AIRA Education Survey Summary and Education Plan for 2014-2015

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Executive Summary

The American Immunization Registry Association (AIRA) is committed to promoting the development and implementation of Immunization Information Systems (IIS). To help realize this commitment, AIRA plans, develops and facilitates educational opportunities within the IIS community. In April 2014, the AIRA Education Steering Committee (ESC) surveyed the AIRA membership to assess the educational needs of the IIS community. This report contains an analysis of the 2014 survey, summarizes the results, and presents an outline of the October 2014 – September 2015 education work plan.

Survey Respondents: AIRA conducted the Education Survey online and received an excellent response from the IIS community. A total of 129 people responded, of whom 114 (88%) represented 48 different IIS awardees/projects (out of a total of 64 CDC-funded awardees). The remaining respondents identified themselves as affiliated with vendors, private, not-for-profit organizations, and "other." Thirty-six percent indicated their primary job was managerial, 29% programmatic, 18% technical, 8% educational, and 9% "other." The majority spend over 75% of their time on IIS activities. Almost 80% of respondents have been involved in IIS for more than three years, with a remarkable 57% having more than six years of experience. Eighty percent listed their IIS as Highly Functional or close to Highly Functional.

Priority Topic Areas: We asked respondents to rank six different topic areas according to their needs for education or assistance from AIRA. Rankings were on a scale of 1-6 with 1 being highest priority and 6 being lowest. The ranking was forced, allowing the selection of each number only once. The six topic areas respondents could choose from were *Data Quality, Data Use, Privacy and Confidentiality, Funding/IIS Management, Provider Relations, and Technical Capacity/Integration*.

Three areas received a significantly higher ranking than the others. *Data Quality, Technical Capacity/Integration, and Funding & IIS Management* received the highest number of 1st priority votes, receiving 30, 28, and 27 votes, respectively. The three lowest rated topic areas – *Provider Relations, Privacy/Confidentiality*, and *Data Use* – were ranked #1 by fewer than six people each. Even when combining #1 and #2 priority ratings, the preference for topics remained the same. However, when combining ratings of #1, #2, and #3, *Data Use* is of more interest than the lower ranked Provider Relations and Privacy/Confidentiality.

Challenges and Successes: The topic area priority results are substantiated by the comments submitted on the open-ended questions about Challenges and Successes. The most frequently described challenges involved interoperability, meaningful use, and EHRs. Data quality challenges and having adequate funding and resources were also frequently mentioned. These comments are consistent with the quantitative results in the ranking of priority topic areas. Some interesting and unexpected information also emerged. Many respondents commented on challenges with workload and competing priorities and demands.

In the area of successes, respondents felt very good about their success with provider recruitment, retention, and use of the IIS. Data quality, data use, and VFC functionality were also frequently mentioned as successes. It is interesting that data quality emerged as a success as well as a challenge,

perhaps reflecting that data quality is integral to the successful functioning of an IIS, and will always remain a high priority.

Subcategories of Topic Areas: Within the category of Data Quality, Data Format was selected as the #1 priority for education or assistance from AIRA by the most respondents, with Data Accuracy coming in second. Within the Technical Capacity/Integration category, 10 subcategories were available for ranking. HL7 & Messaging was selected as the highest priority, with System Architecture/Design coming in second. These two areas maintained a significant lead over the other technical issues even when priority rankings of 1 and 2 were combined. However, with the addition of those ranked as #3 to the analysis, System Implementation, Working with HIEs, Cross-jurisdictional Sharing, and HL7 Transport were ranked higher than the remaining categories. The lowest ranked categories were Patient matching, Forecasting Algorithm, Consumer Access, and VTrckS/Vaccine Ordering. Within the Funding and IIS Management category, Sustainability received three times as many #1 priority votes as any other topic, with Diversified Funding coming in next when the first two ranking levels were combined.

Preferred Methods for Receiving Information: When asked where they get most of their information on IIS developments, respondents were allowed to check as many choices as they wished. Those methods getting the highest number of checks were the CDC Website, the AIRA Website, AIRA National Meetings, MIROW Guides, AIRA Member Calls, and the AIRA Listserv. When asked if AIRA is one of their main resources for IIS related information, 93% said yes. When asked how AIRA could improve its website, respondents answered with suggestions about the website as well as positive feedback.

