

Google ADK PRD-to-User Stories Agent Functionality: Healthcare Claims Processing Specialization

Functional Overview

The PRD-to-User Stories Agent is a specialized Google ADK agent designed to automate the conversion of Product Requirement Documents (PRDs) into comprehensive, well-structured user stories. While the agent supports general PRD processing, it offers enhanced capabilities for healthcare domain requirements, with particular expertise in behavioral health claims processing and payment integrity workflows.

Input Processing

Supported PRD Formats

The agent accepts PRDs in the following formats:

Plain text

Markdown

Rich text

Structured formats (JSON, YAML)

Healthcare-specific formats (HL7 FHIR documentation)

PRD Structure Recognition

The agent identifies and extracts the following elements from PRDs:

Epic Descriptions: High-level goals and objectives (e.g., Claims Intake for Payment Integrity)

Feature Descriptions: Specific capabilities within epics (e.g., HIPAA-compliant claims submission)

Requirements: Detailed specifications for features (e.g., EDI 837 processing requirements)

Context Information: Business drivers, stakeholders, constraints, regulatory requirements

Acceptance Criteria: Conditions for requirement satisfaction (e.g., compliance with specific CMS guidelines)

Healthcare Domain Specialization

Healthcare Terminology Recognition

The agent recognizes and properly interprets:

Medical coding systems (ICD-10-CM, CPT, HCPCS, Revenue Codes)

Healthcare transaction types (837-P, 837-I, 270/271, 835)

Regulatory references (HIPAA, CMS guidelines, 42 CFR Part 2)

Provider identifiers (NPI, Tax ID, NUCC taxonomy codes)

Place of Service codes and their regulatory implications

Healthcare Regulatory Compliance

The agent identifies and maps requirements to:

HIPAA transaction standards and code sets

CMS Program Integrity requirements (Pub. 100-08)

OIG Compliance Guidelines

State-specific behavioral health regulations

42 CFR Part 2 for substance use disorder information

NCCI edits and MUE thresholds

Behavioral Health Specific Processing

The agent can process specialized behavioral health concepts:

Behavioral health service codes (H-codes, specific CPT ranges)

Substance use disorder confidentiality requirements

Mental health parity compliance considerations

Specialized provider types and licensing requirements

Authorization and utilization management workflows

Analysis Capabilities

Requirement Classification

The agent classifies requirements based on:

Functional vs. Non-functional

Priority level (Critical, High, Medium, Low)

Dependency relationships

Implementation complexity

Regulatory compliance impact (High, Medium, Low)

Fraud, Waste, and Abuse (FWA) prevention value

Stakeholder Identification

The agent identifies healthcare-specific stakeholders:

Healthcare providers (therapists, psychiatrists, facilities)

Claims processors and medical coders

Compliance officers

Special Investigation Unit (SIU) members

Utilization management staff

Provider enrollment specialists

Member/patient services representatives

Domain-Specific Context Recognition

The agent recognizes and appropriately processes:

Industry-specific terminology

Regulatory references

Technical constraints

Business rules

Claims processing workflows

Healthcare payment models

User Story Generation

Story Structure

Each generated user story follows the standard format with healthcare role specifications:

As a [healthcare role],

I want to [capability],

So that [benefit/value/compliance objective].

Healthcare-Specific Acceptance Criteria Generation

For each story, the agent generates criteria that address:

Regulatory compliance requirements

Data validation rules for healthcare transactions

Required medical coding validations

Healthcare-specific security and privacy controls

Healthcare transaction response handling

Audit trail requirements for healthcare data

Story Attributes

The agent assigns the following attributes to stories:

Estimated complexity (Story points/T-shirt sizes)

Priority level

Epic/Feature association

Dependencies

Regulatory compliance category

Payment integrity impact assessment

Advanced Capabilities

Healthcare Requirement Gap Analysis

The agent identifies and flags:

Missing regulatory compliance elements

Incomplete medical coding validation requirements

Insufficient transaction validation criteria

Inadequate security and privacy controls

Missing audit requirements

Incomplete provider validation specifications

Healthcare Story Refinement

The agent applies healthcare industry best practices for:

Appropriate healthcare workflow terminology

Clear, healthcare compliance-focused language

Value-focused descriptions emphasizing payment integrity

Testable criteria aligned with healthcare regulations

Healthcare Consistency Validation

The agent ensures:

Coverage of all healthcare compliance requirements

Consistent terminology across stories (e.g., correct usage of "member" vs. "patient")

