f_4	PEFAPIDNK
g. Access their health/medical information using applications (apps) configured to meet Fast Healthcare Interoperability Resource (FHIR) specifications - some or all inpatient sites	Q4g_1	PEFFHIIS
g. Access their health/medical information using applications (apps) configured to meet Fast Healthcare Interoperability Resource (FHIR) specifications - some or all outpatient sites	Q4g_2	PEFFHIOS
g. Access their health/medical information using applications (apps) configured to meet Fast Healthcare Interoperability Resource (FHIR) specifications - no	Q4g_3	PEFFHINO
g. Access their health/medical information using applications (apps) configured to meet Fast Healthcare Interoperability Resource (FHIR) specifications - do not know	Q4g_4	PEFFHIDNK
h. Submit patient generated data (e.g., blood glucose, weight) - some or all inpatient sites	Q4h_1	PEFSDIS
h. Submit patient generated data (e.g., blood glucose, weight) - some or all outpatient sites	Q4h_2	PEFSDOS
h. Submit patient generated data (e.g., blood glucose, weight) - no	Q4h_3	PEFSDNO

h. Submit patient generated data (e.g., blood glucose, weight) - do not know	Q4h_4	PEFSDDNK
i. Submit patient generated data (e.g., blood glucose, weight) through apps configured to meet FHIR specifications - some or all inpatient sites	Q4i_1	PEFAPIS
i. Submit patient generated data (e.g., blood glucose, weight) through apps configured to meet FHIR specifications - some or all outpatient sites	Q4i_2	PEFAPOS
i. Submit patient generated data (e.g., blood glucose, weight) through apps configured to meet FHIR specifications - no	Q4i_3	PEFAPNO
i. Submit patient generated data (e.g., blood glucose, weight) through apps configured to meet FHIR specifications - do not know	Q4i_4	PEFAPDNK
j. Send/receive secure message with providers - some or all inpatient sites	Q4j_1	PERSMIS
j. Send/receive secure message with providers - some or all outpatient sites	Q4j_2	PERSMOS
j. Send/receive secure message with providers - no	Q4j_3	PERSMNO
j. Send/receive secure message with providers - do not know	Q4j_4	PERSMDNK

Key
1 = Yes
0 = No

Social Determinants of Health

5. Does your hospital routinely collect data on individual patients' health related social needs (often referred to as social determinants of health) such as transportation, housing, food insecurity or other?

	Survey Question Number	Database Field Name
Hospital routinely collects data on individual patients' health related social needs	Q5	SDHSN

Key
1 = Yes, routinely
2 = Yes, but not routinely
3 = No (go to 8)
4 = Do not know (go to 8)

6a. How are data on individual patient's health related social needs recorded at your hospital? (*Check all that apply*)

	Survey Question Number	Database Field Name
1. Structured electronic screening tool (including 'keying in' information from a paper form) (go to 6b)	Q6a_1	SNESTL
2. Free text note (go to 7)	Q6a_2	SNFTNTE
3. Diagnosis codes (e.g., ICD-10-CM Z codes) (go to 7)	Q6a_3	SNDCDS
4. Non-electronic methods (including those that are scanned into the EHR) (go to 7)	Q6a_4	SNNELEC

Key
1 = Yes
0 = No

6b. If you use a screening tool, what type of screening tool? (*Check all that apply*)

	Survey Question Number	Database Field Name
1. Customized/home grown tool (go to 7)	Q6b_1	SCGTOOL
2. An externally established tool (including modifications of such tools) (go to 6c)	Q6b_2	SCETOOL
3. Don't know (screening tool) (go to 7)	Q6b_3	SCTOOLDNK

Key

1 = Yes
0 = No

6c.Which externally established screening tool(s) does your hospital use? (*Check all that apply*)

	Survey Question Number	Database Field Name
1. CMS AHC (Accountable Health Communities) Health-Related Social Needs Screening Tool	Q6c_1	SCHCOM
2. Upstream Risks Screening Tool and Guide	Q6c_2	SCRISK
3. iHELP (Income, Housing, Education, Legal Status, Literacy, Personal Safety)	Q6c_3	SCHELP
4. EHR vendor-based tool (i.e. screening tool integrated with EHR system)	Q6c_4	SCEHR
5. PRAPARE (Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences)	Q6c_5	SCPRAP
6. WE CARE (Well Child Care, Evaluation, Community Resources, Advocacy Referral, Education)	Q6c_6	SCCARE
7. WellRx	Q6c_7	SCRX
8. Health Leads Screening Toolkit	Q6c_8	SCKIT
9. Other (externally established screening tools)	Q6c_9	SCOTHEX
Other description (externally established screening tools)	Q6c_9_OTH	SCOTHEX_DESC
10. Do not know (externally established screening tools)	Q6c_10	SCDNK