The survey concluded with an open-ended question for "any other thoughts on how AIRA could better serve your educational needs." Many suggestions were offered, and are listed at the end of the report. Some that were mentioned more than once were: more or longer conferences, more teleconferences, more webinars, and regional meetings.
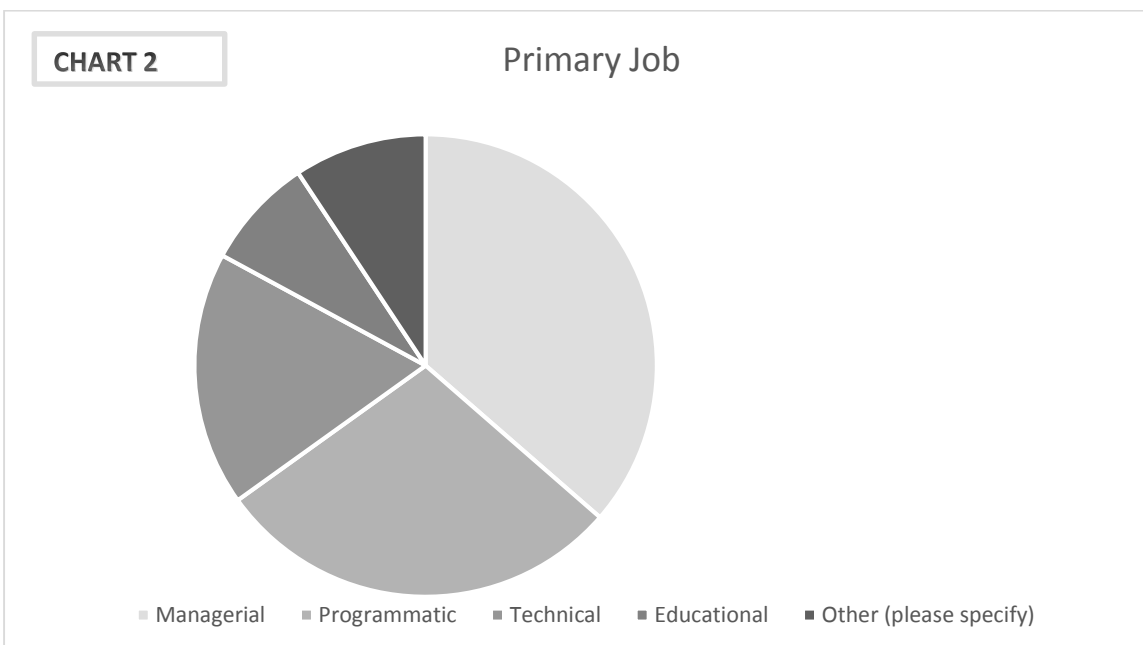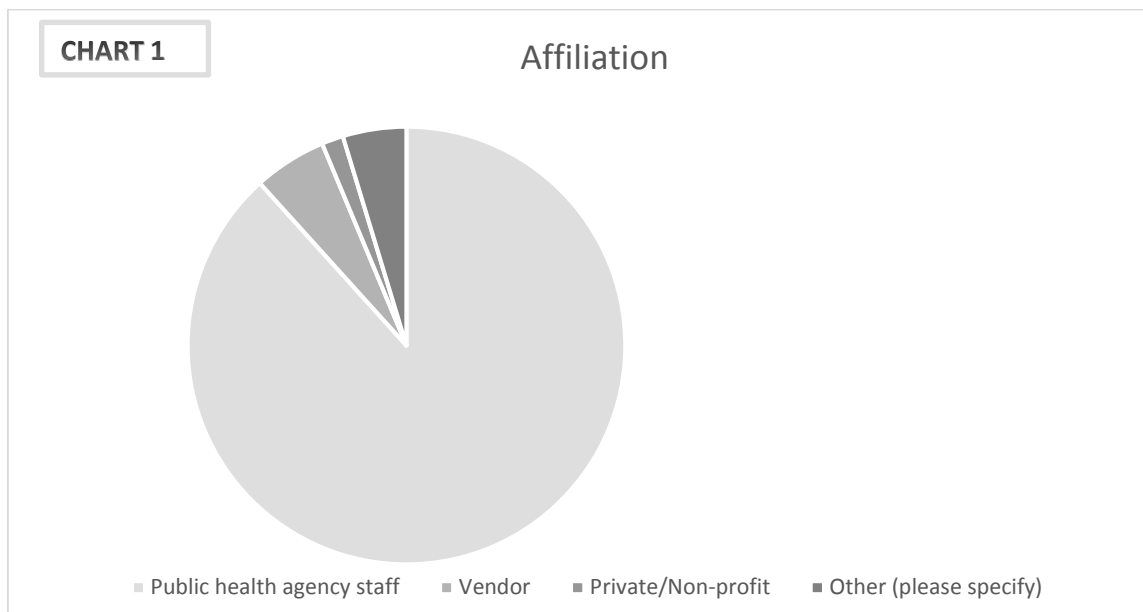
Education Work Plan: Methods and Implementation: AIRA utilizes subject matter experts within the IIS community, AIRA committees and workgroups, and AIRA partner organizations to develop issue-specific education and training programs and resources. Best practices, networking, mentoring and capacity building initiatives are utilized.

In alignment with the survey results and prior experience with the success of various types of educational activities, the AIRA ESC will match topic areas with appropriate modes of delivery. Activities used for the delivery of education, training, capacity building and information sharing programs include but are not limited to:
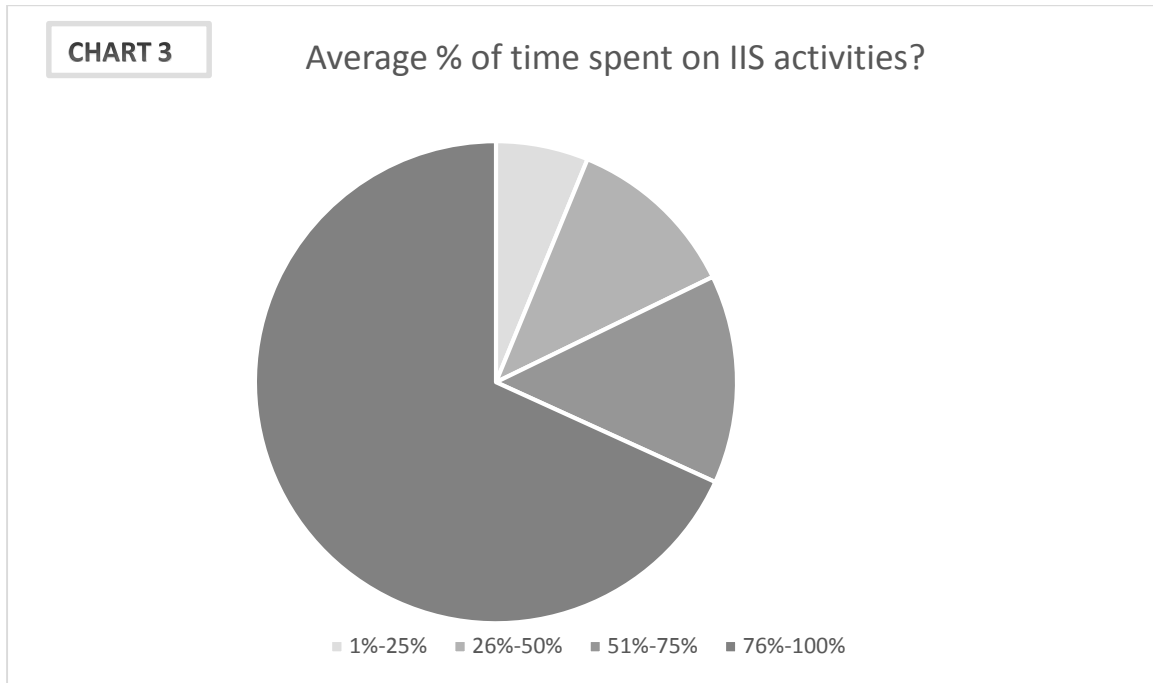
- Workshops at national and regional conferences and meetings;
- Webinars;
- Issue-focused open information conference calls;
- Ad hoc meetings at national conferences;
- AIRA committee and workgroup activities;
- Peer-to-peer mentoring; and
- AIRA web site, *SnapShots* newsletter, MIROW best practice guidelines and mini guides, toolkits, and other publications.
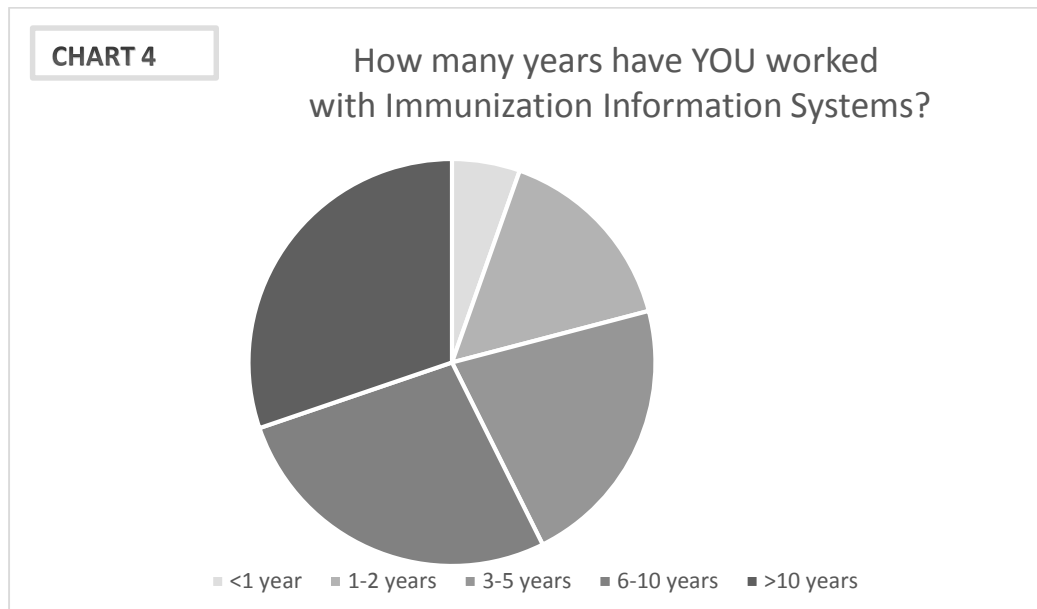
Survey Results: Respondent Information

