Optimizing Your EHR For Get With the Guidelines – Heart Failure® Data Collection
Reaching over one million patients, Get With The Guidelines®-Heart Failure is an in-hospital quality improvement program for enhancing heart failure care by promoting consistent adherence to the latest scientific treatment guidelines.

Active participation in the program can lead to improved outcomes and lower readmission rates – benefiting patients and hospitals alike.
Why participate in Get With The Guidelines-Heart Failure?

- Heart Failure is the leading cause of 30-day readmissions. Readmissions penalties are a serious financial burden for hospitals. Active participation in Get With The Guidelines-Heart Failure can help your hospital understand strengths and areas to improve, which could lead to reduced 30-day readmissions.

- Get With The Guidelines-Heart Failure can help your hospital with tools to track and benchmark critical aspects of care. Published studies indicate that participating in our program can improve processes of care.

- Hospitals that participate actively in Get With The Guidelines-Heart Failure may be eligible for public recognition by the American Heart Association. It’s an opportunity to hone a competitive edge in the marketplace by providing tangible evidence of commitment to quality care.
Find out how GWTG HF can help your hospital.

Visit our website:

Get With The Guidelines®-Heart Failure

And contact your local representative today.
Optimizing Your EHR For Get With the Guidelines – Heart Failure® Data Collection
Kirsten Brauch
Epic Implementation Services

Michael Sherwood
Senior Informatics Analyst
SSM Health – St. Louis Network
GWTG and Epic

Optimizing Your EHR for GWTG-Heart Failure Data Collection
Options for submitting
- Manual abstraction
- Interface with a third party
- Clarity extracts

If you’re new to the program and are looking for ways to submit, you can leverage existing content to get started.

If you’re happy with your system and you want to do more, we have resources available to help you.
Create build trackers
- Include each data element you’re planning to abstract
- Determine the workflow your end users are currently using to capture each data element

Use your build trackers to create reports for each dataset
- Determine how you will track your patients for each measure for concurrent and retrospective review
- Use Foundation content as a starting place

If your goal is to cut down on manual abstraction, use your build tracker as a guide to map your data elements and complete your integration.
On the Horizon

• Epic is continuously working to improve options for submitting to GWTG out of our Foundation System.
• You can use Foundation System content as a starting place for any build related to the GWTG measure sets.
• The build and workflows we recommend for GWTG abstraction line up with the tools you’re likely already using for other quality programs.
Next Steps

• If you want to do more with Epic and GWTG, talk to your Technical Coordinator, Implementation Director, or BFF

• For more information, reach out to Kirsten Brauch at kbrauch@epic.com
Michael Sherwood
Senior Informatics Analyst
SSM Health – St. Louis Network
Optimizing Your EHR for GWTG-Heart Failure Data Collection

September 12, 2018
SSM Health Team Members

Michael Sherwood (Technical Lead)
Senior Informatics Analyst
SSM Health – St. Louis Network
Michael.Sherwood@ssmhealth.com

Suzi Guignon, MSN, RN
Team Leader – Clinical Registries
SSM Health – St. Louis Network
Mary.Guignon@ssmhealth.com

Tim Lyerla
Senior Informatics Analyst
SSM Health – St. Louis Network
Tim.Lyerla@ssmhealth.com

Carol Papps, RN (HF Registry Lead)
Clinical Data Coordinator
SSM Health – St. Louis Network
Carol.Papps@ssmhealth.com

Shelli Smith-Valenti
Manager – Informatics
SSM Health – St. Louis Network
Shelli.Smith-Valenti@ssmhealth.com

Leah Meyer, MBA, BSN, RN
System Manager – Clinical Quality Compliance
SSM Health Corporate
Leah.B.Meyer@ssmhealth.com
Presentation Objectives

➢ To share the SSM Health team process of reducing manual data abstraction for the AHA Heart Failure (HF) registry, while increasing the volume of uploaded data.

➢ To describe the process SSM Health used for mapping data elements into a CSV file using discrete fields located within the electronic medical record (Epic) and IQVIA/Quintiles automated CSV uploader.