Key
1 = Yes
0 = No

7. How does your hospital use data on patients' health related social needs <u>documented at your hospital</u>? (*Check all that apply*)

	Survey Question Number	Database Field Name
a. For referrals to social service organizations	Q7_A	HSNSSO
b. For population health analytics	Q7_B	HSNPHA
c. For quality management	Q7_C	HSNQMGT
d. To inform community needs assessment or other equity initiatives	Q7_D	HSNCNA
e. To inform clinical decision making	Q7_E	HSNCDM
f. To inform discharge planning	Q7_F	HSNDPLN
g. Other (social needs data usage)	Q7_G	HSNOTH
Other description (social needs data usage)	Q7_G_OTH	HSNOTH_DESC

Key
1 = Yes
0 = No

8. From which sources outside your hospital/health system does your hospital electronically receive data on patients' social needs? (*Check all that apply*)

	Survey Question Number	Database Field Name
a. Health information exchanges (i.e. state, regional, and/or local HIE/HIO(s))	Q8_A	OSNBHIE
b. Social service or community-based referral platform (such as Unite Us or Aunt Bertha)	Q8_B	OSNBCBP
c. National Networks (e.g. CommonWell, eHealthExchange, Carequality)	Q8_C	OSNBNN
d. EHR vendor-based network (e.g. Epic's Care Everywhere)	Q8_D	OSNBVBN
e. Other healthcare organizations	Q8_E	OSNHCORG
f. Community/social service organizations	Q8_F	OSNSSO
g. Other (electronically receive social needs data)	Q8_G	OSNOTH
Other description (electronically receive social needs data)	Q8_G_OTH	OSNOTH_DESC
h. Do not receive data on health-related social needs from any external sources (go to 10)	Q8_H	OSNDN
i. Do not know (electronically receive social needs data) (go to 10)	Q8_I	OSNDNK

Key
1 = Yes
0 = No

9. If you indicated receiving data on patients' health related social needs from sources <u>outside your hospital/health system</u>, how do you use these data? (*Check all that apply*)

	Survey Question Number	Database Field Name
a. For screening at our hospital (e.g., prompt screening, prepopulate screening tool)	Q9_A	ESSCREEN
b. For referrals to social service organization	Q9_B	ESSSO
c. For population health analytics	Q9_C	ESPHA
d. To inform community needs assessment or other equity initiatives	Q9_D	ESCNA
e. To inform clinical decision making	Q9_E	ESCDM
f. To inform discharge planning	Q9_F	ESDPLN
g. Other (using external data)	Q9_G	ESOTH
Other description (using external data)	Q9_G_OTH	ESOTH_DESC

Key
1 = Yes
0 = No

Participation in health information exchange networks

10. Please indicate your level of participation in a <u>state, regional, and/or local</u> health information exchange (HIE) or health information organization (HIO). *Note: This does not refer to a private, enterprise network.*

	Survey Question Number	Database Field Name
Level of HIE or HIO participation	Q10	RHIO_LVL1

Key

1 = HIE/HIO is operational in my area and we are participating and actively exchanging data in at least one HIE/HIO

2 = HIE/HIO is operational in my area but we are not participating

3 = HIE/HIO is not operational in my area

4 = Do not know

11. Which of the following <u>national</u> health information exchange networks and/or frameworks does your hospital currently actively participate in (i.e., operational exchange)? *Check all that apply*

	Survey Question Number	Database Field Name
a. CommonWell Health Alliance	Q11_A	CWHA
b. e-Health Exchange	Q11_B	HLTHXCH
c. Civitas (formerly SHIEC)/Patient Centered Data Home (PCDH)	Q11_C	SHIEC
d. Carequality (network-to-network trust/governance framework	Q11_D	SPCAREQ
e. EHR vendor-based-network that enables record location and exchange within the EHR vendor's network of users (e.g., Epic's Care Everywhere)	Q11_E	VENNET
f. Other national health information exchange network	Q11_F	OTHNET
Other national health information exchange network description	Q11_F_OTH	OTHNET_DESC
g. Do not participate in any national health information exchange networks (either via vendor or directly)	Q11_G	NETNO
h. Do not know (national health information exchange network)	Q11_H	NETDNK

Key
1 = Yes
0 = No

Trusted Exchange Framework and Common Agreement

12. Are you aware of the Trusted Exchange Framework and Common Agreement (TEFCA)?

	Survey Question Number	Database Field Name
Aware of the Trusted Exchange Framework and Common Agreement (TEFCA)	Q12	ATEFCA

Key
1 = Yes
0 = No (go to 14)

13. If yes, are you currently participating or do you plan to participate in TEFCA exchange (such as through your HIE or other national network)?