About the Respondents: 129 people responded to the survey. Of these, 114 individuals represented 48 different IIS grantees/projects, or 75% of 64 CDC grantees (see map in Appendix A). Eighty-eight percent of the 129 respondents were affiliated with a public health agency, 5% with vendors, 2% with private/not for profit organizations, and 5% self-identified as "other" with most of the "other" indicating they worked for a state level IIS or IT Department *(Chart 1).* Thirty-six percent identified their primary job as managerial, 29% as programmatic, 18% as technical, 8% as educational, and 9% as "other" *(Chart 2).*

CHART 1

Affiliation

Public health agency staff   Vendor   Private/Non-profit   Other (please specify)

CHART 2

Primary Job

Managerial   Programmatic   Technical   Educational   Other (please specify)
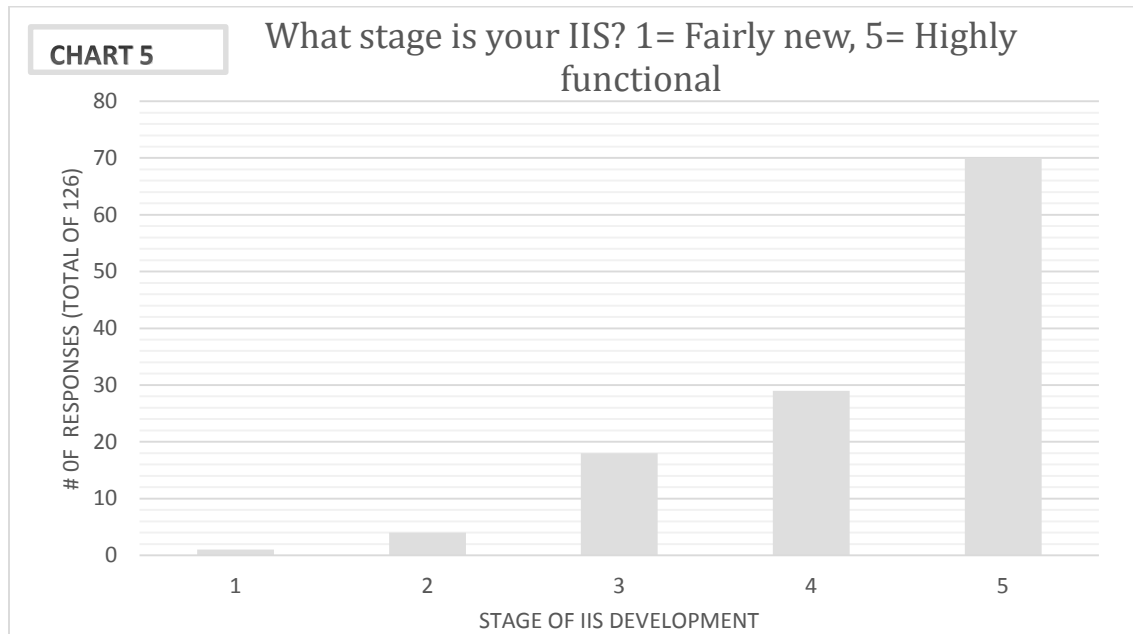
When asked about time spent on IIS activities and years of experience, over 68% of respondents indicated that 76 – 100% of their time was spent on IIS activities, with only 6% stating that less than 25% of their time was spent on IIS related activities *(Chart 3)*.

CHART 3

Average % of time spent on IIS activities?

■ 1%-25%   ■ 26%-50%   ■ 51%-75%   ■ 76%-100%

A remarkable 57% of the respondents have been involved in IIS for more than 6 years *(Chart 4)*. Twenty-two percent had 3-5 years of IIS experience. Only 16% of respondents had 1-2 years of experience, and 5% less than a year. The limitations of the survey prevent investigators from determining whether this is a true representation of the IIS community or a failure of the survey to reach new IIS staff.

