

Process Design Document / Solution Design Document

Process Name: IAH - NURSING - WEIGHT CHART AUDITS

Purpose of Document

This document serves as the technology policies and procedure for Intelligent Automation Hub at Geisinger

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1. Document Control

Applies to:	All IAH RPA Operating Model
Classification:	Highly Confidential
Owner:	Intelligent Automation Hub Team

DOCUMENT HISTORY

Version	Date	Author	Approver	Reasons for Change
1.0	2/9/2023	Phebe Strzempek	Tim Bracken	Initial Draft

REVIEW/APPROVAL

Role	Name	Date
SME		2/15/2023
Process Owner		2/15/2023
Business Architect		2/15/2023
Developer		2/15/2023
IAH Director		2/15/2023

STAKEHOLDERS

Role	Name	Email
Process Owner		
SME		

Business Architect		
IAH Director		
Developer		

2. Document Details

2.1 PURPOSE OF THIS DOCUMENT

The Process Definition Document outlines the business process chosen for automation and the technology being utilized.

The document describes the sequence of actions performed as part of the business process, the conditions and rules of the process prior to automation and how they are envisioned to work after automating it, partly or entirely. This specifications document serves as a base for developers, providing them with the details required for applying automation to the selected business process.

3. Current State Process Description

3.1 PROCESS SUMMARY

This automation will complete chart audits for all patients that are on weight orders, and upload the audit form to the SP.

3.2 DATA FLOW & APPLICATIONS

3.2.1 INPUT

Input	Format	Location	Is it natively digital?	Is it structured?
Epic Reporting Workbench report	.XLSX	Epic	Yes	Yes

3.2.2 OUTPUT

Output	Format	Location	Frequency	Comment
Chart Audit Forms	Excel	Network Drive	Created each run	Chart Audit forms of patients
Outlook Email	Email	Desktop Application	Created each run	Email containing failed patients or runs

3.2.3 APPLICATIONS

Application	Version	Interface	Req Key / Operation / URL	Comment
Outlook	2016	Desktop Application	N/A	
Excel	2016	Desktop Application	N/A	
SP		Sharepoint Folder	Nursing SP Site	
EPIC			IAHAUDITS, IAHAUDITS2	
Network Folders			Weights_ Chart Audits_Test Weights_ Chart Audits_Prod	

3.3 BUSINESS RULES

Rule	Detail
Automation frequency	Daily
Bot start time	12pm daily
Excluding weekends and holidays	No
SLAs	5pm daily

3.4 CURRENT STATE METRICS

Avg. Daily Transactions	# Batches Daily	Avg. Volume / Batch	Weekly Avg. Volume	Frequency
700 daily patients	1 batch	700 patients	700 X 7 days a week	Daily

3.5 CURRENT STATE PROCESS FLOW

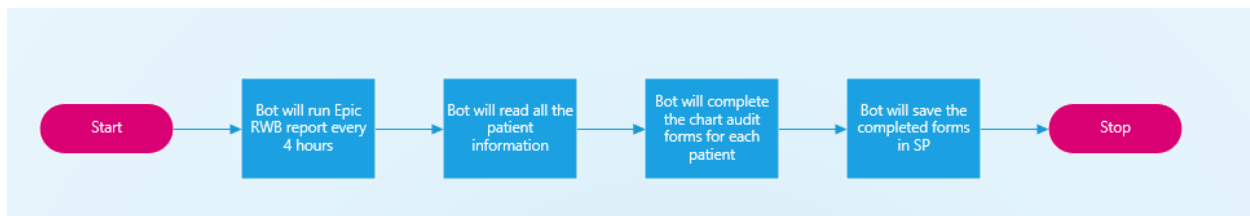
High Level Process Flow Diagram (Current state):

1. Providers sign weights order
2. Nurses document in flowsheets
3. Nurses complete chart audit forms
4. Audit forms are saved for each patient

4. Future State Process Description

4.1 FUTURE STATE PROCESS FLOW

Bot Automation Process & Workflow Diagram (Future State):



1. Bot will run Epic RWB reports every day and export the information
2. Bot will read all the patient information
3. Bot will complete chart audits forms for each patient
4. Bot will upload the completed audit forms on SP

4.2 IN SCOPE FOR RPA

100% of current state process is in scope for RPA.

4.3 OUT OF SCOPE FOR RPA

The actions out of scope for RPA should be listed in the table below together with the reasoning.

