Session 2.5: Introduction to Systematic Review Software

Conceptual foundation | 45 minutes | Interactive lecture + group discussion

🎯 **Session Objective:** By the end of this session, participants will be able to describe the purpose, types, and key features of systematic review software platforms, and identify how these tools support evidence synthesis across planning, conducting, and reporting phases.

2.5.1 Why Use Software for Systematic Reviews?

Systematic reviews are methodologically intensive, requiring coordination across multiple reviewers, management of hundreds or thousands of records, and transparent documentation of decisions. Software platforms address key challenges:

📚 **Large volume of studies**
Centralized libraries with deduplication

🤝 **Team coordination**
Role-based access, assignment tracking

📋 **Reproducibility**
Audit trails, version control, PRISMA documentation

⚖️ **Bias reduction**
Dual-reviewer workflows, conflict resolution

⚡ **Time efficiency**
AI-assisted screening and query building

2.5.2 Types of Systematic Review Software

Screening & Data Extraction
Covidence, Rayyan, RevProHub
Title/abstract/full-text screening, data extraction

Reference Management
EndNote, Zotero, Mendeley
Citation storage, deduplication, formatting

Meta-Analysis
RevMan, JBI SUMARI, R (meta)
Statistical synthesis, forest plots

Full-Service Platforms
RevProHub, DistillerSR, EPPI-Reviewer
End-to-end: protocol to publication

2.5.3 Key Features to Evaluate When Choosing Software

- ✅ Collaboration support (real-time, role-based)
- 🤖 AI assistance (query building, screening prioritization)
- 📈 Reporting tools (PRISMA diagrams, export options)
- 💲 Cost & accessibility (free vs. subscription, offline availability)
- 📚 Standards alignment (Cochrane, JBI, PRISMA compliance)

2.5.4 The Role of AI in Modern Systematic Review Software

Current AI capabilities include: query refinement (PICO to database syntax), screening prioritization, data extraction assistance (identifying outcomes in PDFs), and conflict prediction.

⚠ **Important:** AI augments, does not replace, human judgment. All AI-assisted decisions must be verified by reviewers.

2.5.5 RevProHub in the Software Landscape

RevProHub is a **free, full-service platform** developed for the Ethiopian evidence synthesis community. It combines end-to-end workflow management (Planning → Conducting → Reporting), AI-assisted query building and chat refinement, mediator role for conflict resolution, 1-to-many repeater logic for qualitative synthesis, and automated PRISMA 2020 + Risk of Bias visualizations.

Discussion Activity (10 min)

In small groups, discuss:

1️⃣ What software (if any) have you used for literature reviews?

2️⃣ What was the biggest challenge you faced?

3️⃣ What features would be most valuable for your current work?

Session 2.6: Introduction to RevProHub Software

HANDS-ON + Master Architecture | 90 min workshop

Session Objective: By the end of this session, participants will be able to register for RevProHub, navigate global and project-specific dashboards, create a new project, invite team members with appropriate roles, and understand the three-phase workflow architecture.

2.6.1 What is RevProHub?

RevProHub is a **free, comprehensive web-based platform** supporting any systematic review or evidence synthesis project end-to-end. Core features: project creation & planning, protocol versioning, AI-assisted search query builder, dual-reviewer screening with conflict resolution, flexible data extraction (including repeater fields for qualitative data), meta-analysis, automatic PRISMA 2020 diagrams, manuscript editor with auto-injected findings, WBS/Gantt, and collaboration hub.