➢ To explain the SSM Health data extraction process for the AHA HF registry through an automated upload of patient data from Epic Clarity into the patient management tool.
SSM Health – System Overview

A $7 Billion* not-for-profit, Catholic healthcare system

- Over $500 Million in Community Benefit
- 40,000+ Employees
- 9,900+ Physicians/Providers
- 300+ Physician Office/Outpatient Sites
- 24 Hospitals
- 10 Post-Acute Facilities
- 83 Counties – SSM Health at Home
- 5.4 Million Covered Lives – Navitus
- 410,000 Covered Lives – Dean Health Plan
- 40+ Managed Hospitals/Affiliate Relationships

* Reflects total revenue; includes Agnesian HealthCare and Monroe Clinic
SSM Health Participating Hospitals
AHA Heart Failure Registry

• SSM Health St. Joseph Hospital: St. Charles, Missouri
• SSM Health St. Joseph Hospital: Lake St. Louis, Missouri
• SSM Health St. Mary’s Hospital: St. Louis, Missouri
• SSM Health St. Clare Hospital: Fenton, Missouri
• SSM Health DePaul Hospital: St. Louis, Missouri
• SSM Health Saint Louis University Hospital: St. Louis, Missouri
• SSM Health St. Clare Hospital: Baraboo, Wisconsin*

*Optimization process not yet implemented
Team Development: Roles & Responsibilities

❖ Establishment of a multidisciplinary team that meets routinely is essential to the success of the program.
❖ Key team members include:

➢ **Quality Abstractors/Clinical Data Coordinators**
  • Provide data definitions
  • Assist the informatics analysts with identifying discrete fields in Epic
  • Manually validate the data pull
  • Continuously review automated upload for quality data integrity

➢ **Informatics Analysts**
  • Develop the program using database extraction (Clarity) and front-end validation in Epic Hyperspace
  • Collaborate with the abstractors and support technicians

➢ **IQVIA/Quintiles Support Technicians**
  • Provide CSV specifications
  • Work with the Informatics Analysts
### SSM Process Roadmap

<table>
<thead>
<tr>
<th>Phase</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpret</td>
<td>Interpretation of clinical specifications</td>
</tr>
<tr>
<td>Identify</td>
<td>Identification of the data components found in Epic</td>
</tr>
<tr>
<td>Collaborate</td>
<td>Collaboration on the best approaches for each data element extraction (manual vs. automated)</td>
</tr>
<tr>
<td>Build</td>
<td>Build the extraction program</td>
</tr>
<tr>
<td>Align</td>
<td>Alignment of technical build and mapping specifications</td>
</tr>
<tr>
<td>Validate</td>
<td>Validation of extracted data fields</td>
</tr>
<tr>
<td>Review</td>
<td>Extensive review of the final uploaded file</td>
</tr>
</tbody>
</table>
Process Overview: Interpret, Identify & Collaborate

- **Interpretation of clinical specifications**
  - IQVIA/Quintiles provided coding instructions that had specific qualifications and criteria for each data element.
  - Quality Abstractors clarified and interpreted the instructions to align with SSM Health processes and documentation.

- **Identification of the data components found in Epic**
  - The team held several webinar screen-sharing sessions to walk through complete manual abstractions of all data elements.

- **Collaboration on the best approaches for each data element extraction (manual vs. automated)**
  - During and following those sessions, the team determined the best approaches for the extraction of each data element (continued manual abstraction vs. newly automated extraction).
➢ **Documentation:** The team utilized an Excel file (example on the following slide) to track the:
  • Required data elements
  • Data locations within Epic Hyperspace and corresponding locations in Clarity (where possible)
  • Expanded definitions, assumptions, and key decision points for each element

➢ The creation of the exhaustive element list and tracking document in Excel took approximately 10% of the total project time.
# SSM Tracking Documentation Sample