Activity/Action	Reason for out of scope	Future State solution	Measures to be taken for future automation
N/A	N/A	N/A	N/A

4.4 FUTURE STATE DETAILED STEPS

Step	Short description of key process steps	Screenshot for reference
1.	Bot will enter the user name	
2.	Bot will click in the password field	
3.	Bot will type the password	
4.	Bot will click on Log In	
5.	Bot will click inside 'Select	

	your login department'	
6.	Bot will type 'BOT'	
7.	Bot will press 'Enter'	
8.	Bot will click on 900046 department	
9.	Bot will click Accept	
10.	Bot will click OK	
11.	Bot will click on the magnifying glass	
12.	Bot will type 'my reports'	
13.	Bot will click on My Reports	
14.	Bot will click on Library	
15.	Bot will click on 'the library'	

16.	Bot will type 'weights'	
17.	Bot will click on Search	
18.	Bot will click on the start next to 'WEIGHTS' reports to add them to their reports for the first run only (Weights - Bot 24 hour look back) (Weights - Bot 7 day look back)	
19.	Bot will click on My Reports	
20.	Bot will click on 'WEIGHTS BOT (24 hour look back)'	
21.	Bot will wait while the report is running	
22.	Bot will look at the total	

	number of patients in the report to confirm all records are completed. If output count does not match the count here = Bot will re-review the list and find the missing transaction to process	
23.	Bot will open the chart audit form for the first patient and enter T (today's) date for date completed	
24.	Bot will obtain the patient's name and MRN	
25.	Bot will enter the information next to Name and MRN field	

26.	Bot will obtain patient's department and current facility	
27.	Bot will enter the information next to Current location and department (it will get updated each run)	
28.	Bot will obtain the Admin Date/Time	
29.	Bot will enter the information next to admission date and time	
30.	Bot will obtain the 'Disch Date/Time'	
31.	Bot will enter the information (if any) next to the discharge	

	date and time field	
32.	Bot will click on Weights Order Data tab	
33.	Bot will obtain each one of the: Ordered at: MM/DD/YYYY HH:MM AM/PM Frequency: List of options Cancelled (Cancelled at): MM/DD/YYYY HH:MM AM/PM (if blank, order is still active and not cancelled)	
34.	Screenshot of a patient with one order only	
35.	Bot will enter the Order Started, Cancelled/Completed, and Interval of the	

	last 3 order for the patient, newest on top (list will be updated each run) Most current active order cell will be highlighted 'orange'	
36.	Bot will also enter the start and cancel/completed date and time, and frequency in the highlighted column for each order (newest one always on the left) (the latest active order will also be highlighted 'orange')	
37.	Bot will click on 'Weights Flowsheet Data'	

38.	Bot will obtain patients very last Height and BMI, and Date/Time	
39.	Bot will add the value date and time in the first column for height, and then BMI, and add the value in the next column for each	
40.	Bot will click on ADT Events	
41.	Bot will collect the date and time, Unit and Room for every admission and transfer in event	
42.	Bot will add the Unit and Room of the location and the ADT Event time/date in	

	the highlighted columns Add interval as well	
43.	Bot will click on Weights Flowsheet Data	
44.	Bot will obtain every weight value (in KG and LB OZ) and Date/Time	
45.	Bot will enter the weight measured date (MM/DD/YYYY Day), Weight measured time (HH:MM AM/PM), Weight value (LBS and KG), and percentage change since last weight Percentage change = $((\text{previous weight} - \text{latest weight}) / \text{previous weight}) * 100$	

46.	Bot will type missing and highlight the cell if the weight value is missing at the expected frequency	
47.	Bot will make the font red if the weight change is more than => -+10%	
48.	Possible weight frequency names and descriptions	PRN = pull data only if there is weight value, and do not put missing values if no weights.
49.	Bot will use the logic:	Bot will insert column and add Missing value for the flowsheets if there is no weight value for the recommended frequency If there are more than one orders at any given time, more frequent interval logic will be used, as long as more frequent also covers the less frequent interval.
50.	Bot will collect the scale column information	

	and date/time information for each value	
51.	Bot will insert the scale flowsheet information (value of the flowsheet) if there is weight value for the same hour block	
52.	Bot will obtain the date/time and the flowsheet values for 'Reason for Communication'	
53.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value Bot will type MISSING and Highlight if the reason for communication	

	n flowsheet value is missing and the weight change is more than = > - + 10%	
54.	Bot will obtain the date/time and the provider name flowsheet values	
55.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value Bot will type MISSING and Highlight if the reason for communication flowsheet value is missing and the weight change is more	

	than = > - + 10%	
56.	Bot will obtain the date/time and provider role flowsheet value	
57.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value	
58.	Bot will obtain the date/time and method of communication flowsheet value	
59.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value	

60.	Bot will obtain the date/time and response column flowsheet value	
61.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value	
62.	Bot will obtain the date/time and the value of the flowsheet 'Notification Time'	
63.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value	