Logical dependencies reflecting healthcare workflows

Appropriate level of detail for healthcare system implementation

Output Formats

The agent generates user stories in the following formats:

Structured text

CSV/Excel compatible

JSON

JIRA/Azure DevOps compatible

Markdown tables

Healthcare system-compatible formats (e.g., Epic Hyperspace requirements)

Sample Workflow: Behavioral Health Claims Processing

Example: Processing a Behavioral Health Claims Intake Feature

Input: Agent receives a PRD for a behavioral health claims intake feature focused on payment integrity

Analysis:

Identifies core requirements for EDI 837-P/I submissions with behavioral health codes

Recognizes specialized terminology (CPT 90832-90837, H0004-H0015, ICD-10 F codes)

Maps regulatory requirements (HIPAA, CMS, 42 CFR Part 2) to functional needs

Identifies Place of Service validation requirements (POS 02 for telehealth)

Extracts NCCI edit and MUE threshold requirements

Story Generation:

Creates role-based stories for behavioral health providers, claims processors, SIU analysts

Formulates specific acceptance criteria incorporating CPT code validation, NPI verification

Maps dependencies between claim submission, validation, and adjudication

Includes specific regulatory references (e.g., HIPAA §162.920, CMS MLN909432)

Specifies required validation loops (e.g., Loop 2010AA for provider info)

Output:

Delivers structured set of user stories with acceptance criteria

Includes traceability to original PRD sections

Maps user stories to relevant healthcare regulations

Highlights areas requiring clarification or additional compliance detail

Suggests validation rules for behavioral health-specific requirements

Example User Story Output

User Story: Accept EDI 837-P Submissions for Outpatient BH Services

****As a**** behavioral health provider,

****I want to**** submit HIPAA-compliant EDI 837-P claims for outpatient behavioral health services,

****So that**** I can be reimbursed for services provided to patients while ensuring compliance with federal regulations.

Acceptance Criteria:

1. System accepts claims with valid NPI/Tax ID (verified via NPES registry)
2. System validates CPT codes against BH-specific NUCC taxonomy (e.g., 261QM0850X)
3. System rejects claims missing required loops (e.g., Loop 2010AA for provider info per X12 837-P TR3)
4. System logs submission timestamps for 42 CFR Part 2 audit trails
5. System validates Place of Service (POS) codes (e.g., POS 02 for telehealth per CMS MLN909432)
6. System flags potential duplicate claims based on NCCI MUE thresholds for H-codes

Interaction Model

Conversation Flow

Initialization:

Agent greets user and requests healthcare PRD input

Offers format options and guidance

Asks about specific healthcare domain focus (e.g., behavioral health, claims processing)

Healthcare Analysis Confirmation:

After processing, agent confirms key healthcare elements identified

Validates detected healthcare codes, regulations, and workflow requirements

Asks for clarification on ambiguous healthcare-specific sections

Generation Preview:

Agent presents sample healthcare stories for feedback

Highlights healthcare compliance elements included

Allows adjustments to healthcare terminology and regulatory references

Delivery:

Agent provides complete set of healthcare-focused user stories

Offers export options in preferred format

Provides healthcare compliance coverage summary

Captures feedback for future improvements

Healthcare Domain Customization Options

The agent supports customization of:

Healthcare-specific story format templates

Regulatory compliance validation rules

Medical coding validation requirements

Healthcare role definitions and terminologies

Compliance priority scaling

Healthcare workflow sequence preferences

Usage Examples

Example 1: Simple Behavioral Health Feature

For a straightforward behavioral health feature description, the agent:

Quickly identifies core behavioral health requirements

Extracts relevant CPT/HCPCS and ICD-10 code references

Generates 5-10 user stories with behavioral health-specific acceptance criteria

Includes relevant regulatory compliance validations

Example 2: Complex Payment Integrity System

For a complex payment integrity system with multiple features, the agent:

Structures stories hierarchically by payment integrity functions

Identifies cross-cutting compliance concerns

Maps complex dependencies between claims intake, validation, and SIU review

Suggests logical implementation sequences based on healthcare workflows

Includes comprehensive regulatory compliance references

Example 3: Fraud, Waste and Abuse Prevention

For a FWA prevention feature, the agent:

Maps requirements to specific OIG and CMS program integrity guidelines

Incorporates specific NCCI edit and MUE threshold checks into acceptance criteria

Flags high-risk requirements requiring specialized security controls

Links requirements to specific behavioral health billing risk areas

Creates user stories for SIU investigators and compliance officers