CHART 4

How many years have YOU worked
with Immunization Information Systems?

■ <1 year   ■ 1-2 years   ■ 3-5 years   ■ 6-10 years   ■ >10 years

Stage of IIS: The final question asked about the respondents and their environment concerned the maturity of their IIS *(Chart 5)*. Respondents were asked to rank their IIS on a scale of 1-5, with a rating of "1" being Fairly New and "5" Highly Functional. Eighty percent (99 of 126 responses) listed their IIS as Highly Functional or close to Highly Functional (score of 4 or 5).

CHART 5 — What stage is your IIS? 1= Fairly new, 5= Highly functional

IIS Challenges and Successes: Respondents were asked to list three of the biggest challenges they or their IIS colleagues face. No priority was given to the three answers and not everyone gave three answers. Altogether, the survey received a total of 332 answers from 117 respondents:

Challenges related to the area of interoperability, meaningful use, and working with electronic health records were mentioned the most frequently. The next largest group of answers focused on issues related to workload, competing priorities, not enough time in the day to deal with new demands. Data quality challenges were close behind, as was having adequate funding and resources. The breakdown of responses by category is below.

Type of Challenge	# of comments
Interop/MU/EHRs	62
Workload/competing priorities/having enough time	48
Data quality	45
Funding/Resources	37
Miscellaneous technical issues	35
Provider issues	34
Bureaucratic/Political/Admin Barriers	21
Staffing issues (inadequate staffing)	20
Miscellaneous other comments	30
Total # of comments	**332**

Likewise, respondents were asked to list three areas they felt their IIS is very successful with. 113 individuals responded to this question, with 311 answers. The most commonly mentioned success was in the area of Provider Participation/Retention/Use of Registry. Other areas of success that respondents described are listed below.

Successful Areas	# of comments
Provider Participation/use/retention	60
Data quality	33
VFC functionality	33
Data use	29
Interoperability	25
Keeping up with requirements/good staff	23
Integration	16
Forecasting algorithm	12
Miscellaneous	82
Total	**231**

Survey Results: Key Focus Areas

The survey respondents were asked to rank six key focus areas in order of priority for their education/assistance needs. The pre-identified areas were: Data Quality, Data Use, Privacy and Confidentiality, Funding and IIS Management, Provider Relations, and Technical Capacity/Integration.

The three top priorities for respondents, based on the number selecting them as #1 priority are:
- Data Quality (30 votes)
- Technical Capacity/Integration (28 votes)
- Funding & IIS Management (27 votes)

The order of these priorities shifts only slightly when combining #1 and #2 rankings:
- Technical Capacity/Integration (28 + 28 votes = 56)
- Data Quality (30 +24 votes = 54)
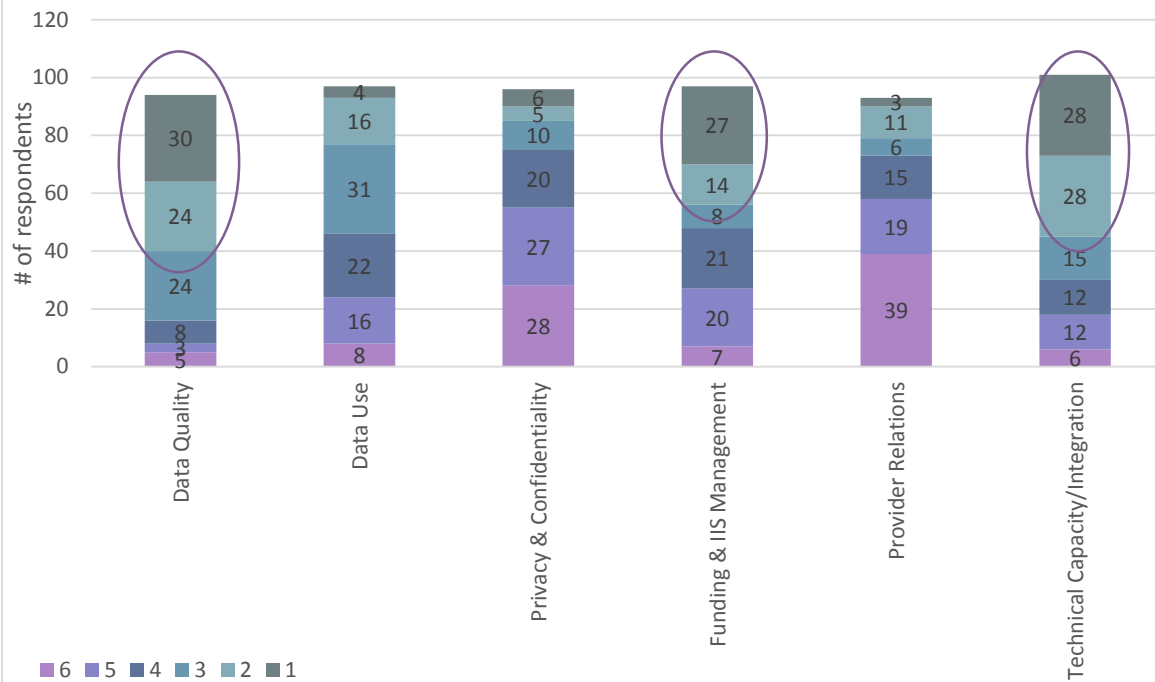- Funding & IIS Management (27+14 votes= 41)

There is a significant gap in votes between the top three focus areas and the bottom three. Data Use, Provider Relations, and Privacy & Confidentiality weighed in at less than six votes each for priority #1. When #1 and #2 priority votes were combined, all three areas remained low with a total of 20, 11, and 14, respectively. If one goes down another notch to include the #3 priority choices, Data Use moves up in priority, slightly beating out Funding & IIS Management (*Chart 6).*

The free text answers to Question #10 - "**Please list other high priority educational needs here"** – further substantiate the interest in both data quality and interoperability. Here are a few examples of comments:

- Standardization around technical documentation and protocols are key

- Meaningful use standards 101

- Understanding SOAP issues, Getting the State to provide funding for the program