	Survey Question Number	Database Field Name
Currently or planning to participate in TEFCA exchange	Q13	PTEFCA

Key
1 = Yes, currently participating and have partner/contract in place
2 = Yes, plan to participate and have partner/contract in place
3 = Yes, plan to participate but do not have partner/contract in place
4 = No, not participating and do not plan to
5 = Do not know

Public Health Reporting

14. How does your hospital submit data for public health reporting related to the activities listed below? *Note this is referring to data generated through clinical processes involving patient care (production data NOT test data).*

	Survey Question Number	Database Field Name
a. Syndromic surveillance reporting - Directly from Electronic health record	Q14a_1	SSREHR
a. Syndromic surveillance reporting - Health information exchange	Q14a_2	SSRHIE
a. Syndromic surveillance reporting - Portal submission	Q14a_3	SSRPS
a. Syndromic surveillance reporting - Flat files	Q14a_4	SSRFF
a. Syndromic surveillance reporting - Not electronically submitting	Q14a_5	SSRNES
a. Syndromic surveillance reporting - Do not know	Q14a_6	SSRDK
b. Immunization registry reporting - Directly from Electronic health record	Q14b_1	IIREHR
b. Immunization registry reporting - Health information exchange	Q14b_2	IIRHIE

b. Immunization registry reporting - Portal submission	Q14b_3	IIRPS
b. Immunization registry reporting - Flat files	Q14b_4	IIRFF
b. Immunization registry reporting - Not electronically submitting	Q14b_5	IIRNES
b. Immunization registry reporting - Do not know	Q14b_6	IIRDK
c. Electronic case reporting - Directly from Electronic health record	Q14c_1	ECREHR
c. Electronic case reporting - Health information exchange	Q14c_2	ECRHIE
c. Electronic case reporting - Portal submission	Q14c_3	ECRPS
c. Electronic case reporting - Flat files	Q14c_4	ECRFF
c. Electronic case reporting - Not electronically submitting	Q14c_5	ECRNES
c. Electronic case reporting - Do not know	Q14c_6	ECRDK
d. Public health registry reporting - Directly from Electronic health record	Q14d_1	PHREHR
d. Public health registry reporting - Health information exchange	Q14d_2	PHRHIE
d. Public health registry reporting - Portal submission	Q14d_3	PHRPS
d. Public health registry reporting - Flat files	Q14d_4	PHRFF
d. Public health registry reporting - Not electronically submitting	Q14d_5	PHRNES
d. Public health registry reporting - Do not know	Q14d_6	PHRDK
e. Clinical data registry reporting - Directly from Electronic health record	Q14e_1	CDREHR
e. Clinical data registry reporting - Health information exchange	Q14e_2	CDRHIE
e. Clinical data registry reporting - Portal submission	Q14e_3	CDRPS
e. Clinical data registry reporting - Flat files	Q14e_4	CDRFF
e. Clinical data registry reporting - Not electronically submitting	Q14e_5	CDRNES
e. Clinical data registry reporting - Do not know	Q14e_6	CDRDK
f. Electronic reportable laboratory result reporting - Directly from Electronic health record	Q14f_1	ERLEHR
f. Electronic reportable laboratory result reporting - Health information exchange	Q14f_2	ERLHIE
f. Electronic reportable laboratory result reporting - Portal submission	Q14f_3	ERLPS
f. Electronic reportable laboratory result reporting - Flat files	Q14f_4	ERLFF
f. Electronic reportable laboratory result reporting - Not electronically submitting	Q14f_5	ERLNES
f. Electronic reportable laboratory result reporting - Do not know	Q14f_6	ERLDK
g. Antimicrobial use and resistance (AUR) - Directly from Electronic health record	Q14g_1	AMICEHR
g. Antimicrobial use and resistance (AUR) - Health information exchange	Q14g_2	AMICHIE
g. Antimicrobial use and resistance (AUR) - Portal submission	Q14g_3	AMICPS
g. Antimicrobial use and resistance (AUR) - Flat files	Q14g_4	AMICFF
g. Antimicrobial use and resistance (AUR) - Not electronically submitting	Q14g_5	AMICNES
g. Antimicrobial use and resistance (AUR) - Do not know	Q14g_6	AMICDK
h. Hospital capacity and utilization of medical supplies - Directly from Electronic health record	Q14h_1	HCUEHR
h. Hospital capacity and utilization of medical supplies - Health information exchange	Q14h_2	HCUHIE
h. Hospital capacity and utilization of medical supplies - Portal submission	Q14h_3	HCUPS
h. Hospital capacity and utilization of medical supplies - Flat files	Q14h_4	HCUFF
h. Hospital capacity and utilization of medical supplies - Not electronically submitting	Q14h_5	HCUNES
h. Hospital capacity and utilization of medical supplies - Do not know	Q14h_6	HCUDK