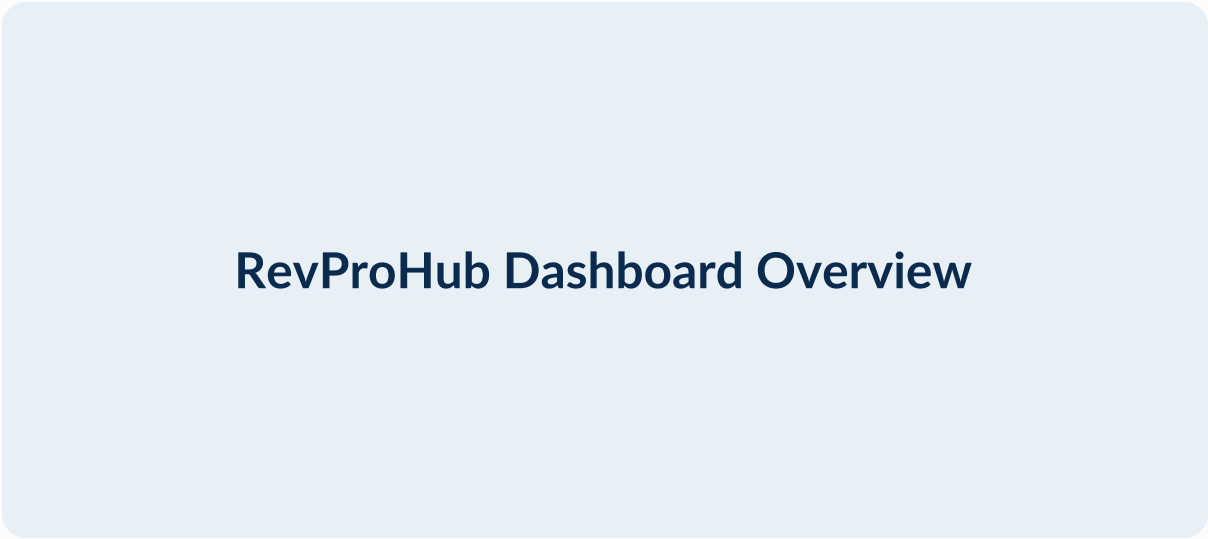


Figure 1: RevProHub high-level interface (illustrative).

2.6.2 Registration & Account Setup

1. Go to **www.reviprohub.com/register** (institutional or personal email accepted).
2. Complete registration form & verify email (activation link).
3. Log in & use "Reset Password" if needed.



Figure 2: RevProHub Registration Interface (illustrative).

2.6.3 The Navigation Ecosystem: Context-Aware Sidebar

The platform uses a **Context-Aware Sidebar** — navigation options adapt whether you are on the global dashboard or inside a specific project.

Global Dashboard
View all projects, track personal tasks, read announcements.

Project Dashboard
Mission Control: live stats (screening progress, pending conflicts, library totals).

☰ **Sidebar menu structure** — Global: My Dashboard, All Projects, Announcements, My Tasks. Project-specific: Project Overview → Planning → Conducting → Reporting → Collaboration Hub → Project Admin.



Figure 3: Global dashboard vs. project-specific navigation.

2.6.4 Creating a New Project

1. Click "**Create New Project**" on main dashboard.
2. Enter Project Name, Description, Start Date.
3. Select **Project Type** (Meta-Analysis, Qualitative Synthesis, Scoping Review, Mixed Methods) — aligns with evidence hierarchy.
4. Optional budget for administrative tracking → Click "Create".

→ After creation, you are automatically redirected to the **Project Details page** (Mission Control).

2.6.5 The Three Core Workflow Phases

📌 **Planning (Blueprint)**
Protocol, research questions, search strategy, QA forms, extraction forms.

⚙️ **Conducting (Engine)**
Studies library, deduplication, screening, quality appraisal, data extraction.

📊 **Reporting (Synthesis)**
PRISMA diagram, data synthesis, report generator, manuscript editor.

💬 **AI Query Builder & Refinement Chat Room:** Create complex PubMed/Hinari queries using PICO, then iteratively refine based on search performance – directly within the planning phase.

2.6.6 Members & Access Control (Roles + Mediator)

Add team members: navigate to **Members & Access** → Invite Member → assign role.

Admin/Manager Full control: settings, assignments, all modules. Reviewer Screening, appraisal, extraction (dual-review assignments). Mediator Resolve conflicts **only on assigned studies** (study-specific, not global).

💡 **Mediator role:** designed for conflict resolution workflows – assigned per conflicting study, not a global super-reviewer. This reduces bias and improves transparency.

Member Invitation & Role Selection

Figure 4: Assigning team roles, including Mediator.

2.6.7 Project Dashboard: Key Stats Cards

Unique Studies

T/A Screening Progress

Pending Conflicts

Potential Duplicates

Navigation cards directly open Planning, Conducting, or Reporting dashboards.

2.6.8 Help & Support

User Guide
Detailed step-by-step documentation via left sidebar.

Contact Support
Submit tickets or book technical support sessions.

Session 2.6 Hands-On Activity: System Discovery (20 min)

1. Register for RevProHub (or log in).
2. Create a new project titled: **"[Your Name] Pilot Review"** – select a project type of your choice.
3. Navigate to **Members & Access** and invite a partner (assign as **Reviewer**).
4. Observe how the sidebar menu changes when you enter the project context.
5. Navigate to **Planning → Research Questions & Eligibility** and note where inclusion frameworks are stored.
6. Return to the Project Dashboard and identify the three-phase navigation cards.

Debrief questions:

- What information is displayed on the stats cards?
- How does the Mediator role differ from Reviewer?
- Where would you go to export all screening decisions?
- In which phase (Planning/Conducting/Reporting) would you develop data extraction forms? Why?