- Interoperability know how - working with the clinical sector

- Enforcing state IIS data quality mandates

CHART 6

Six Topics Ranked 1 through 6 by forced selection of priority level, with 1 =highest priority, 6=lowest priority. (Highest number of priority 1 and priority 2 votes are circled.)
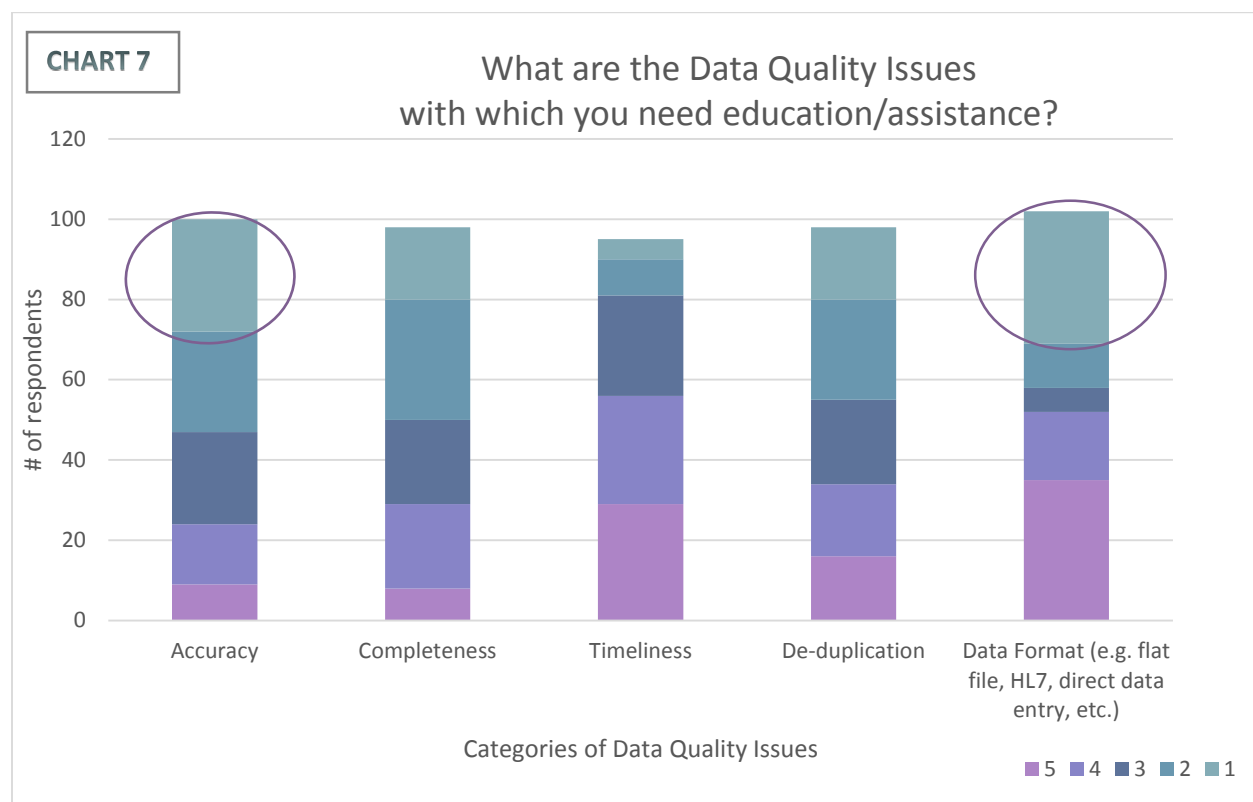
Survey Results: Details on Key Topics

Key Focus Area #1: Data Quality

Within the Data Quality category, **Data Format** was selected as the #1 priority by the most respondents (33), with **Data Accuracy** second highest (28). However, if you combine the #1 and #2 priority votes, **Data Accuracy** moves to the top, followed by **Data Completeness**, with **Data Format** and **Deduplication** right behind. The area of least concern is **Timeliness**. It is noteworthy that in the 2011 Education Survey Data Format was the issue of lowest concern. Most likely, it has moved to the top because of the emphasis on HL7 data exchange and the issues encountered in formatting messages. For this reason, the Education Plan moves Data Format to the area of Interoperability – HL7 messaging under Technical Capacity/Integration.

See Chart 7 below for more complete results:

CHART 7

What are the Data Quality Issues with which you need education/assistance?

The free text answers to Question #11 - "**Please list other high priority data quality needs here.**" Here are a few examples:

- Provider engagement, maintain data quality beyond on-boarding process, and limitations of each EHR vendor and provider workflow combination
- Help with explaining the variability in data gathering, analyzing, reporting, understanding, interpreting, & the overall complexity of the multitude of variables
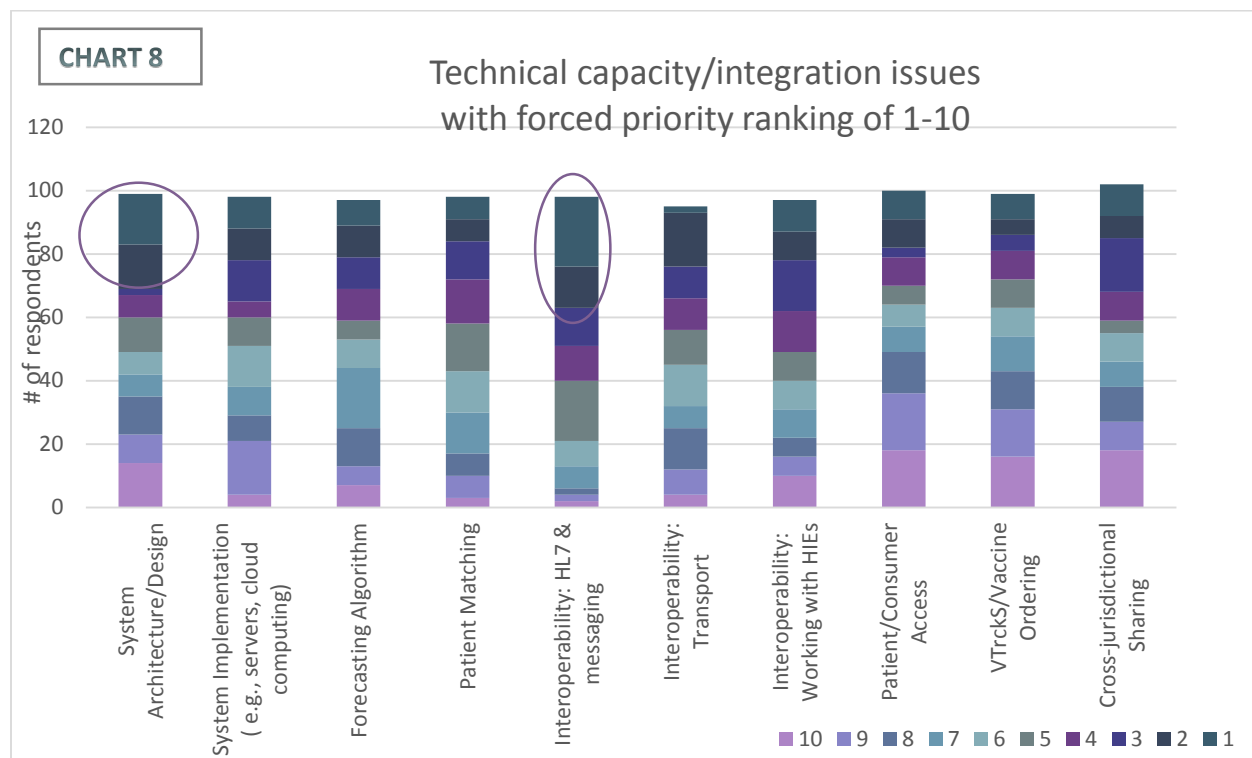
- Unmerging (separating false duplicates)
- Understanding the EHR workflow and how it impacts data quality

