

Lab Report Severity Check AI Agent – User Manual

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Author: Akbar Shaikh

Email ID: Akbar.shaikh@novatiosolutions.com

Organization: Novatio Solutions

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1. Executive Summary

The **Lab Report Severity Check AI Agent** is an agentic automation solution built on **Automation Anywhere** that streamlines lab report review in healthcare organizations. The agent securely retrieves patient lab data using API tasks, evaluates health severity using AI, and generates concise clinical notes. Normal and abnormal cases are automatically updated, while severe cases are routed through a Human-in-the-Loop approval workflow to ensure safety and governance. Approved cases are updated in the system, rejected cases are held for manual review, and a consolidated summary email is sent to doctors and hospitals. This solution reduces manual effort, accelerates critical case detection, lowers operational costs, and enables doctors to focus on patient care.

2. Solution Overview

The **Lab Report Severity Check AI Agent** automates lab report processing using Automation Anywhere's agentic automation. It retrieves lab data via API tasks, evaluates patient severity using AI, and generates clinical notes automatically. Normal and abnormal cases are updated without intervention, while severe cases are routed for Human-in-the-Loop approval. Approved cases are updated, rejected cases are held for manual review, and a summary email is sent to doctors and hospitals—reducing manual effort and improving patient safety.

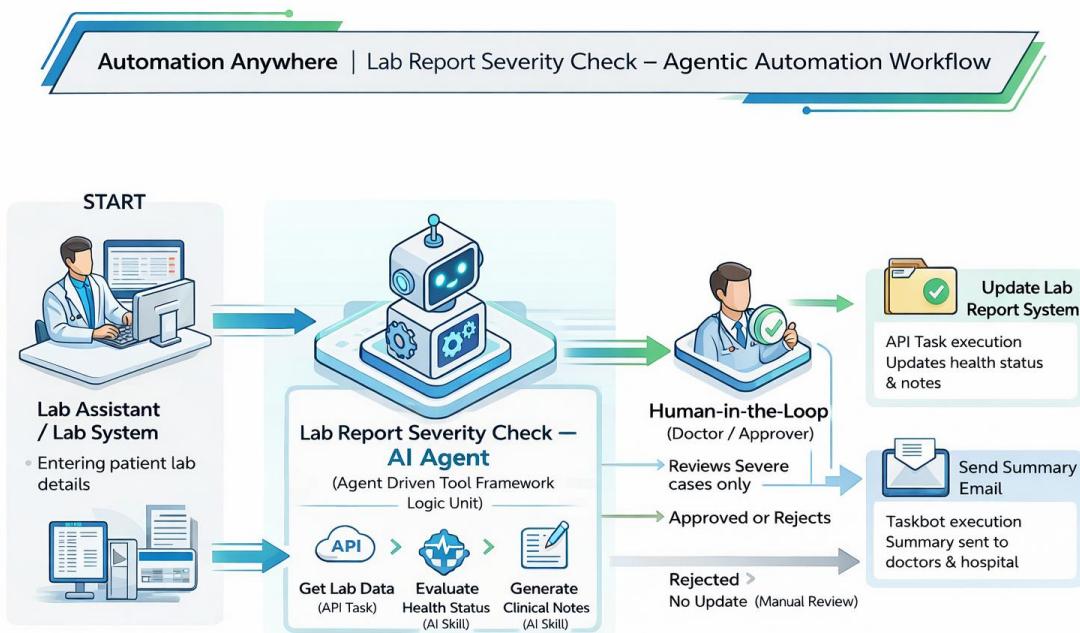


Figure 1: High-Level Solution Overview

3. Key Benefits

- **Significant Cost Reduction:** Automates routine lab report reviews, reducing dependency on additional doctors or lab staff as report volumes increase.
- **Higher Clinician Productivity:** Doctors spend less time reviewing normal reports and more time on critical cases and patient care, improving overall utilization.
- **Faster Critical Case Escalation:** Severe lab results are identified and escalated immediately, reducing downstream costs caused by delayed intervention or emergency escalation.
- **Controlled Risk with Human Oversight:** Human-in-the-Loop approval for severe cases minimizes clinical and compliance risk while maintaining automation efficiency.
- **Operational Scalability:** Handles growing lab volumes without proportional increases in staffing, enabling predictable operational costs.
- **Lower Rework and Error Costs:** Consistent, AI-driven evaluation reduces human error and repeat reviews, improving first-pass accuracy.
- **Measurable ROI:** Reduced manual review hours, lower overtime costs, and faster processing collectively deliver tangible financial returns within months.

4. Core Components

1. Lab Management Systems (EMR / LIMS)

The source systems where lab assistants enter patient lab data. These systems provide structured lab report data that the agent retrieves securely using APIs.

2. Secure API Layer

Ensures authenticated and encrypted communication between the lab systems and the automation platform, maintaining data integrity and compliance.

3. Lab Report Severity Check AI Agent

The central agentic automation component is responsible for orchestrating the entire workflow. It retrieves lab data, evaluates health severity, generates clinical notes, and determines the next action based on outcomes.

4. API Tasks

Used to fetch patient lab reports and update health status and clinical notes back into the lab management system without UI dependency.