15. For each type of public health reporting, please indicate whether your hospital uses automated, manual, or a mix of both types of processes to transmit the data.

	Survey Question Number	Database Field Name
a. Syndromic surveillance reporting - Public Health Reporting Type	Q15_A	SSRSTRDT
b. Immunization registry reporting- Public Health Reporting Type	Q15_B	IRRSTRDT
c. Electronic case reporting - Public Health Reporting Type	Q15_C	ECRSTRDT
d. Public health registry reporting - Public Health Reporting Type	Q15_D	PHRSTRDT
e. Clinical data registry reporting - Public Health Reporting Type	Q15_E	CDRSTRDT
f. Electronic reportable laboratory result reporting - Public Health Reporting Type	Q15_F	ERLSTRDT
g. Antimicrobial use and resistance (AUR) - Public Health Reporting Type	Q15_G	AURSTRDT
h. Hospital capacity and utilization of medical supplies - Public Health Reporting Type	Q15_H	HCUSTRDT

16. What are some of the challenges your hospital has experienced <u>in the past</u> year when trying to submit health information <u>electronically</u> to public health agencies? (*Check all that apply*)

	Survey Question Number	Database Field Name
a. Syndromic surveillance reporting - Public health agencies lack the capacity to electronically receive the information	Q16a_1	SSRPHCAP
a. Syndromic surveillance reporting - Do not have the capacity to electronically send the information	Q16a_2	SSRDNCAP
a. Syndromic surveillance reporting - Technical complexity of interfaces, transmission, or submission process	Q16a_3	SSRTCIN
a. Syndromic surveillance reporting - Cost related to interfaces, transmission, or submission	Q16a_4	SSRCOST
a. Syndromic surveillance reporting - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16a_5	SSRVOCAB
a. Syndromic surveillance reporting - Difficulty extracting relevant information from EHR	Q16a_6	SSRDIFEX

a. Syndromic surveillance reporting - Onboarding process for electronic reporting is too cumbersome	Q16a_7	SSRONB
a. Syndromic surveillance reporting - Did not experience any major challenges	Q16a_8	SSRDNEX
b. Immunization registry reporting - Public health agencies lack the capacity to electronically receive the information	Q16b_1	IRRPHCAP
b. Immunization registry reporting - Do not have the capacity to electronically send the information	Q16b_2	IRRDNCAP
b. Immunization registry reporting - Technical complexity of interfaces, transmission, or submission process	Q16b_3	IRRTCIN
b. Immunization registry reporting - Cost related to interfaces, transmission, or submission	Q16b_4	IRRCOST
b. Immunization registry reporting - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16b_5	IRRVOCAB
b. Immunization registry reporting - Difficulty extracting relevant information from EHR	Q16b_6	IRRDIFEX
b. Immunization registry reporting - Onboarding process for electronic reporting is too cumbersome	Q16b_7	IRRONB
b. Immunization registry reporting - Did not experience any major challenges	Q16b_8	IRRDNEX
c. Electronic case reporting - Public health agencies lack the capacity to electronically receive the information	Q16c_1	ECRPHCAP
c. Electronic case reporting - Do not have the capacity to electronically send the information	Q16c_2	ECRDNCAP
c. Electronic case reporting - Technical complexity of interfaces, transmission, or submission process	Q16c_3	ECRTCIN
c. Electronic case reporting - Cost related to interfaces, transmission, or submission	Q16c_4	ECRCOST
c. Electronic case reporting - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16c_5	ECRVOCAB
c. Electronic case reporting - Difficulty extracting relevant information from EHR	Q16c_6	ECRDIFEX
c. Electronic case reporting - Onboarding process for electronic reporting is too cumbersome	Q16c_7	ECRONB
c. Electronic case reporting - Did not experience any major challenges	Q16c_8	ECRDNEX
d. Public health registry reporting - Public health agencies lack the capacity to electronically receive the information	Q16d_1	PHRPHCAP
d. Public health registry reporting - Do not have the capacity to electronically send the information	Q16d_2	PHRDNCAP

