

Process Design Document / Solution Design Document

Process Name: Clinical Nutrition Services Automation

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				
1.1				

REVIEW/APPROVAL

Role	Name	Date
SME		
Process Owner		
Business Architect		
Developer		
IAH Director		

STAKEHOLDERS

Role	Name	Email
SME		

Process Owner		
Business Architect		
Developer		
IAH Director		

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

The clinical nutrition automation process will identify patients who recently got diagnosed with diabetes and need to be scheduled with nutrition services. The automation will send an initial message to the PCP to sign the referral and send one additional reminder in a week if a referral is not signed. The automation will also capture the revenue brought by these completed nutrition visits.

3.2 DATA FLOW & APPLICATIONS

3.2.1 INPUT

Input	Format	Location	Is it natively digital?	Is it structured?
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Clarity / SQL	Database table	Network Folder	Yes	Yes
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3.2.2 OUTPUT

Output	Format	Location	Frequency	Comment
Output file	Excel	Network folder and Email	Each Run	For business and system exceptions
Dashboard	Digital/ Online	For revenue capture information and transaction counts	Real time data	Dashboard view

3.2.3 APPLICATIONS

Application	Version	Interface	Req Key / Operation / URL	Comment
Clarity/SQL		Database	TBD	
Epic		Desktop Application	TBD	Mimic Julie Fisher access
Outlook		Desktop Application	TBD	
Excel		Desktop Application	TBD	

3.3 BUSINESS RULES

Rule	Detail
Automation frequency	Weekly Tuesdays by 1pm or as soon as the report received (Initial message process, Reminder message process, Revenue capture process)
Bot start time	11:00 AM
Excluding weekends and holidays	No

SLAs

Bot will finish the input file before the next file is received (6 days)

3.4 CURRENT STATE METRICS

Avg. Monthly Transactions	# Batches Daily	Avg. Volume / Batch	Weekly Avg. Volume	Frequency
150 monthly			35 weekly	Weekly runs
Initial file (800)	1			Bot will cap at 200 new records per week until the initial file has been completed. Per business, 200 new plus follow ups per week

3.5 CURRENT STATE PROCESS FLOW

High Level Process Flow Diagram (Current state):

Insert Diagram

High-Level Process Step

4. Future State Process Description

4.1 FUTURE STATE PROCESS FLOW

Bot Automation Process & Workflow Diagram (Future State):

First notification:

Bot will export the list of patients from network folder every Tuesday at approx. 1:00PM
(See notes)

- **Bot will use** Last name, First name, MRN, DOB to find the patient
 - **If bot cannot find the patient – business exception**
 - **If deceased patient – business exception**
 - **If the BTG patient – business exception**
- **Bot will create a telephone encounter**
 - PCP Name is the encounter provider
 - Department: 67000
 - Date: Current (today's date)
- Reason for Call: 67 - Referral
- Bot will pend: Epic7263 Diabetes Management Education (ADA) Referral
- Bot will document:

INITIAL MESSAGE

This participant is newly diagnosed with diabetes. Attached is a pended American Diabetes Association referral for comprehensive diabetes education.

Please sign the orders if you agree to have the participant have diabetes self-management training and education with one of our educators.

This list was system generated to help educate patients with diabetes early on. If you believe this patient does not have diabetes, please decline the order.

Please associate the appropriate diabetes diagnosis to this order.

This is an automated user. Please do not reply. If you have questions, please route to P 35726.

- Route: PCP

Reminder Notification:

- **Bot will keep track of the CSN encounter number, and patient information.**
- **7 days passed since the first initial message AND there is NO signed Epic7263 Diabetes Management Education order in the chart since the last run.**
- **Bot will go back into the same telephone encounter**
- **Bot will document:**

REMINDER MESSAGE

Friendly reminder: Your participant is newly diagnosed with diabetes. Please consider the pended referral for diabetes education. If you decline, please 'refuse all' and sign the encounter.

This list was system generated to help educate patients with diabetes early on. If you believe this patient does not have diabetes, please decline the order.

If you agree, please associate the appropriate diabetes diagnosis to this order.

This is an automated user. Please do not reply. If you have questions, please route to P 35726.