5. AI Skills

Enable intelligent analysis by classifying patient health status (normal, abnormal, severe) and generating concise clinical notes based on lab values.

6. Human-in-the-Loop (HITL) Approval

Provides clinical governance by allowing doctors to review and approve or reject severe cases before any updates are committed.

7. Integrated Healthcare Systems

Includes lab report systems and data repositories where approved updates are stored and made available for clinical use.

5. Process Flow

The following Swimlane Diagram shows interaction between the User, the Agents, and external systems.

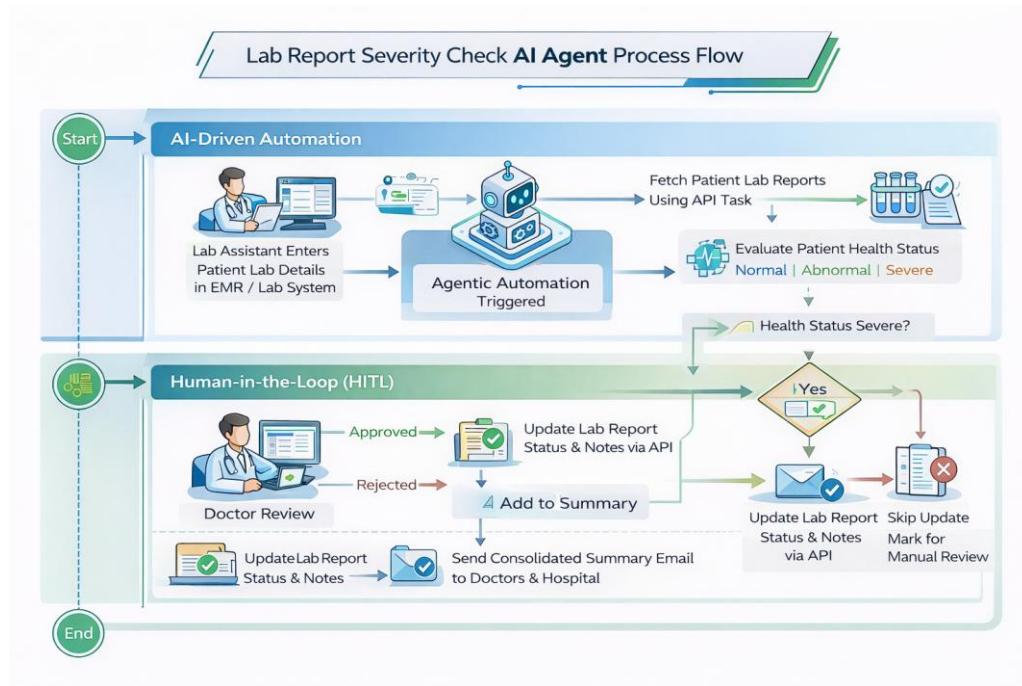


Figure 2: End-to-End Process Flow

5.1 Step-by-Step Workflow

1. Lab Data Entry

A lab assistant enters patient lab details into the EMR or lab system.

2. Agent Triggered

The Lab Report Severity Check AI Agent is triggered automatically.

3. Data Retrieval

The agent fetches all patient lab reports securely using API Tasks.

4. Severity Evaluation

AI evaluates each report and classifies health status as normal, abnormal, or severe.

5. Clinical Notes Generation

The agent generates concise clinical notes based on lab values.

6. Human Approval (Severe Only)

Severe cases are routed to a doctor for Human-in-the-Loop approval.

7. System Update

Approved severe cases and all normal/abnormal cases are updated automatically via APIs.

8. Notification

A consolidated summary email is sent to doctors and the hospital.

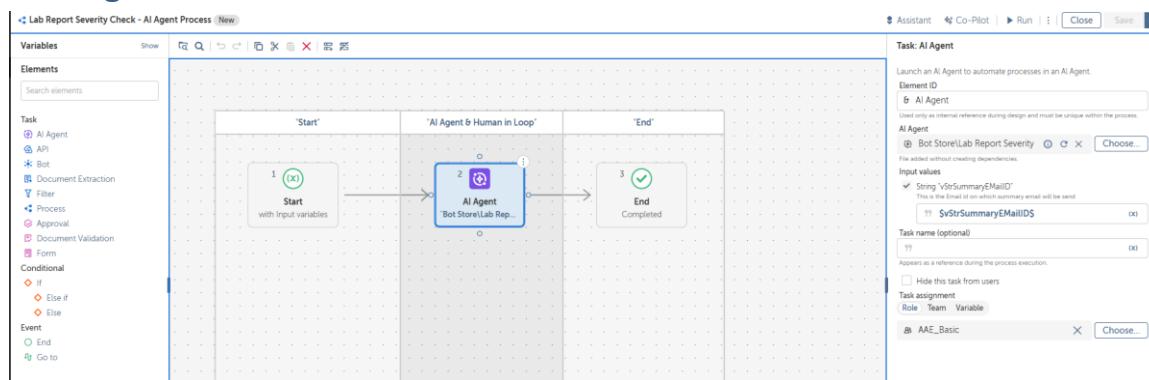
5.2 Prerequisites

- Automation Anywhere Control Room access – Including AI Agent & Ai Skills Access
- Access to lab website for manual check (sample website) - <https://patient-chart-co.lovable.app/>
- Access to lab website API (Sample Data) - <https://bhtuyacoebqhxjoflkyk.supabase.co/functions/v1/lab-data>
- Microsoft Outlook client 32 Bit