d. Public health registry reporting - Technical complexity of interfaces, transmission, or submission process	Q16d_3	PHRTCIN
d. Public health registry reporting - Cost related to interfaces, transmission, or submission	Q16d_4	PHRCOST
d. Public health registry reporting - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16d_5	PHRVOCAB
d. Public health registry reporting - Difficulty extracting relevant information from EHR	Q16d_6	PHRDIFEX
d. Public health registry reporting - Onboarding process for electronic reporting is too cumbersome	Q16d_7	PHRONB
d. Public health registry reporting - Did not experience any major challenges	Q16d_8	PHRDNEX
e. Clinical Data registry reporting - Public health agencies lack the capacity to electronically receive the information	Q16e_1	CDRPHCAP
e. Clinical Data registry reporting - Do not have the capacity to electronically send the information	Q16e_2	CDRDNCAP
e. Clinical Data registry reporting - Technical complexity of interfaces, transmission, or submission process	Q16e_3	CDRTCIN
e. Clinical Data registry reporting - Cost related to interfaces, transmission, or submission	Q16e_4	CDRCOST
e. Clinical Data registry reporting - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16e_5	CDRVOCAB
e. Clinical Data registry reporting - Difficulty extracting relevant information from EHR	Q16e_6	CDRDIFEX
e. Clinical Data registry reporting - Onboarding process for electronic reporting is too cumbersome	Q16e_7	CDRONB
e. Clinical Data registry reporting - Did not experience any major challenges	Q16e_8	CDRDNEX
f. Electronic reportable laboratory result reporting - Public health agencies lack the capacity to electronically receive the information	Q16f_1	ERLPHCAP
f. Electronic reportable laboratory result reporting - Do not have the capacity to electronically send the information	Q16f_2	ERLDNCAP
f. Electronic reportable laboratory result reporting - Technical complexity of interfaces, transmission, or submission process	Q16f_3	ERLTCIN
f. Electronic reportable laboratory result reporting - Cost related to interfaces, transmission, or submission	Q16f_4	ERLCOST
f. Electronic reportable laboratory result reporting - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16f_5	ERLVOCAB

f. Electronic reportable laboratory result reporting - Difficulty extracting relevant information from EHR	Q16f_6	ERLDIFEX
f. Electronic reportable laboratory result reporting - Onboarding process for electronic reporting is too cumbersome	Q16f_7	ERLONB
f. Electronic reportable laboratory result reporting - Did not experience any major challenges	Q16f_8	ERLDNEX
g. Antimicrobial use and resistance (AUR) - Public health agencies lack the capacity to electronically receive the information	Q16g_1	AURPHCAP
g. Antimicrobial use and resistance (AUR) - Do not have the capacity to electronically send the information	Q16g_2	AURDNCAP
g. Antimicrobial use and resistance (AUR) - Technical complexity of interfaces, transmission, or submission process	Q16g_3	AURTCIN
g. Antimicrobial use and resistance (AUR) - Cost related to interfaces, transmission, or submission	Q16g_4	AURCOST
g. Antimicrobial use and resistance (AUR) - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16g_5	AURVOCAB
g. Antimicrobial use and resistance (AUR) - Difficulty extracting relevant information from EHR	Q16g_6	AURDIFEX
g. Antimicrobial use and resistance (AUR) - Onboarding process for electronic reporting is too cumbersome	Q16g_7	AURONB
g. Antimicrobial use and resistance (AUR) - Did not experience any major challenges	Q16g_8	AURDNEX
h. Hospital capacity and utilization of medical supplies - Public health agencies lack the capacity (e.g., technical, staffing) to electronically receive the information	Q16h_1	HCUPHCAP
h. Hospital capacity and utilization of medical supplies - Do not have the capacity (e.g., technical, staffing) to electronically send the information	Q16h_2	HCUDNCAP
h. Hospital capacity and utilization of medical supplies - Technical complexity of interfaces, transmission, or submission process	Q16h_3	HCUTCIN
h. Hospital capacity and utilization of medical supplies - Cost related to interfaces, transmission, or submission	Q16h_4	HCUCOST
h. Hospital capacity and utilization of medical supplies - Use different vocabulary standards than the public health agency, making it difficult to submit	Q16h_5	HCUVOCAB
h. Hospital capacity and utilization of medical supplies - Difficulty extracting relevant information from EHR	Q16h_6	HCUDIFEX
h. Hospital capacity and utilization of medical supplies - Onboarding process for electronic reporting is too cumbersome	Q16h_7	HCUONB
h. Hospital capacity and utilization of medical supplies - Did not experience any major challenges	Q16h_8	HCUDNEX