- Route: PCP

Reminder Notification:

- **Only 1 reminder message per patient (total of 2 messages: 1 initial and 1 reminder)**

Appointment Completion Check:

- **Bot will 6 weeks after the last notification go back to the same patient's chart**
- **Bot will go to the Review**
- **Type of the encounter: Nutrition services Or Telemedicine**
- **Department specialty will include: Nutrition Service**
- **Date: since first notification to PCP till the current date.**
- **Billing info under encounter info**

- **All charges for this encounter should include one of the:**
 - G0108 - \$53.23
 - G0109 - \$15.10
 - 97802 - \$35.66
 - 97803 - \$35.05
 - 97804 - \$16.37
- Qty: is the unit
- Revenue: The charge Code X Qty
- Patients could have around 4 encounters for Bot to check and add
- Bot will create detailed info on the different billing codes and ROI calculations.

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.	The bot will click inside the User ID and type the user ID	
2.	The bot will click inside the password field and type the password	
3.	The bot will click Log In	
4.	The bot will click inside the department field	
5.	The bot will type 67000 and press Enter	
6.	The bot will click Continue	

7.	If this user agreement comes up, Bot will click OK	
8.	if Message of the Day pops up, click OK	
9.	If this What's New video alert comes up, Bot will click Remind Me Later	
10.	If Here's Why...Hyperspace Updates pop up, click 'I've Watched This'	
11.	If Change Challenge Answers pops up, Bot will click Cancel	
12.	If Change Challenge Answers pops up, Bot will click Continue	
	STEPS for the initial notification	
13.	The bot will click on Tel Enc	
14.	The bot will type the MRN of the patient from the input file	

	report, Column A (pat_id)	
15.	The bot will click on Find Patient	
16.	The bot will confirm the patient's DOB using the input file Column C (DOB) If the DOB doesn't match - Bot will report this patient as a business exception. Reason: DOB does not match	
17.	If the patient is DECEASED, Bot will report this patient as a business exception. Reason: Deceased patient	
18.	Once the matching patient found, Bot will click Accept	
19.	If the Break-The- Glass window pops up, the Bot will click Cancel and report this patient as a business exception. Reason: BTG Patient	

20.	The bot will type the PCP number in the Provider field in Epic using the information from the input file, Column G (curr_pcp_prov_id) and press Enter	
21.	The bot will click inside the department field, type 67000 and press enter	
22.	The bot will click Accept	
23.	The bot will confirm it landed on the Call Intake tab	
24.	The bot will click on Reason for Call	
25.	The bot will click inside the reason for call box	
26.	The bot will type 67 and click Add	
27.	The bot will enter the following comment:	

	IAH (Innovation Automation Hub) Referral Request	
28.	The bot will click on Add Order	
29.	The bot will click inside the search for new orders box	
30.	The bot will type Epic7263 and click on the green plus sign	
31.	The bot will click once on the Epic7263 order	
32.	The bot will click Accept	
33.	By Provider The bot will enter # 155421 in the field and confirm it is COOLBAUGH, STACY A	
34.	Referral Priority The bot will select "Within 10 days (routine)"	

35.	Reason for Referral The bot will select “Type 2 Diabetes”	
36.	Is the patient pregnant? The bot will select “No”	
37.	Is this a newly diagnosed condition? The bot will select “Yes”	
38.	The bot will click Accept	
39.	If Potential Duplicate Orders Found pops up, the bot will click cancel The bot will report this as a Business Exception . BE = Duplicate Order If no pop-up, the bot will Jump to step 43	
40.	The bot will remove the Diabetes Management	

	Education Referral by clicking on the X	
41.	The bot will navigate to Documentation and click on DUPORDER	
42.	The bot will select Sign Encounter to close the encounter and move on to the next patient.	
43.	The bot will click "Pend"	
44.	The bot will click inside the Documentation window	
45.	The bot will type the following: This participant is newly diagnosed with diabetes. Attached is a pended American Diabetes Association referral for comprehensive diabetes education. Please sign the orders if you agree to have the participant have	

	diabetes self-management training and education with one of our educators. This list was system generated to help educate patients with diabetes early on. If you believe this patient does not have diabetes, please decline the order. Please associate the appropriate diabetes diagnosis to this order. This is an automated user. Please do not reply. If you have questions, please route to P 35726.	
46.	The bot will click Accept	
47.	The bot will click on Chart Review	
48.	The bot will confirm (QA) telephone encounter was created When: Today	

	Type: Telephone Department: Nutrition Services	
49.	The bot will click once on the encounter	
50.	The bot will confirm the date of the message and the documentation under 'ME'	
51.	The bot will click on Detailed Report to locate the CSN Number	
52.	The bot will copy the CSN / Encounter #	
53.	The bot will confirm there is a Diabetes Management Education Referral listed as <i>Pending Order</i> under the Visit Diagnosis and Associated Orders Section	
54.	The bot will click on Call Intake tab	