<table>
<thead>
<tr>
<th>VARIABLE DESCRIPTION</th>
<th>VARIABLE NAME</th>
<th>Status</th>
<th>Notes</th>
<th>Final Notes for Data Pull/Abstraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure: diastolic</td>
<td>aha_diastolic</td>
<td>Completed</td>
<td>OK to assume supine from VS flowsheet</td>
<td></td>
</tr>
<tr>
<td>Sodium Value</td>
<td>oh_sodium</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium units</td>
<td>oh_sodium_ u</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum Creatinine</td>
<td>oh_scr</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum Creatinine Units</td>
<td>oh_scr_ u</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCr Not Drawn</td>
<td>oh_scr_na</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EKG QRS Duration (ms)</td>
<td>aha_ekg</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EKG Not Available</td>
<td>hfs_ekg_na</td>
<td>Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EKG QRS Morphology</td>
<td>aha_ekg_mor</td>
<td>Completed - partial</td>
<td>Extract uses a set of smart elements that are not always populated. This will be pulled in where possible.</td>
<td>Supplemental manual abstraction needed</td>
</tr>
<tr>
<td>Ejection Fraction Percentage</td>
<td>oh_ef</td>
<td>Not Extractable</td>
<td>no discreet field in EPIC (smart element possible as future enhancement)</td>
<td>Complete manual abstraction needed</td>
</tr>
<tr>
<td>Ejection Fraction Not Available</td>
<td>oh_ef_na</td>
<td>Not Extractable</td>
<td>no discreet field in EPIC (smart element possible as future enhancement)</td>
<td>Complete manual abstraction needed</td>
</tr>
<tr>
<td>Documented LVSD</td>
<td>jc_lvsd</td>
<td>Not Extractable</td>
<td>no discreet field in EPIC (smart element possible as future enhancement)</td>
<td>Complete manual abstraction needed</td>
</tr>
<tr>
<td>LVF</td>
<td>jc_lvf</td>
<td>Completed - partial</td>
<td>Extract uses a set of smart elements that are not always populated. This will be pulled in where possible.</td>
<td>Supplemental manual abstraction needed</td>
</tr>
<tr>
<td>Oral Medications during hospitalization</td>
<td>hfs_oralmeds</td>
<td>Completed</td>
<td></td>
<td>Quality-checking needed</td>
</tr>
<tr>
<td>Pt ambulation at end of hospital day 2</td>
<td>aha_ptambulatedday2</td>
<td>Completed</td>
<td>Default to No</td>
<td>Confirmation of default value needed</td>
</tr>
</tbody>
</table>
Process Overview: Build

- Build the extraction program

- The technical build (SQL), alignment with expectations, and validation of the output all occurred continuously throughout the development of the process.
- When one section or group of elements was thought to be complete, the output was shared with the Quality Abstractor.
Process Overview: Align & Validate

- **Alignment of technical build and mapping specifications**
- **Validation of extracted data fields**

Two methods of validation were used:
1. Manual abstraction was performed for the target elements first, then the SQL output for the same elements was shared.
2. The SQL output for target elements was shared, then the abstractor reviewed the output to determine if the data was appropriate.

- We chose to build and validate simultaneously. Other teams might prefer to receive all specifications up front and only move to validation after the build is complete.
- Validation accounted for approximately 25% of the project time.
Technical Build: SQL – Data Mapping I

The SQL begins by creating temporary tables to hold all possible and relevant values from Clarity and their corresponding codes in the CSV specifications (SQL table definition on the following slide).

➢ We chose to include the text descriptions for each code. This took extra development time which was not necessary for producing the CSV, but it made debugging much easier.

➢ The temporary tables containing the mappings accounted for approximately 25% of the project time.
Technical Build: SQL – Data Mapping II