Advanced Analytics

17. Please indicate whether you have used electronic clinical data from the EHR or other electronic system in your hospital to: *(Check all that apply)*

	Survey Question Number	Database Field Name
a. Create an approach for clinicians to query the data	Q17_A	EQUERY
b. Assess adherence to clinical practice guidelines	Q17_B	EADHG
c. Identify care gaps for specific patient populations	Q17_C	EIDGAP
d. Support a continuous quality improvement process	Q17_D	ESIMP
e. Monitor patient safety (e.g. adverse drug events)	Q17_E	EMSAF
f. Identify high risk patients for follow-up care using algorithm or other tools	Q17_F	ERALG
g. None of the above (electronic clinical data use)	Q17_G	ENOTA

Key
1 = Yes
0 = No

18. Does your hospital use any machine learning or other predictive models that display output or recommendations (e.g., risk scores or clinical decision support) in your EHR or an App embedded in or launched by your EHR?

	Survey Question Number	Database Field Name
a. Machine Learning	Q18_a	PREDML
b. Other non-machine learning predictive models (e.g. APACHE IV)	Q18_b	PREDOTH

Key
1 = Yes
2 = No
3 = Do not know

19. To which of the following uses has your hospital applied machine learning or other predictive models? *(Check all that apply)*

	Survey Question Number	Database Field Name
a. Predicting health trajectories or risks for inpatients	Q19_A	AITRAJ
b. Identify high risk outpatients to inform follow-up care	Q19_B	AIRFOL
c. Monitor health	Q19_C	AIMHEA
d. Recommend treatments	Q19_D	AIRECT
e. Simplify or automate billing procedures	Q19_E	AIBILL

	Survey Question Number	Database Field Name
f. Facilitate scheduling	Q19_F	AISCHE
g. Other (operational process optimization)	Q19_G	AIPOTH
Other description (operational process optimization)	Q19_G_OTH	AIPOTH_DESC
h. Other (clinical use cases)	Q19_H	AICLOTH
Other description (other clinical use cases)	Q19_H_OTH	AICLOTH_DESC
I. None of the above (machine learning application)	Q19_I	AINOTA
j. Do not know (machine learning application)	Q19_J	AIDNK

Key
1 = Yes
0 = No

20. Who developed the machine learning or other predictive models used at your hospitals? (*Check all that apply*)

	Survey Question Number	Database Field Name
a. Our EHR Developer	Q20_A	MLDEV
b. A third-party developer	Q20_B	MLTHD
c. Self-developed	Q20_C	MLSED
d. Public domain	Q20_D	MLPUBD
e. Do not know (machine learning development)	Q20_E	MLDNK

Key
1 = Yes
0 = No

21. What share of your machine learning or other predictive models have been evaluated using data from your hospital or health system for:

	Survey Question Number	Database Field Name
a. Model Accuracy (e.g., sensitivity or specificity)	Q21_A	MLACCU
b. Model Bias (e.g., false positive parity across patients from different races, conditions, or other factors)	Q21_B	MLBIAS
c. Post-implementation evaluation or monitoring	Q21_C	MLEVAL

22. Who in your hospital or health care system is accountable for evaluating models? *(Check all that apply)*

	Survey Question Number	Database Field Name
a. Designated Senior Executive (CMIO/CIO/Director of Technology)	Q22_A	AEMDSE
b. Specific Committee or Task Force for Machine Learning or Predictive Modeling	Q22_B	AEMSCTF
c. Clinical Decision Support Committee/other non- Machine Learning or Predictive Modeling specific Committee	Q22_C	AEMDSC
d. Division/Department Leaders	Q22_D	AEMDEPL
e. IT staff	Q22_E	AEMITS
f. None of the above (evaluating models)	Q22_F	AEMNONE

23. Does your hospital or health system have a large language model (e.g ChatGPT, GPT-4, Google Gemini, Nuance DAX Copilot) integrated into the electronic health record?