64.	Bot will obtain the date/time and shift even flowsheet value	
65.	Bot will insert the value of the flowsheet if the weight change is => - +10% and there is a weight value	
66.	Bot will record the date/time and who column flowsheet value	
67.	All flowsheet user names will be entered here anytime a weight value and flowsheet	

	values are entered.	
68.	Bot will save the audit forms	Weights_Audits_Campus_Unit_MRN_AdmissionDate Weights_Audits_GMC_GP3 IP_MRN_MMDDYYYY MRN = MRN column Folder Name = under Department (example: D4 Trauma/Neuro IP GCMC) AdmissionDate = Admit Date
69.	Bot will click on the SP link	https://geisinger.sharepoint.com/sites/NursingAutomationAudits?e=1%3A9153a7b13f324dad9622a2fdec0db308
70.	Bot will pick the appropriate folder	
71.	Bot will pick the hospital If Central: GMC, GSACH, GBH	
72.	Bot will pick the hospital If North Central: GJSH, GMCM	

73.	Bot will pick the hospital If North Eastern: GWV, GCMC, GSWB	
74.	Bot will pick the hospital If Western: GLH	
75.	Each one of the main folders will have subfolders BOT weights audits > Year > Month > upload the files.	

4.5 EXCEPTIONS IN THE PROCESS FLOW

Exception	Actions	Comment
Order signed date and time in the future (one email after each run)	Bot will email users and alert them Title: IAH Weights Audits Run MM DD YYYY HH MM Body: Bot found patients with future order date/time during MM DD YYYY HH MM run: List of:	Create email alerts Include: Patient Name, MRN, Department,

	Weights_Audits_FolderName_MRN_AdmissionDate_(YYYY_MM_DD)	
Bot couldnt complete the chart audit form (one email after each run)	Bot will upload a blank or incomplete chart audit form to the appropriate SP site and name the document if Bot is not able to complete the chart audit form twice in a row Title: IAH Weights Audits Run MM DD YYYY HH MM Body: IAH Weights Bot could not complete below patients during MM DD YYYY HH MM run: List of: Weights Audits _Audits_FolderName_MRN_AdmissionDate_(YYYY_MM_DD) Bot will continue to process these patients once it is able to process	Create email alerts Include: Patient Name, MRN, Department, when BOT failed

4.6 SYSTEM ERRORS

Error	Action	Comment
Application crash	Recover and retry 3 times	
Epic Downtime	Pause bot if during run time	
Epic Upgrade	Review with business and determine what/if any action is necessary	
Application is Down (Epic)	Alert busines that BOT didnt run at run time (High Alert) Bot will start processing the patients once application is back up.	

If Bot fails more than 24 hours, less than 7 days	IAH will be in touch with business to work with business for future steps	
If Bot fails > 7 days	Alert business that Bot didnt run daily for 5 days, indicating how many days Bot didnt run , IAH will be in touch with business to work for future steps	

4.7 PROCESS CONTINUITY

Prevention: Establishing and defining what redundancies and protocols are in place to prevent failures in the process and maintain business continuity Detection: Defining what protocols are in place for monitoring the process to detect bugs and stop incorrect actions at all points post go-live and escalated monitoring during massive systems changes Recovery Assessing the level of risk, define strategic stakeholders to be alerted in need of a recovery and outlining the recovery plan to get back to operational state.			
Scenario	Prevention	Detection	Recovery
Expected number of input files not provided or missing.	Business reviews and confirms number of anticipated files are loaded/prepared by agreed upon date.	Bot scans/inspects for anticipated files/number of files.	- Bot sends notification email to those who are on the distribution list and IAH Prod support team. - Business to resolve the issue and notify IAH regarding next steps. - IAH team to reschedule bot run based on bot's availability.

Input file format change or input file is blank (no data).	Business to notify IAH regarding upcoming changes. IAH and Business work together to prepare and follow change management process.	Bot finds out the unexpected file format and fails to complete the process.	• Bot sends notification email to those who are on the distribution list and IAH Prod support team. • Business and IAH work together prepare and follows change management process.
Bot not completing as outlined in PDD.	N/A: What was not known was not preventable.	Hypercare Phase: Daily auditing is performed and process logs are monitored.	• IAH team adjusts bot design to improve business exceptions.
Higher than expected system exceptions.	N/A: What was not known was not preventable.	Insight Dashboards created during UAT for long term monitoring of volume and exception changes (increases or decreases).	• Alert/pulses identified and notifications sent to IAH Comm Support. • Business and IAH work together if additional phase is needed. • ServiceNOW incident reported and escalated as needed.
Output file errors (timing, format, info, reporting).	N/A: What was not known was not preventable.	Hypercare Phase: Daily auditing is performed and process logs are monitored. Insight Dashboards created during UAT for long term monitoring of volume and exception changes (increases or decreases).	• Business and IAH team adjusts bot design to identify output file errors. • Business and IAH work together if additional phase is needed.
Automated QA Bot.	Bot produces email/confirmation/notification of summary indicating input matches output file/data/action results.	Bot indicates in email either success or failure of input=output comparison.	• IAH Support and/or business reviews and determines next steps.