Primary data mapping table definition

```sql
CREATE TABLE #FCATTBL

| [HF_CAT_TBL_ID] INT not NULL,     -- Table ID
| [SSM_CL] VARCHAR(50) not NULL,   -- Value pulled from SSM's Clarity tables.
| [VENDOR_CL] VARCHAR(50) not NULL, -- Value to be sent to the Vendor
| [ITEMDESC] VARCHAR(250),         -- Description of this item, used for patient lists
| [VENDORCLAIMDESC] VARCHAR(250)   -- Description of this item on the HF Patient Management Tool

PRIMARY KEY ([HF_CAT_TBL_ID],[SSM_CL],[VENDOR_CL])

INSERT INTO #FCATTBL ([HF_CAT_TBL_ID],[SSM_CL],[VENDOR_CL],[ITEMDESC],[VENDORCLAIMDESC]) VALUES

<table>
<thead>
<tr>
<th>TABLE CATEGORY TDS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heart Failure Diagnosis Codes (ICD-9 and ICD-10)</td>
</tr>
<tr>
<td>2. Heart Failure Diagnosis Codes (ICD-9 ONLY)</td>
</tr>
<tr>
<td>3. Heart Failure Diagnosis Codes (ICD-10 ONLY)</td>
</tr>
<tr>
<td>4. Patient Discharge Dispositions</td>
</tr>
<tr>
<td>5. Other Facilities under Patient Discharge Dispositions</td>
</tr>
<tr>
<td>6. Admission source</td>
</tr>
<tr>
<td>7. Ethnic group</td>
</tr>
<tr>
<td>8. Race</td>
</tr>
<tr>
<td>9. Payment source</td>
</tr>
<tr>
<td>10. Medical History (ICD-9 ONLY)</td>
</tr>
<tr>
<td>11. Medical History (ICD-9 ONLY)</td>
</tr>
<tr>
<td>12. COD Diagnoses (ICD-9 ONLY)</td>
</tr>
<tr>
<td>13. COD Diagnoses (ICD-10 ONLY)</td>
</tr>
<tr>
<td>14. Medical History Procedure Codes - excluding cardiac assist device removal and revision/replacement procedures (ICD-9 ONLY) --chg069</td>
</tr>
<tr>
<td>15. Medical History Procedure Codes - excluding cardiac assist device removal and revision/replacement procedures (ICD-10 ONLY) --chg069</td>
</tr>
<tr>
<td>16. DVT and Pulmonary Embolism Diagnoses Codes (ICD-9 ONLY)</td>
</tr>
<tr>
<td>17. DVT and Pulmonary Embolism Diagnoses Codes (ICD-10 ONLY)</td>
</tr>
<tr>
<td>18. Surgical History PROC CODES (CLARITY CUP)</td>
</tr>
<tr>
<td>19. Cardiac Assist Device Removal, Replacement Procedure Codes (ICD-9 ONLY) --chg005</td>
</tr>
<tr>
<td>20. Cardiac Assist Device Removal, Replacement Codes (ICD-10 ONLY) --chg005</td>
</tr>
<tr>
<td>21. Sleep-Disordered Breathing Types (ICD-9 ONLY) --chg012</td>
</tr>
<tr>
<td>22. Sleep-Disordered Breathing Types (ICD-10 ONLY) --chg012</td>
</tr>
<tr>
<td>23. Age</td>
</tr>
</tbody>
</table>
```
### Technical Build: SQL – Data Mapping III

#### Example: Discharge Disposition & Other Facilities

```sql
<table>
<thead>
<tr>
<th>Code</th>
<th>Facility Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>&quot;Home or Self Care&quot;, &quot;1 - Home&quot;</td>
</tr>
<tr>
<td>01</td>
<td>&quot;Home or Self Care&quot;, &quot;1 - Home&quot;</td>
</tr>
<tr>
<td>06</td>
<td>&quot;Home Health Care Svc&quot;, &quot;1 - Home&quot;</td>
</tr>
<tr>
<td>90</td>
<td>&quot;Hospice: Home&quot;, &quot;2 - Hospice - Home&quot;</td>
</tr>
<tr>
<td>90</td>
<td>&quot;Hospice/Medical Facility&quot;, &quot;3 - Hospice - Health Care Facility&quot;</td>
</tr>
<tr>
<td>02</td>
<td>&quot;Inpatient Hospital&quot;, &quot;4 - Acute Care Facility&quot;</td>
</tr>
<tr>
<td>05</td>
<td>&quot;Cancer Center or Childrens Hospital&quot;, &quot;4 - Acute Care Facility&quot;</td>
</tr>
<tr>
<td>43</td>
<td>&quot;Hospital, Federal/VA&quot;, &quot;4 - Acute Care Facility&quot;</td>
</tr>
<tr>
<td>03</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>03</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>04</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>21</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>22</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>61</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>62</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>63</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>64</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>65</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>66</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
<tr>
<td>70</td>
<td>&quot;Other Facility&quot;, &quot;5 - Other Health Care Facility&quot;</td>
</tr>
</tbody>
</table>
```