Key Focus Area #2: Technical Capacity/Integration

Of the six major categories in the survey, Technical Capacity/Integration was the second highest choice for top priority (28), and moved to the top choice when votes for priority #1 and 2 were combined.

Within the Technical Capacity/Integration category, **Interoperability: HL7 & Messaging** was selected as having "highest importance" at 22, with **System Architecture/Design** second with 16 votes for #1 ranking. These two areas maintain a significant lead over the other issues when rankings as #1 and #2 are combined. However, if you add votes for priority #3, **System Implementation, Interoperability Working with HIEs, and Cross-jurisdictional Sharing** catch up with System Architecture, but HL7 messaging still maintains a distinctive lead.

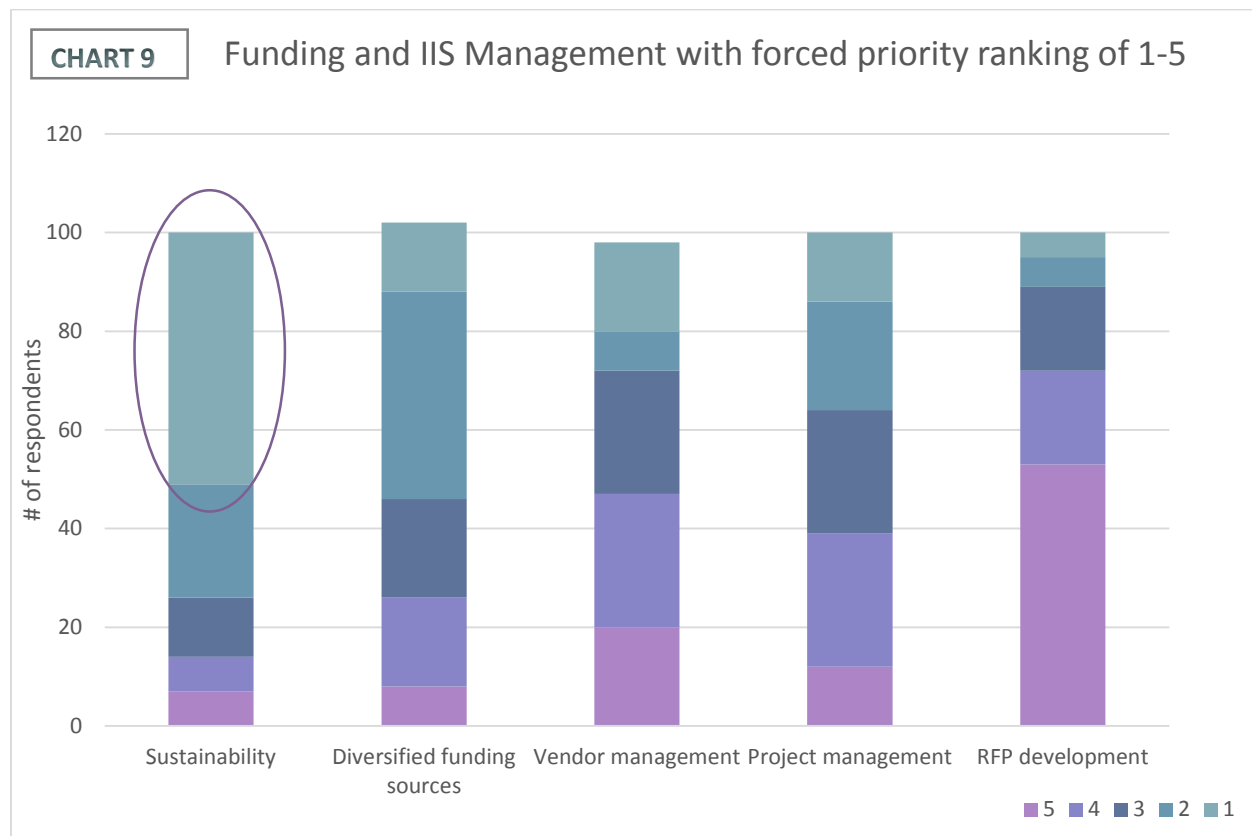See Chart 8 below for more complete results:

CHART 8

Technical capacity/integration issues with forced priority ranking of 1-10

Question #12 produced only a handful of responses to the free text question - "**Please list other high priority technical capacity needs here.**" A few examples include:

- Lack of standards for Vendor hub model data transmission and security
- EHR ability to deduplicate vaccinations
- Our system is based on a system that is old from a technical (code) standpoint. This will pose issues in the years to come.
- Disaster recovery/simulated events

Key Focus Area #3: Funding and IIS Management

Funding and IIS Management ranked third in the top three priorities overall, not too far behind Data Quality and Technical Capacity/Integration.