Unknown reasons If the bot fails, how will it continue and resolve issue?	N/A: What was not known was not preventable.	Bot is unable to complete the automated process.	• Bot sends notification email to those who are on the distribution list and IAH Prod support team [iah_rpa_prod_support@geisinger.edu]. • The Bot Controller will then be responsible to triage the bot disruption, fix the issue(s), and either schedule ad hoc processing or resume the bot processing. • Response time confirmed by business – the goal is to complete the work by 10th of the month, but ok if completed by 15th of the month.
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5. Technical Details

Item	Description	Comment
Robot Type	Unattended,	
Orchestrator used?	Yes	On-Premise Version
UiPath version used	2020.10.4	

6. Reporting

Report Type	Update Frequency	Details
Application is Down (Epic)	Whole process failed: Alert busines that BOT didnt run at run time (High Alert) Bot will start processing the patients once application is back up. Subject: *Nursing – Weights Chart Audits Process Failed* Body: The Nursing – Weights Chart Audits Process Failed to run at MM:DD:YYYY HH:MM AM/PM. The bot will process the patients during the next run.	
BOT couldn't complete the chart audit form for a patient (one email after each run)	Bot will upload the existing blank or incomplete chart audit form to the appropriate SP site and name the document if Bot is not able to complete the chart audit form twice in a row Subject: * Nursing – Nursing – Weights Chart Audits - Admission Date_ (YYYY/MM/DD)_MRN_Department* Body: MANUAL_REVIEW_NEEDED_ Admission Date_ (YYYY/MM/DD)_MRN_Department (how many times Bot failed this patient) The Nursing – Weights Chart Audits Process Failed to run at MM:DD:YYYY HH:MM AM/PM for MRN.	Create email alerts Include: Patient Name, MRN, Department, when BOT failed
ORDER Signed date and time in the future(one email after each run)	Bot will email users and alert them Title: IAH Weights Audits Run MM DD YYYY HH MM Body: Bot found patients with future order date/time during MM DD YYYY HH MM run: List of: Weights _Audits_FolderName_MRN_AdmissionDate_(YYYY_MM_DD)	Create email alerts Include: Patient Name, MRN, Department,
Bot couldnt Complete the chart audit form	Bot will upload a blank or incomplete chart audit form to the appropriate SP site and name the document if Bot is not able to complete the chart audit form twice in a row Title: IAH Weights Audits Run MM DD YYYY HH MM	Create email alerts Include: Patient Name, MRN,

(one email after each run)	Body: IAH Weights Audits Bot could not complete below patients during MM DD YYYY HH MM run: List of: Weights _Audits_FolderName_MRN_AdmissionDate_(YYYY_MM_DD) Bot will conTinue to process these patients once it is able to process	Department, when BOT failLed
If Bot fails more than 24 hours, less than 7 days	Alert business that Bot didn't run daily for 5 days, indicating how many days Bot didn't run , IAH will be in touch with business to work for future steps	
If Bot Fails > 7 days ago	Alert business that Bot didnt run daily for 5 days, indicating how many days Bot didnt run , IAH will be in touch with business to work for future steps	

7. Environment Details

Application	Development Stage	Environment	Access Type	Access Key/Credential
Epic	Development, Test, Prod	Epic	Username and password And Log in dept	Username: IAH AUDITS IAH AUDITS2
Outlook	Development /Test/UAT/Prod	<Environment Name>	Email account and password	Email: TBD@geisinger.edu
Network Folders	Test/prod	Weights_ Chart Audits_Test Weights_ Chart Audits_Prod		Test/Prod

SP	Test/Prod	Nursing SP Site		https://geisinger.sharepoint.com/sites/NursingAutomationAudits
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8. Assumptions

Assumption	Impact
The entire process is automated end to end with no manual intervention.	
The distribution list, email addresses, and/or shared mailbox listed in the PDD for the purpose of process notification through email are to be maintained solely by the line of business.	

9. ADDITIONAL SOURCES OF PROCESS DOCUMENTATION

Type	Name	Link	Comments
Assessment			IAH Teams Folder
Step Recording (video)			IAH Teams Folder
Task Capture			IAH Teams Folder
UAT Recording (video)			IAH Teams Folder
Executive Summary			IAH Teams Folder

10.1 GLOSSARY

Acronym/Term	Meaning
PDD	Process Design Document – document that contains information about the process in scope for automation and about the agreed technical solution
RPA	Robotic Process Automation
MRN	Medical Record Number
IAH	Intelligent Automation Hub