55.	The bot will click on Routing	
56.	The bot will click inside the Enter recipients box	
57.	The bot will type the PCP ID from the input file column G (curr_pcp_prov_id) and press Enter	
58.	The bot will click Send and Close Workspace	
59.	If the following pops up, Bot will click "Pend" from the Visit Taskbar pop up	
	STEPS for the REMINDER messages	
60.	The bot will click Review	
61.	The bot will type the MRN of the patient from the input file, Column A (pat_id)	
62.	The bot will click on Find Patient	

63.	The bot will confirm the patient's DOB using the input file, column K (DOB) If the DOB doesn't match - The bot will report this patient as a business exception. Reason: DOB does not match	
64.	If the patient is DECEASED, Bot will report this patient as a business exception. Reason: Deceased patient	
65.	Once the matching patient is found, Bot will click Accept	
66.	If the Break-The-Glass window pops up, Bot will click Cancel and report this patient as a business exception. Reason: BTG Patient	
67.	Bot will confirm it landed on the Chart Review tab	

68.	Bot will locate the encounter it created with the initial reminder When: the date of first initial reminder Type: Telephone Department: Nutrition Services	
69.	Bot will click once on the encounter	
70.	Bot will locate the date of the initial message and the documentation under 'ME'	
71.	Bot will click on Detailed Report to locate the CSN Number	
72.	Bot will confirm the CSN from the input file column J (CSN) is matching the encounter# If the CSN does not match, Bot will report this patient as business exception. Reason: CSN does not match.	

73.	Bot will also confirm there is a pending order under visit diagnoses and associated orders and name of the order is 'Diabetes Management Education (ADA)' If there is no pending order, Bot will report this patient as business exception. Reason: No pending order found	
74.	Bot will click Encounter	
75.	If this pop up shows up, Bot will click Create Addendum	
76.	Bot will click create Note	
77.	Bot will type: Friendly reminder: Your participant is newly diagnosed with diabetes. Please consider the pended referral for diabetes education. If you decline, please	

	'refuse all' and sign the encounter. This list was system generated to help educate patients with diabetes early on. If you believe this patient does not have diabetes, please decline the order. If you agree, please associate the appropriate diabetes diagnosis to this order. This is an automated user. Please do not reply. If you have questions, please route to P 35726.	
78.	Bot will click Accept	
79.	Bot will click on Call Intake	
80.	Bot will click on Routing	
81.	Bot will click inside the 'Enter recipients' box	

82.	Bot will type the PCP ID from the input file column I (PCP ID) and press Enter	
83.	Bot will click "Send and Close Workspace"	
84.	If the following pops up, Bot will click "Pend" from the Visit Taskbar pop up	
85.	Bot will click Log Out to exit the workspace	
	BILLING CONFIRMATION SECTION	
86.	Bot will run the query for the completed visits	
87.	Bot will review the charges and quantities, encounter date, type and location	
88.	Bot will calculate the Revenue	All charges for this encounter should include one of the following:

		<table><tr><th>Epic Charge Code-EAP</th><th>Epic Charge Code Description</th><th>EPIC Default CPT/HCPCS</th><th>Medicare revenue per unit</th></tr><tr><td>9420010801</td><td>HC DIAB SLF-MGT TRAIN IND 30 MIN</td><td>G0108</td><td>\$53.23</td></tr><tr><td>9420010901</td><td>HC DIAB SLF-MGT TRAIN GRP 30 MIN</td><td>G0109</td><td>\$15.10</td></tr><tr><td>9429780201</td><td>HC MNT TX 15 MIN</td><td>97802</td><td>\$35.66</td></tr><tr><td>9429780301</td><td>HC MNT RE-ASSESS 15 MIN</td><td>97803</td><td>\$35.05</td></tr><tr><td>9429780401</td><td>HC MNT GRP 30 MIN</td><td>97804</td><td>\$16.37</td></tr></table> - Qty: is the unit - Revenue: The charge Code X Qty	Epic Charge Code-EAP	Epic Charge Code Description	EPIC Default CPT/HCPCS	Medicare revenue per unit	9420010801	HC DIAB SLF-MGT TRAIN IND 30 MIN	G0108	\$53.23	9420010901	HC DIAB SLF-MGT TRAIN GRP 30 MIN	G0109	\$15.10	9429780201	HC MNT TX 15 MIN	97802	\$35.66	9429780301	HC MNT RE-ASSESS 15 MIN	97803	\$35.05	9429780401	HC MNT GRP 30 MIN	97804	\$16.37
Epic Charge Code-EAP	Epic Charge Code Description	EPIC Default CPT/HCPCS	Medicare revenue per unit																							
9420010801	HC DIAB SLF-MGT TRAIN IND 30 MIN	G0108	\$53.23																							
9420010901	HC DIAB SLF-MGT TRAIN GRP 30 MIN	G0109	\$15.10																							
9429780201	HC MNT TX 15 MIN	97802	\$35.66																							
9429780301	HC MNT RE-ASSESS 15 MIN	97803	\$35.05																							
9429780401	HC MNT GRP 30 MIN	97804	\$16.37																							
89.	Bot will provide the total revenue captured as well as the date of the encounter for filtering																									
	DASHBOARD information																									
90.	Bot will provide these widgets on the dashboard	Total successful transaction volumes For initial message and reminder message Total business exception volumes For initial message and reminder message Total system exception volumes For initial message and reminder message Total successful transaction volumes For initial message Total business exception volumes For initial message Total system exception volumes For initial message Total successful transaction volumes For reminder message Total business exception volumes For reminder message Total system exception volumes For reminder message																								