	Survey Question Number	Database Field Name
Hospital uses large language model	Q23	LLMHOS

Use of Apps and APIs for Data Sharing and Information Access

24. Through what method(s) does your hospital directly <u>integrate data for clinical purposes</u> into your EHR received from third party technology (e.g., app, website, or medical device) for the following uses? *Check all that apply*

	Survey Question Number	Database Field Name
a. Patient monitoring devices - Standards-based API (integrate clinical data)	Q24_a_1	PMIDAPI
a. Patient monitoring devices - Other method(s) (integrate clinical data)	Q24_a_2	PMIDOTH
a. Patient monitoring devices - Do not receive or integrate data for this purpose (integrate clinical data	Q24_a_3	PMIDDNR
a. Patient monitoring devices - Do not know (integrate clinical data)	Q24_a_4	PMIDDK
b. Telehealth visits - Standards-based API (integrate clinical data)	Q24_b_1	TVIDAPI
b. Telehealth visits - Other method(s) (integrate clinical data)	Q24_b_2	TVIDOTH
b. Telehealth visits - Do not receive or integrate data for this purpose (integrate clinical data)	Q24_b_3	TVIDDNR
b. Telehealth visits - Do not know (integrate clinical data)	Q24_b_4	TVIDDK
c. Clinical decision support - Standards-based API (integrate clinical data)	Q24_c_1	CDIDAPI
c. Clinical decision support - Other method(s) (integrate clinical data)	Q24_c_2	CDIDOTH
c. Clinical decision support - Do not receive or integrate data for this purpose (integrate clinical data)	Q24_c_3	CDIDDNR
c. Clinical decision support - Do not know (integrate clinical data)	Q24_c_4	CDIDDK
d. Population health - Standards-based API (integrate clinical data)	Q24_d_1	PHIDAPI
d. Population health - Other method(s) (integrate clinical data)	Q24_d_2	PHIDOTH
d. Population health - Do not receive or integrate data for this purpose (integrate clinical data)	Q24_d_3	PHIDDNR
d. Population health - Do not know (integrate clinical data)	Q24_d_4	PHIDDK
e. Other - Standards-based API (integrate clinical data)	Q24_e_1	OTHIDAPI
e. Other - Other method(s) (integrate clinical data)	Q24_e_2	OTHIDOTH
e. Other - Do not receive or integrate data for this purpose (integrate clinical data)	Q24_e_3	OTHIDDNR
e. Other - Do not know (integrate clinical data)	Q24_e_4	OTHIDDK
Other description (integrate clinical data)	Q24_e_OTH	OTHIDDK_DESC

Key
1 = Yes
0 = No

25. Through what method(s) does your hospital <u>provide data for clinical purposes</u> from your EHR to third-party technology? (e.g., app, website, or medical device) for the following uses? *(Check all that apply)*

	Survey Question Number	Database Field Name
a. Patient monitoring devices - Standards-based API (provide clinical data)	Q25_a_1	PMPDAPI
a. Patient monitoring devices - Other method(s) (provide clinical data)	Q25_a_2	PMPDOTH
a. Patient monitoring devices - Do not provide data for this purpose (provide clinical data)	Q25_a_3	PMPDDNR
a. Patient monitoring devices - Do not know (provide clinical data)	Q25_a_4	PMPDDK
b. Telehealth visits - Standards-based API (provide clinical data)	Q25_b_1	TVPDAPI
b. Telehealth visits - Other method(s) (provide clinical data)	Q25_b_2	TVPDOTH
b. Telehealth visits - Do not provide data for this purpose (provide clinical data)	Q25_b_3	TVPDDNR
b. Telehealth visits - Do not know (provide clinical data)	Q25_b_4	TVPDDK
c. Clinical decision support - Standards-based API (provide clinical data)	Q25_c_1	CDPDAPI
c. Clinical decision support - Other method(s) (provide clinical data)	Q25_c_2	CDPDOTH

	Survey Question Number	Database Field Name
c. Clinical decision support - Do not provide data for this purpose (provide clinical data)	Q25_c_3	CDPDDNR
c. Clinical decision support - Do not know (provide clinical data)	Q25_c_4	CDPDDK
d. Population health - Standards-based API (provide clinical data)	Q25_d_1	PHPDAPI
d. Population health - Other method(s) (provide clinical data)	Q25_d_2	PHPDOTH
d. Population health - Do not provide data for this purpose (provide clinical data)	Q25_d_3	PHPDDNR
d. Population health - Do not know (provide clinical data)	Q25_d_4	PHPDDK
e. Other - Standards-based API (provide clinical data)	Q25_e_1	OTHPDAPI
e. Other - Other method(s) (provide clinical data)	Q25_e_2	OTHPDOTH
e. Other - Do not provide data for this purpose (provide clinical data)	Q25_e_3	OTHPDDNR
e. Other - Do not know (provide clinical data)	Q25_e_4	OTHPDDK
Other description (provide clinical data)	Q25_e_OTH	OTHPDDK_DESC