Within the Funding and IIS Management category, **Sustainability** received three times as many #1 priority votes as any other topic. In looking at the combined counts for priority #1 and #2, Sustainability continues to maintain a substantial lead over the over issues at 74 total votes; however, Diversified Funding Sources also stands out as it significantly outweighs the other three issue areas with a total of 56 combined #1 and #2 priority votes.

CHART 9 — Funding and IIS Management with forced priority ranking of 1-5

The free text answers to Question #13 - **"Please list other important funding/IIS management issues here"** provide helpful details. A few examples include:

- Lack of funding for improvements to existing IIS is limiting development and progress.
- Funding from CDC to support additional positions.
- We struggle to educate administrative and fiscal staff on the concept of ongoing use of a software product (periodically, we are asked to seek bids or information on other IIS platforms, as though it is a simple transition- I'm guessing it stems from a desire find ways to save money); We then have to explain the negative impact that could result, as well as the time, effort & funds that have already been invested in the current platform.
- The problem with responding to RFPs is that if they get the award there is no staff to manage the project.

- How to do more with less (i.e., staff).
- Sustainability and system progression with no funds.

Key Focus Area #4: Data Use

The survey offered no sub-categories for the topic area of data use.

Survey Results: Sources of Information & Additional Ideas

When asked where respondents get most of their information on IIS developments, results were as follows:

Answer Options	Response Count	Response Percent
CDC Website	72	69.9%
AIRA Website	61	59.2%
AIRA National Meetings	56	54.4%
MIROW Guides	50	48.5%
AIRA Member Calls	49	47.6%
AIRA Listserv	47	45.6%
SnapShots Newsletter	33	32.0%
AIRA Committees	30	29.1%
Other National Meetings/conferences	30	29.1%
AIRA ESC Webinars	25	24.3%
Other calls	16	15.5%
Other websites	15	14.6%
Other (please specify)	12	11.7%

When asked if AIRA is one of respondents main resources for IIS related information, 93% (96 respondents) said yes, 7% (7 individuals) said no. Of those answering no, reasons given were:

- Busy and don't take the time to visit the website.
- Usually get information from long term IIS staff.
- Michigan's HL7 specification guide is my resource.
- Website does not have easy access to useful information.
- Because I am new and still not sure how it works with my position.

When asked how AIRA could improve the website, respondents answered with the following suggestions about the website:

- Make it easier to navigate
- More information on how to sustain IIS data growth and gain / keep user interest...
- Continue to offer updates on IIS educational opportunities
- Screen Cam courses. (see pluralsight.com as an example of courses on technical issues)
- Continue to increase the amount of resources available
- I haven't used it very much, but a better index would help
- State / locality Map identifying the current / ongoing initiatives in each jurisdiction is it relates to their IIS technical work, use of technologies, etc.
- Improve search functionality
- Organize information in groups similar to how issues in this survey were presented
- Make it easier to find MIROW
- Share what other states are doing regarding the challenges that IIS are facing
- Appreciate the HL7 type trainings
- Maybe include direct links in emails instead of just describing where to click
- Make it easier to navigate
- Easier access to current content. Archives or links to helpful information
- I generally don't access the website unless I receive an email telling specifically of a resource found on the website.

The following comments provide positive feedback about the AIRA website:
- The website is very useful and contains a lot of good information that we use often. It is a great improvement from what it used to be.
- I think AIRA is doing a great job keeping up with changes as needed. Thanks Everyone!
- Honestly, it functions very well- for example, I searched with the word "transport," & found all types of relevant documents!
- I think your site is fine. Being a very small program, my issue is finding the time to really digest all the information.
- I find the AIRA website very helpful and easy to navigate through.
- It is great.
- I feel that the website is very good and has great resources for information.
- I really like the website! It is fantastic.

When asked for "any other thoughts on how AIRA could better serve your educational needs," the following ideas were submitted:

1) **Conferences:**
   - Hold a yearly conference regarding IIS only.
   - Make the conference a little longer.
   - Have the conference for at least 5 days.

2) **Teleconferences and webinars:**

- More teleconferences. The documents are good, but long and hard to schedule time to read/review. An overview teleconference (like the recent vendor hub model two part series) really helps to focus the attention of IIS vendor and State IIS, start relevant conversations and focus on standards and future directions/needs.
- Love the calls
- Being out in the islands, it is very difficult to participate in calls and other activities due to the time difference. Something tailored towards the islands would be nice.
- Have webinars more often on more topics.
- Work toward continuing education credits.
- Offer more webinars.
- Recorded webinars since I can't always make the live ones. (*Note: AIRA records and posts webinars.)*

3) **Regional workshops**
4) **Discussion board style groups** for ad-hoc interaction / technical discussions among AIRA members.
5) **MIROW:**
- Keep the MIROW guides coming.
- Include more states in creation of MIROW and other documents. It seems like the same members of the IIS community are involved in the development of materials and only reflect the experiences of those states and/or individuals.

6) **Provide tools and templates that IIS could use instead of re-inventing the wheel.**
7) **Offer suggestions on how other states/territories can gain training from each other according to the system they have.**
8) **Topics for training:**
- In the coming years as we transition to a new software and retrain current users, we will need assistance with planning and implementing training plans.
- AIRA should work on a staffing model with CDC for all IIS grantees. Please include salaries and reporting structure.
- Basic information about IIS and HL7
- Education/assistance regarding implementation of reminder-recall initiatives would also be helpful
- Basic concept education for field staff that may not be directly involved with AIRA

9) **Thank you:**
- Keep up the great work and push on day by day
- Keep up the good work!

Education Work Plan: Focus Area Selection

Based on the survey results, the ESC recommends a focus on topic areas related to **Data Quality, Technical Capacity/Integration, Funding/IIS Management,** and **Data Use**. In addition, the Committee was struck by the number of respondents who described challenges related to **workload, competing priorities, and not enough time** to meet the growing demands. This is an area that the ESC wishes to investigate further to determine if it fits within the scope of the Education Plan, or if there are other venues to address these challenges. Finally, the ESC was impressed with the successes described in the areas of **Provider Participation, Data Quality, Data Use, VFC Functionality, and Interoperability**. The Education Plan incorporates building on IIS success stories to assist other IIS that may be struggling in these areas.