Additional: Mediator vs. Traditional Senior Reviewer & Export Center

The **Mediator** in RevProHub is assigned only to specific studies in conflict, ensuring focus and preventing unnecessary authority over all decisions. In contrast, traditional "senior reviewer" often has blanket authority. Data extraction forms are created during the **Planning phase** (to pre-specify variables). The **Export Center** (Project Settings) allows downloading screening decisions, PRISMA data, RoB tables, and the full study library in multiple formats.



Figure 5: Export Center – one-click downloads for PRISMA, risk of bias, and study data.

✅ **Key takeaway:** RevProHub provides a unified environment that implements best practices of evidence synthesis: protocol to publication, real-time collaboration, AI assistance, and transparent conflict resolution.

📌 Module 2 Reflection & Integration

- How do structured frameworks (PICO/PICo/PCC) improve the precision of a review question?
- Why is protocol registration (PROSPERO/OSF) essential for credibility?
- What advantages does a full-service platform like RevProHub offer over disconnected tools?
- Explain the practical benefit of the “Mediator” role in reducing bias during screening conflicts.

🎓 **Next steps:** After mastering RevProHub navigation, participants will advance to protocol drafting and structured search translation using AI-powered tools inside the Planning phase.

Session 2.6.9: Planning Phase in RevProHub

Blueprint stage | 90 min (lecture + hands-on) | Protocol · Eligibility · Tools

📌 Overview: Planning Phase Workflow

The **Planning Phase** is where you define the methodological blueprint of your systematic review. It ensures that every decision is pre-specified, from search strategy to synthesis. Access the Planning dashboard via: **Project Dashboard → Planning Phase**.

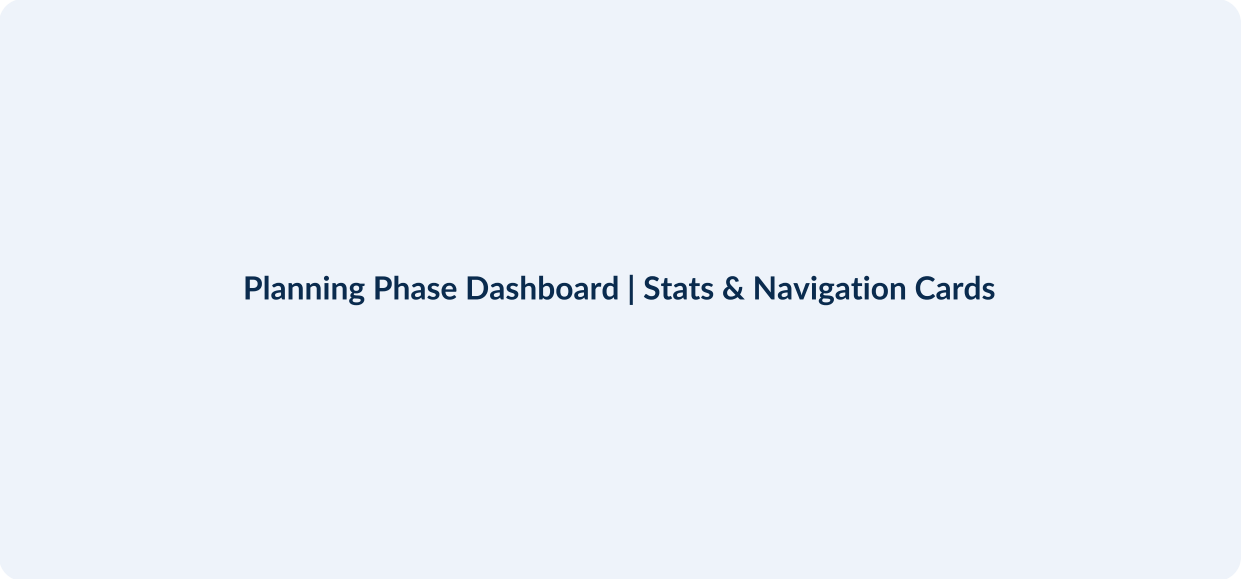


Figure 1: Planning dashboard – stats cards provide snapshot of protocol status, forms, and study library.

