# **Linking Drug Supplier Codes with Ophthalmology Drug Inventory, Patient Records, and Insurance Billing**

# Problem Statement

In the ophthalmology practice, high-cost injectable drugs are a core part of patient treatment. the supplier will provide an invoice with (N) vials .

Each invoice has

* order number
* type of medication
* quantity
* full undiscounted price for the entire order
* discount price for the order

The purchased vials are entered into the inventory system, and stored under controlled conditions.

However, a recurring issue occurs: when vials are removed for use, staff sometimes forget to scan and record them in the patient’s file. This omission results in lost links between supplier invoices, inventory tracking, and insurance claims, leading to unreimbursed costs and due to the high price nature thai medication

The goal is that every purchased vial needs to be paid for in first step , then see if it can be profitable

## Context

Ophthalmology treatments often require drugs costing hundreds or thousands of dollars per vial. Proper tracking is essential to ensure both reimbursement and regulatory compliance. The current workflow — from receiving the vial to administering it — involves multiple touchpoints and human actions, increasing the risk of missed documentation.  
 if the vial usage is not scanned and connected to the patient record and consent form, the insurance company will not process payment, forcing the practice to absorb the expense. An integrated process linking supplier data, inventory management, and billing is essential to ensure financial sustainability and operational accuracy.

To ensure accuracy, all the necessary data for tracking, matching, and reporting will be extracted from a CSV file, allowing the process to be automated and reducing the risk of missed entries. This way, we can make sure that every time a vial is used, the insurance payment is secured.

## Criteria for Success

- Ensure 100% capture of vial usage events in patient records.  
- Establish an automated link between supplier invoices, inventory updates, and insurance claim submissions.  
- Reduce reimbursement denials related to missing documentation to near zero.  
- Improve operational compliance for drug handling and patient consent documentation.

## Scope of the Project

The project will:  
- Map the current end-to-end workflow for receiving, storing, and using high-cost drugs.  
- Identify failure points where scanning/documentation is missed.  
- Design a process and system integration plan that links supplier invoice data, inventory records, and insurance billing in real time.  
- Train staff and create standard operating procedures (SOPs) to enforce compliance.

## 

## Constraints

- Limited automation in the current inventory system may require customization.  
- Staff training and compliance will be critical, as manual errors are a key source of issues.  
- Vials may be used in urgent cases, making scanning compliance harder without workflow redesign.  
- Integration with external insurance portals may have technical or regulatory limitations.

## Stakeholders

- Practice Management Team – Oversees operational workflow and compliance.  
- Clinical Staff (Nurses, Technicians) – Directly handle vials and are responsible for scanning.  
- Billing Department – Submits claims to insurance companies.  
- Suppliers – Provide drugs with unique identifiers.  
- Insurance Companies – Require accurate documentation for reimbursement.

## Data Sources

- Supplier invoices containing order number and medications information such as quantity , price

- Inventory management system records called Podis or dispense log  
  
- Insurance claim submissions and reimbursement reports( Modmed system)

## Approach

1. Workflow Mapping – Document current steps from drug receipt to administration and billing.

2. Gap Analysis – Identify where scanning/documentation fails.

3. Data Integration Plan – Create a link between supplier data, inventory system, and payment system

4. Automation Enhancements – Implement barcode scanning prompts or mandatory scan checkpoints before usage.

Notes :

1- Every purchased vial paid for ( not be missed )

2- Could be profitable

3- Connect the three systems together and make a physical check

Dataset:

we have three systems interconnected which we need to use in order to get our data , in addition to those three systems , we need always to do a physical check of the inventory :

1- Invoice from the supplier ( Besse) : it will contain the following information

* Order number
* Type of medication
* Quantity
* Full price
* Discount price

2- Fridge log : is the physical count done in the beginning and the end of day

3- Scanning inventory : using Podis portal / Dispense log

4- Payment system : MoDMed Portal:

* Primary insurance
* Secondary insurance
* Copay