- "Expired", "6 - Expired"
- "Left Against Medical Advice", "7 - Left Against Medical Advice (LAMA)"
- "Not documented or UTD", "8 - Not Documented or Unable to Determine (UTD)"

#### Other Facilities

- "Skilled Nursing Facility", "A - Skilled Nursing Facility (SNF)"
- "Rehabilitation", "B - Inpatient Rehabilitation Facility (IRF)"
- "Long Term Acute Care", "C - Long Term Care Hospital (LTC)"
- "Court/Law Enforcement", "5 - Other"
- "Swing Bed", "5 - Other"
- "Nursing Facility/Medicaid", "5 - Other"
- "Psychiatric Hospital or Unit", "5 - Other"
- "Critical Access Hospital", "5 - Other"
- "Other Facility Not Defined Elsewhere", "5 - Other"
Technical Build: Main SQL

After the mapping table is created, the SQL continues on to:

1) **Input** the appropriate date & location filters from the automation process
2) **Define** the population
3) **Gather** attributes about the population
4) **Evaluate** new attributes continuously for conditions that impact branching logic
   • For example: if we found in the medical history that the patient had a CRT-D placed prior to hospitalization, we don’t need to go through the logic to identify the reasons ICD therapy was not placed or prescribed at discharge.

- The amount of time required for processing each data element was highly variable and dependent on design choices made before and while writing the SQL. The mapping table was revisited and revised several times as the project progressed.

- Development of the main SQL took approximately 25% of the project time.
Technical Build: SQL – Data Mapping IV

Once all of the elements are gathered, the SQL finishes by applying the data mapping tables to convert the output from an SSM Health Clarity report to the IQVIA/Quintiles-defined CSV (example on following slide).

- Extensive review of the final uploaded file

At this point, changes to the output were made based on the feedback received by the CSV uploader & IQVIA/Quintiles technical support.

- We found that there were fewer late-stage changes to the output than expected. We attribute this to the creation and utilization of the data element tracking document as well as including the text descriptions in the mapping tables.

- Additional work and re-work needed to correctly format the output to the CSV specifications accounted for approximately 5% of the project time.
Technical Build: SQL – Data Mapping V

Example output of the SQL
Process Overview: Automation

Automation options will vary based on the resources available at your specific organization and how you store and retrieve your data.

➢ We chose a business process automation approach where the following steps are performed in a single script:

1. Identify the reporting period for the upload file
2. Create appropriate date-based folders on a network drive
3. Execute the SQL
4. Determine the sample size for each location based on number of records returned
5. Randomly select the sample from the full dataset for each location
6. Write out a CSV for each participating location to the folders created in step 2

➢ Development of the automation script accounted for approximately 10% of the project time.
• There are **69 data points** for abstraction in the limited version of the PMT AHA HF registry.

• Post-project, we now manually abstract only **13 data points** which are found mostly in narrative charting.

• A full manual abstract previously took **35 minutes per chart**.

• Post-project, an abstractor now spends about **10 minutes per chart** using the data pull automation method.

• As a result, one 0.5 FTE abstractor is now able to support HF registry abstraction for 6 adult hospitals.
Key Takeaways: Vital for Optimization Success

✓ Multidisciplinary team approach
✓ Development of a roadmap process
✓ Frequent collaboration and communication among team members
✓ Ongoing data validation
✓ Experienced clinical chart abstractor
✓ Technical expertise
✓ Time commitment
Questions?

Please submit any post-presentation questions to:

Michael Sherwood (Technical Lead)
Senior Informatics Analyst
SSM Health – St. Louis Network
Michael.Sherwood@ssmhealth.com

Carol Papps, RN (HF Registry Lead)
Clinical Data Coordinator
SSM Health - St. Louis Network
Carol.Papps@ssmhealth.com
Contact Us to Learn More

Tanya Lane Truitt, RN MS
Senior Manager QSI Programs & Operations: Resuscitation & HF
Get With The Guidelines®
tanya.truitt@heart.org

Liz Olson, CVA
Program Manager, Get With The Guidelines – Resuscitation & HF
lizolson@heart.org

Stay informed on the latest updates from all of the Get With The Guidelines programs.

Sign Up for Focus on Quality e-Communications
Thank you for your active participation and contributions to GWTG-Heart Failure!