Components of Planning Stage Dashboard

- Protocol Status: Draft/Published
- Extraction Forms (N)
- Total QA Tools (N)
- Unique Studies (N)
- T/A Screening Progress
- Pending Conflicts / Duplicates

📄 **1. Protocol Development**
Draft, review, finalize protocol.
🔗 Manage Protocol

❓ **2. Research Questions & Eligibility**
PICO/PCC frameworks; used for AI search & screening.
🔗 Questions & Eligibility Framework

📚 **3. Reference Library**
Bibliographic references for citations.
🔗 Go to Library

🔍 **4. Search & Query Management**
Develop & translate queries, direct database search.
🔗 Manage Queries

⭐ **5. Quality Appraisal Form**
RoB & methodological quality tools.
🔗 QA Form Planning

📊 **6. Extraction Form Planning**
Design forms for consistent data collection.
🔗 Data Form Planning

2.6.9.1 Protocol Management

Navigate to **Planning → Protocol Dashboard**. Here you create, edit, version, and export your review protocol (PRISMA-P aligned).

➕ Create New Protocol

1. Click **“Create New Protocol”** from Protocol Dashboard.
2. Fill in Protocol Title, Authors & Affiliations, and summary of Introduction/Methods.
3. Click “Create protocol” → redirected to the Protocol Editor.

The platform allows only one active protocol per project, but you can create multiple **versions** (v1, v2, etc.) to track changes transparently.

Protocol Editor & Key Actions

In the editor you will see: **Last saved status, action buttons, citation manager sidebar, and auto-injected content**.

Create new version | + Add Custom section | Save all | Export (DOCX/PDF)

- **Auto-injected sections:** Eligibility Framework & Research Questions (once defined) appear automatically.
- **Citation management:** Right sidebar shows “Available References” → select references & click “Insert selected” to cite studies already imported into the project.
- Auto-save every 30 seconds + manual Save all.



Figure 2: Protocol editor – research questions and PICO framework injected from Eligibility module.

View & Version Control

Click “View” on any protocol version. The view page displays: Authors, Abstract, Introduction, Methods, References, Appendices (Search Strategies & Review Questions). The right panel shows **Version, Status (Draft/Published), Created/Last Updated metadata, and export options**.

2.6.9.2 Eligibility Criteria & Research Questions

Access via **Planning Phase Dashboard → Questions & Eligibility Framework**. This area is critical because it feeds the AI Search Builder, the screening interface, and your protocol.

🧠 **Why this matters:** Eligibility frameworks (PICO, PICo, PCC) defined here are automatically pushed to the **AI Query Builder**, enabling semi-automatic translation into PubMed/Hinari syntax. They also appear in the screening module to guide reviewers.

A) Defining Eligibility Criteria & Frameworks

Steps:

1. Click **"Add Framework"** inside the "Eligibility Criteria" tab.
2. Enter Framework Title/Name (e.g., "Effectiveness of beta agonists on weight").
3. Choose Framework Type: **PICO, PICo, PCC, PIRD** – the form adapts accordingly.
4. Fill constructs: Population, Intervention, Comparator, Outcome (or Concept/Context).
5. Define General Criteria: Study/Source Types (RCT, Cohort, Qualitative…), Language, Start/End Year.
6. Click **"Save Framework"**.

Once saved, the dashboard displays the framework details, e.g.:

```
[PICO] Population: Patients | Intervention: Beta agonist | Comparator: Standard care | Outcome: Weight reduction
```

Study Types: RCT, Cross-sectional | Language: English | Years: 2015-2025.