5.3 Outlook Configuration

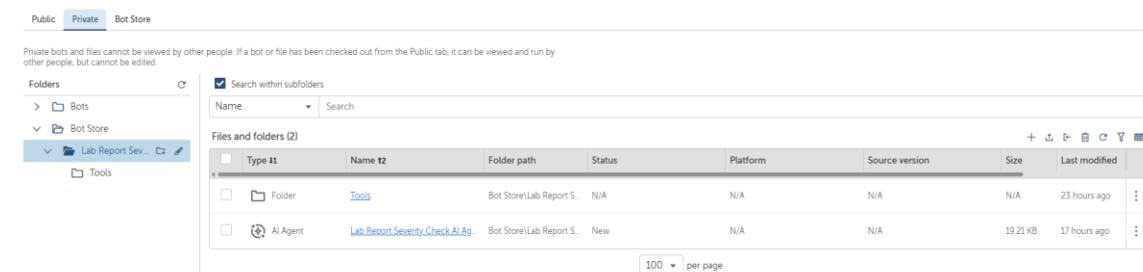
Ensure the bot runner machine has a configured Outlook profile.

6. Usage Guide



6.1 AI Agent

Automation



Private bots and files cannot be viewed by other people. If a bot or file has been checked out from the Public tab, it can be viewed and run by other people, but cannot be edited.

Folders

- Bots
- Bot Store
- Lab Report Sev. (selected)
- Tools

Search within subfolders

Name: Search

Files and folders (2)

Type	Name	Folder path	Status	Platform	Source version	Size	Last modified
Folder	Tools	Bot Store\Lab Report Sev.	N/A	N/A	N/A	N/A	23 hours ago
AI Agent	Lab Report Severity Check AI Agent	Bot Store\Lab Report Sev.	New	N/A	N/A	19.21 KB	17 hours ago

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6.2 Tools

Automation

Public Private Bot Store

Private bots and files cannot be viewed by other people. If a bot or file has been checked out from the Public tab, it can be viewed and run by other people, but cannot be edited.

Folders

- > Bots
- ▼ Bot Store
 - ▼ Lab Report Severity Che...
 - Tools

Search within subfolders

Name Search

Files and folders (9)

Type	Name	Folder path	Status	Platform	Source version
Process	Lab Report Severity Check - AI Agent Process	Bot Store\Lab Report S...	New	N/A	N/A
Task Bot	Send Summary Email	Bot Store\Lab Report S...	New	Windows	N/A
AI Skill	Lab Report Notes Creation Ai Skills	Bot Store\Lab Report S...	New	N/A	N/A
AI Skill	Lab Report Severity Check Agent	Bot Store\Lab Report S...	New	N/A	N/A
API Task	Get Patient Health Notes Tool	Bot Store\Lab Report S...	New	N/A	N/A
API Task	Get Patient Health Status Tool	Bot Store\Lab Report S...	New	N/A	N/A
API Task	Get Patient Lab Report Tool	Bot Store\Lab Report S...	New	N/A	N/A
API Task	Update Patient Lab Report Tool	Bot Store\Lab Report S...	New	N/A	N/A
Form	Health Result Form	Bot Store\Lab Report S...	New	N/A	N/A

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6.3 Tools Details

Sr No	Tool Name	Tool Description
1	Lab Report Severity Check AI Agent	This is the Lab report severity check AI Agent including integration of multiple tools listed below
2	Lab Report Severity Check - AI Agent Process	This is the Lab report severity check AI Agent process
3	Get Patient Lab Report Tool	This is API Task to get all patient lab details
4	Get Patient Health Status Tool	This is API Task to get all patient health status details
5	Get Patient Health Notes Tool	This is API Task to get all patient clinical notes based on report details
6	Lab Report Severity Check Agent	This is AI Skills to find Severity based on Report data
7	Lab Report Notes Creation Ai Skills	This is AI Skills to find Clinical notes based on Report data
8	Health Result Form	This is form to display Severe Patient Health Details
9	Update Patient Lab Report Tool	This is API Task to update Patient health Status and clinical notes
10	Send Summary Email	This is Task Bot to send all patient summary lab report over email

6.4 How to Execute:

Step 1: Execute Lab Report Severity Check - AI Agent Process Flow

Step 2: Provide Email ID to get Lab report summary email.

Step 3: Go To AI Tools under Test to see current AI Agent Process

Step 4: Wait for Bot to process.

Step 5: Provide Approval for Severe Cases.

Step 6: Bot will be completed Automatically.

7. Troubleshooting

Issue	Probable Cause	Solution
500 Internal Server Error	JSON Parsing Error	Request "Create Issue" access for your project in Jira.
Email Not Sent	Outlook blocked/closed	Ensure Outlook is open or SMTP is allowed on port 587.