Key
1 = Yes
0 = No

26. Through what method(s) does your hospital directly <u>integrate data for administrative purposes</u> into your EHR received from third-party technology? (e.g., app, website, or external system) for the following uses? *(Check all that apply)*

	Survey Question Number	Database Field Name
a. Scheduling/Intake - Standards-based API (integrate administrative data)	Q26_a_1	SIIDAPI
a. Scheduling/Intake - Other methods(s) (integrate administrative data)	Q26_a_2	SIIDOTH
a. Scheduling/Intake - Do not receive or integrate data for this purpose (integrate administrative data)	Q26_a_3	SIIDDNR
a. Scheduling/Intake - Do not know (integrate administrative data)	Q26_a_4	SIIDDK
b. Prior authorization - Standards-based API (integrate administrative data)	Q26_b_1	PAIDAPI
b. Prior authorization - Other methods(s) (integrate administrative data)	Q26_b_2	PAIDOTH
b. Prior authorization - Do not receive or integrate data for this purpose (integrate administrative data)	Q26_b_3	PAIDDNR
b. Prior authorization - Do not know (integrate administrative data)	Q26_b_4	PAIDDK
c. Quality reporting and management - Standards-based API (integrate administrative data)	Q26_c_1	QRIDAPI
c. Quality reporting and management - Other methods(s) (integrate administrative data)	Q26_c_2	QRIDOTH
c. Quality reporting and management - Do not receive or integrate data for this purpose (integrate adm	Q26_c_3	QRIDDNR
c. Quality reporting and management - Do not know (integrate administrative data)	Q26_c_4	QRIDDK
d. Other - Standards-based API (integrate administrative data)	Q26_d_1	OTHIADAPI
d. Other - Other methods(s) (integrate administrative data)	Q26_d_2	OTHIADOTH
d. Other - Do not receive or integrate data for this purpose (integrate administrative data)	Q26_d_3	OTHIADDNR
d. Other - Do not know (integrate administrative data)	Q26_d_4	OTHIADDK
Other description (integrate administrative data)	Q26_d_OTH	OTHIAD_DESC

Key
1 = Yes
0 = No

27. Through what method(s) does your hospital <u>provide data for administrative purposes</u> from your EHR to third-party technology? (e.g app, website, or medical device) for any of the following uses and by what method? *(Check all that apply)*

	Survey Question Number	Database Field Name
a. Scheduling/Intake - Standards-based API (provide administrative data)	Q27_a_1	SIPDAPI
a. Scheduling/Intake - Other methods(s) (provide administrative data)	Q27_a_2	SIPDOTH
a. Scheduling/Intake - Do not provide data for this purpose (provide administrative data)	Q27_a_3	SIPDDNR
a. Scheduling/Intake - Do not know (provide administrative data)	Q27_a_4	SIPDDK
b. Prior authorization - Standards-based API (provide administrative data)	Q27_b_1	PAPDAPI
b. Prior authorization - Other methods(s) (provide administrative data)	Q27_b_2	PAPDOTH
b. Prior authorization - Do not provide data for this purpose (provide administrative data)	Q27_b_3	PAPDDNR
b. Prior authorization - Do not know (provide administrative data)	Q27_b_4	PAPDDK
c. Quality reporting and management - Standards-based API (provide administrative data)	Q27_c_1	QRPDAPI
c. Quality reporting and management - Other methods(s) (provide administrative data)	Q27_c_2	QRPDOTH
c. Quality reporting and management - Do not provide data for this purpose (provide administrative da	Q27_c_3	QRPDDNR
c. Quality reporting and management - Do not know (provide administrative data)	Q27_c_4	QRPDDK
d. Other - Standards-based API (provide administrative data)	Q27_d_1	OTHPADAPI
d. Other - Other methods(s) (provide administrative data)	Q27_d_2	OTHPADOTH
d. Other - Do not provide data for this purpose (provide administrative data)	Q27_d_3	OTHPADDNR
d. Other - Do not know (provide administrative data)	Q27_d_4	OTHPADDK
Other description (provide administrative data)	Q27_d_OTH	OTHPAD_DESC

Key
1 = Yes
0 = No