		• Total Daily Success, business and system exception volumes For initial message and reminder message • Total weekly Success, business and system exception volumes For initial message and reminder message • Total monthly Success, business and system exception volumes For initial message and reminder message • Total quarterly Success, business and system exception volumes For initial message and reminder message • Total revenue captured • Total revenue captured daily (visit date) • Total revenue captured weekly (visit date) • Total revenue captured monthly (visit date) • Total revenue captured quarterly (visit date) • Total revenue capture broken down by revenue code
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4.5 EXCEPTIONS IN THE PROCESS FLOW

Exception	Actions	Comment
Patient Not Found	Flag in output file and continue to next Masterfile entry to process	Business exception
Break-the-Glass	Flag in output file and continue to next Masterfile entry to process	Business exception
Deceased	Flag in output file and continue to next Masterfile entry to process	Business exception
CSN Doesnt Match	Flag in output file and continue to next Masterfile entry to process	Business exception
DOB doesnt match	Flag in output file and continue to next Masterfile entry to process	Business exception
No Pending Order	Flag in output file and continue to next Masterfile entry to process	Business exception
Duplicate Order	Flag in output file and continue to next Masterfile entry to process	Business exception

4.6 SYSTEM ERRORS

Error	Action	Comment
Application crash	Recover and retry 3 times	business will process manually
Epic Downtime	Pause bot if during run time	business will process manually
Epic Upgrade	Review with business and determine what/if any action is necessary	business will process manually

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.
Higher than expected input volume			
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

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	Distribution List
Process Report	Daily	Report status of processed transactions via email and drop in Network Folder: Attach Output File Subject: IAH – Clinical Nutrition Services Daily Summary <MM/DD/YYYY> e-secure Body: Below is the summary of the daily run: Successes: how many Business Exceptions: how many System Exceptions: how many Attachment = 3 tabs Tab 1 = Success Column A = MRN Column B = Patient Name Column C = DOB Column D = DX Column E = DX Date Column F = DX Source Column G = DX Encounter Column H = PCP Name Column I = PCP ID Column J = CSN # Tab 2 = Business Exceptions Column A = MRN Column B = Patient Name Column C = DOB Column D = DX Column E = DX Date Column F = DX Source Column G = DX Encounter Column H = PCP Name Column I = PCP ID Column J = CSN # Column K = Business Exception Reason	

		Tab 3 = System Exceptions Column A = MRN Column B = Patient Name Column C = DOB Column D = DX Column E = DX Date Column F = DX Source Column G = DX Encounter Column H = PCP Name Column I = PCP ID Column J = CSN # Column K= System Exception Reason	
Error Logs	At Time of Error	Report of process errors Subject: IAH – Clinical Nutrition Services ERROR <MM/DD/YYYY> e-secure Bot will email the business to inform of the failure. Body: Bot failed due to system error. Bot will run the same population with next run.	

7. Environment Details

Application	Development Stage	Environment	Access Type	Access Key/Credential
Epic	Development	<Epic_Dev>	Username And Log in dept	Username: <USER ID> Login Department: NUTRITION SERVICES MUNCY [67000]

	Test	<Epic_Test>	Username And Log in dept	Username: Login Department: NUTRITION SERVICES MUNCY [67000]
	Prod	<Epic_Prod>	Username And Log in dept	Username: <USER ID> Login Department: NUTRITION SERVICES MUNCY [67000]
Outlook	Development /Test/UAT/Prod	<Environment Name>	Email account	Email: TBD@geisinger.edu

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. Appendix

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