Education Work Plan: Methods

Various methods will be used for the delivery of AIRA education, training, capacity building and information sharing, based on preferences indicated in the survey results and on AIRA's past experiences delivering educational information. Methods may include but are not limited to:

- Workshops at national and regional conferences and meetings
- Webinars
- Issue-focused open information conference calls
- Ad hoc meetings at national conferences
- AIRA committee and workgroup activities
- Peer-to-peer mentoring
- On-site training provided by subject matter experts
- AIRA web site, *SnapShots* newsletter, MIROW best practice guidelines and mini guides, toolkits, and other publications

Education Work Plan: Implementation

Activities are planned for the 2014-15 fiscal year as part of AIRA's overall annual work plan development. The extent and reach of programs will be based on available resources. The education plan is flexible enough to reflect new and emerging areas of focus. An annual Calendar of Education and Training Events will be prepared and shared electronically with AIRA members and will be posted on the AIRA web site for easy reference.

The charts below include suggested topics under each key focus area, suggested methods of delivery, and groups responsible. In addition to the committees and workgroups listed under each topic area, the AIRA Board of Directors oversees, approves, and ensures completion of each activity. The AIRA staff support all activities.

KEY FOCUS AREA 1: DATA QUALITY – ACCURACY & COMPLETENESS		
SUGGESTED TOPICS	**SUGGESTED METHODS OF DELIVERY**	**COMMITTEES OR WORKGROUPS RESPONSIBLE**
1. Leveraging Meaningful Use to improve accuracy and completeness of IIS data	• Webinar • IIS National Meeting topic	• ESC • SISC • National Conference Planning Committee
2. Strategies for increasing population and immunization data capture in your IIS	• Webinar on results of data quality assessment pilot • IIS National Meeting session • Document and disseminate information about using data quality assessment tool	• ESC • ASC • National Conference Planning Committee

KEY FOCUS AREA #2A: TECHNICAL CAPACITY/INTEGRATION: INTEROPERABILITY: HL7 MESSAGING & TRANSPORT

SUGGESTED TOPICS	SUGGESTED METHODS OF DELIVERY	COMMITTEES OR WORKGROUPS RESPONSIBLE
1. Strategies for meeting national HL7 messaging & transport standards	• AIRA Post-NIC Workshop • Presentation and discussion at AIRA-HL7 User Group meetings • Presentation and discussion at AIRA Regional Meetings • Participation by AIRA members in ONC/CDC webinars and activities, especially related to MU	▪ ESC ▪ SISC ▪ National Conference Planning Committee
2. Best practices for bidirectional data exchange between IIS and EHRs	• Propose as potential MIROW topic • Convene discussion on development of best practices via webinars, conference calls, Regional meetings and IIS National Meeting •	▪ ESC ▪ MIROW ▪ SISC
3. Data formatting in HL7	• Conduct updated HL7 101 webinar, record, post on website • Include as recurring part of AIRA webinar curriculum	▪ ESC ▪ SISC
4. Implementing the national recommended transport layer standard	• Webinar • Snapshots Articles • IIS National Meeting Session	▪ ESC ▪ SISC

KEY FOCUS AREA #2B: TECHNICAL CAPACITY/INTEGRATION: SYSTEM ARCHITECTURE & DESIGN

SUGGESTED TOPICS	SUGGESTED METHODS OF DELIVERY	COMMITTEES OR WORKGROUPS RESPONSIBLE
1. IIS Joint Development	• Webinar • Articles • National Meeting Session	▪ SISC ▪ ESC ▪ National Meeting
2. System Architecture	• TBD based on additional feedback from IIS staff	▪ ESC

KEY FOCUS AREA #2C: TECHNICAL CAPACITY/INTEGRATION – INTEROPERABILITY-WORKING WITH HIES

SUGGESTED TOPICS	SUGGESTED METHODS OF DELIVERY	COMMITTEES OR WORKGROUPS RESPONSIBLE
1. Working with Health Information Exchanges (HIEs) and other strategies for onboarding providers to your IIS	• Webinar • Snapshots Articles • IIS National Meeting Session	▪ SISC ▪ National Meeting Planning Committee ▪ ESC

KEY FOCUS AREA #3: FUNDING AND IIS MANAGEMENT – SUSTAINABILITY

SUGGESTED TOPICS	SUGGESTED METHODS OF DELIVERY	COMMITTEES OR WORKGROUPS RESPONSIBLE
1. Obtaining Medicaid funding for your IIS: Success Stories	• Webinar on states successfully using Medicaid funding to support IIS	• ESC
2. Striving for IIS Sustainability: Strategies for diversifying your IIS funding base	• Webinar with states that have successfully used alternative funding sources • Mentor program – partner states who want to try a new source of funding with a state that has successfully used that source of funding	• ESC

KEY FOCUS AREA #4: DATA USE

SUGGESTED TOPICS	SUGGESTED METHODS OF DELIVERY	COMMITTEES OR WORKGROUPS RESPONSIBLE
Best Practices for Coverage Assessments	• Develop microguide on Best Practices • Webinar on states/providers successfully using data to improve outcomes	• ASC • ESC

Achieving VFC dose-level accountability in your IIS	• Webinar • IIS National Meeting Session	• ESC • National Conference Planning Committee
Using your IIS for immunization program management	• Webinars to share experience of states' successfully using IIS data to support program functions • IIS National Meeting Session	• ESC • ASC
Consumer Access to IIS	• Webinar outlining various methods currently used to grant consumer access. • Webinar to share ONC consumer access pilot results	• ESC • SISC

Acronyms used above:

- ESC = Education Steering Committee
- SISC - Standards & Interoperability Steering Committee
- ASC – Assessment Steering Committee

2014 AIRA Education Survey
State, City & Territory Responses

NJ, WV, MD, DC

American Samoa

Guam

Commonwealth of the Northern Mariana Islands

Philadelphia

New York City

Houston

San Antonio

No Response

Responded