North Dakota Flex CAH-HIT Network Implementation Grant- HRSA Grant No. H54RH08680

Work Flow Assessment and Planning IT Implementation

Computer Systems and the Rural Hospital

- First introduction to computerized systems was likely in the form of financial management software
  - Billing programs
  - Computerized accounting programs
  - Financial decision support
Growth:

- As institutional processes and tasks were identified that would be improved or enhanced by computerization, programs/databases/applications were added on the basis of “Best of Breed” and as often, “Best for the Money.”

Result:

- Collection of Legacy Databases and Applications
- Stand-alone silos-
  - Different platforms
  - Proprietary architecture
  - Unable to transfer or share data among themselves without a lot of contortions, and even then.....
Dilemma:

- Some units of the hospital may have converted to electronic records
- Some units may still be using paper charts.

Dilemma Continued

- The Billing and Financial Management sections of Clinics and/or Hospitals are likely firmly attached to their financial management software making it extremely difficult to replace.
Computers and Clinical Work...

- Many clinical record systems were outgrowths of financial management applications
- Assumptions were made in development:
  - Healthcare work is logical, step-wise, linear, rationalized, solitary and single minded*
  - Data entry by encoding is more efficient and “complete” than other methods
  - The solution to “efficiency and completeness” is automation.
  Berg and Wear, JAMA:293:1262

The Reality:

- Clinical work is NOT routine- “it is fundamentally interpretive, interruptive, multitasking, collaborative, distributive, opportunistic and reactive.”** All difficult characteristics to program.
- Free text is the most efficient method of documentation in a clinical encounter- “documentation at the speed of thought”**

  * Berg and Wear, JAMA:293:1262
  ** Ash, Berg, et al JAMIA11:107
Yes? So.....?

In implementing an “electronic medical record” in a clinical entity:

- Simply trying to automate the system will not work.
- Considering the clinicians’ and institutions’ workflow is critically important.
- Recognize that some elements of the workflow may need to change to accommodate the proposed system may be necessary.
- Also, some elements of the proposed system may need to be customized to the institution.

Important:

- Implementing an EMR is not solely an exercise in technology management.
- It is more an exercise in people and culture management.
“Lack of attention to how the technological artifact will affect (and be affected by) the organization in which it becomes imbedded lies at the core of many technological failures... the introduction of computerized tools into healthcare should not be viewed as a problem of technology, but rather a problem in organizational change and, particularly, one of guiding organizational change by a process of experimentation and mutual learning, rather than one of planning, command and control.”

That means:

An EMR application cannot just be presented to the clinical and support staff with the instruction, “Use it!”- they won’t (for long, at least).
Where the Hekawi?

Consider:

- What needs to be done?
- How is it done now?
- What has to change to make converting the task to electronic format work in this milieu?
  - The application? OR
  - The Users? OR
  - BOTH
    - People, processes, and technology direct the problem.
    - If you can't identify which of these, if not all is the problem, even evaluation will not help you here.
Goals

How will the new hardware/software make the performance of the task
  - Easier
  - Faster
  - More accurate
  - More thorough?

Some Truths:

- Trying to enhance, not necessarily change work process.
- HOWEVER, if the work process must be changed, the solution must support the change, NOT drive it.
- Software systems should support, not drive the work
For example

- Just because functionality exists does NOT mean you have to use it.
- Present forms and fields that must be completed that are not necessary.
- Requires unnecessary work that curtails productivity and results in unhappy users.
25. I believe the use of electronic health information technologies will positively affect my relationship with patients...

<table>
<thead>
<tr>
<th>Response</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1% (1)</td>
<td>1% (1)</td>
<td>4% (4)</td>
<td>84% (84)</td>
<td>10% (10)</td>
</tr>
</tbody>
</table>

Total Respondents: 82

26. Why do you believe the electronic health information technologies will have this effect on your relationship with patients?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Blank)</td>
<td>82</td>
</tr>
</tbody>
</table>

27. Please rate the following elements in order of importance (1 being most important and 8 being least important):

| Element | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|--------|-------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Total Respondents: 80

28. Please feel free to use this space to comment as to why your top choices are important to you.

<table>
<thead>
<tr>
<th>Answer</th>
<th>Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Blank)</td>
<td>80</td>
</tr>
</tbody>
</table>

29. Need for Information

29. How quickly do you need access to clinical information in order for it to be useful?

<table>
<thead>
<tr>
<th>Response</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1% (1)</td>
<td>1% (1)</td>
<td>4% (4)</td>
<td>84% (84)</td>
<td>10% (10)</td>
<td>0% (0)</td>
</tr>
</tbody>
</table>

Total Respondents: 82

30. What barriers presently exist to your adopting electronic clinical information technology?

<table>
<thead>
<tr>
<th>Response</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1% (1)</td>
<td>1% (1)</td>
<td>4% (4)</td>
<td>84% (84)</td>
<td>10% (10)</td>
<td>0% (0)</td>
</tr>
</tbody>
</table>

Total Respondents: 82

(Blank) question: 8
C. Frederick Lord, M.D.
RHITC
17 State St.
Windsor, VT 05089
802-356-6496
cflord@ruralhealthit.com
cflord@verizon.net