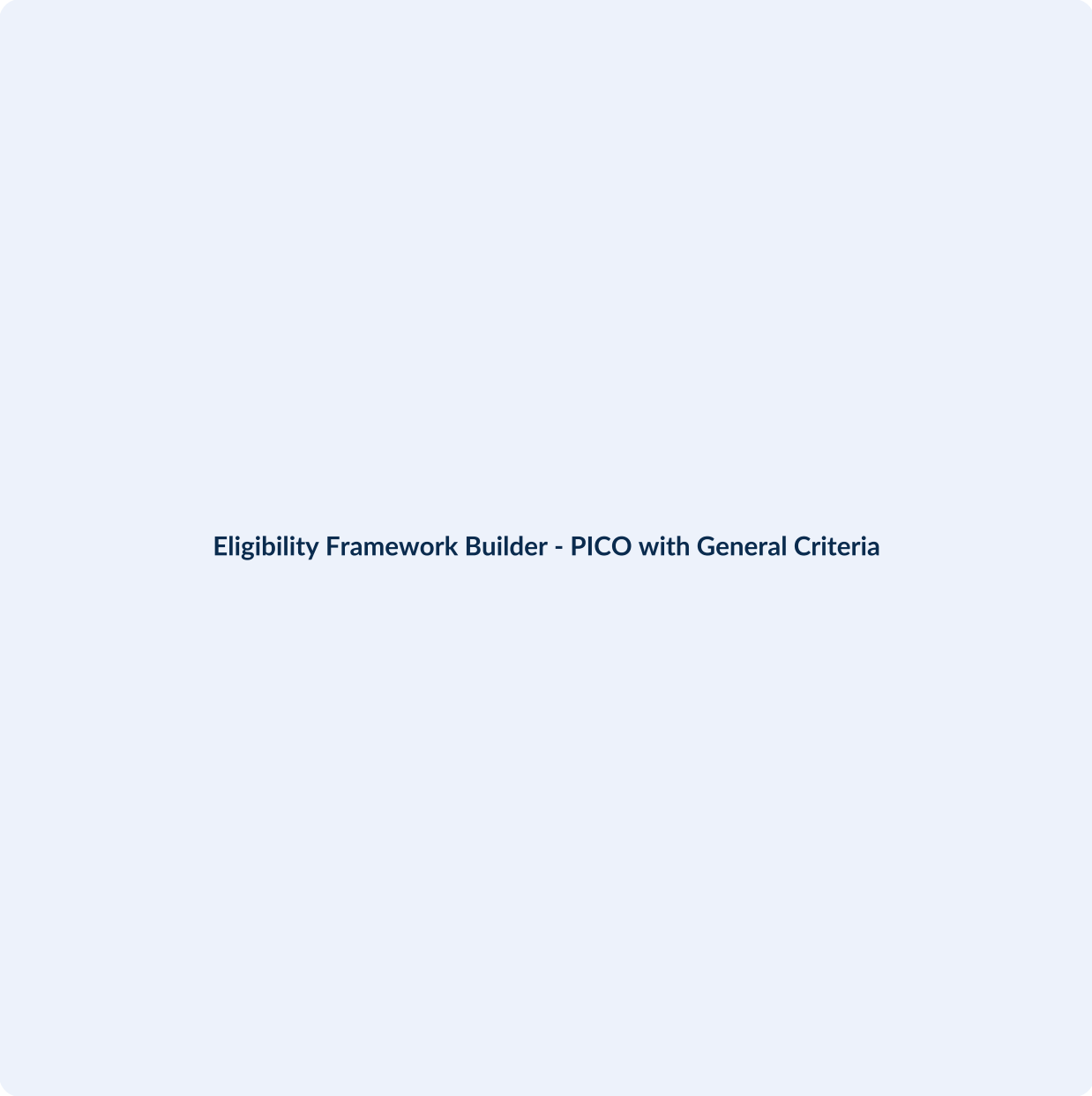


Figure 3: Adding a new PICO framework – will be used for search, screening, and protocol.

B) Research Questions (Main & Sub-questions)

Switch to the **“Research Questions”** tab. This module links directly to the framework you just created.

1. Click **“Add Questions”**.

2. Select Question Type: **Main Question** or **Sub-Question**.

3 Write the Question Text (e.g., “What is the impact of beta agonist agents on weight reduction among diabetic patients?”).

4 **Link to Framework** (optional but recommended): choose the framework title from the dropdown – this connects the question to PICO/PICo elements.

5 Click **Save Questions**.

After creation, the main question appears with the linked framework, and sub-questions can be added similarly.

🔁 **Auto-injection:** Both eligibility criteria and research questions are automatically injected into the **Protocol Editor** and later into the **Manuscript Writer**.

💻 🧪 **Hands-On Activity: Planning Phase Discovery (25 min)**

1. **Access Planning Dashboard:** Open your previously created project (e.g., “[Your Name] Pilot Review”) → click on **Planning** from the project overview.
2. **Explore stats cards:** Identify Protocol Status, number of QA/Extraction forms, and study counts.
3. **Define an Eligibility Framework:** Go to **“Research Questions & Eligibility”** → Add Framework. Use a simple PICO based on your topic (e.g., Population: pregnant women; Intervention: nutrition education; Comparator: standard care; Outcome: birth weight). Save it.
4. **Create a Main Research Question:** Switch to “Research Questions” tab → Add Question → select Main, write a question, link to the framework you just created.
5. **Protocol auto-injection verification:** Navigate to **Planning → Protocol Dashboard** → open your protocol (or create a draft protocol if not yet). See how the research question and PICO table are automatically displayed inside the protocol editor.
6. **Export protocol draft:** Inside the protocol editor click “Export” → download PDF to see how the eligibility content appears in the appendices.

Debrief & reflection:

- Why is it important to link research questions with an eligibility framework?

- How does the auto-injection of frameworks into protocol save time and reduce errors?
- What additional information in the “General Criteria” (Study types, year limits) helps downstream screening?

🛠️ Tool Planning: QA & Extraction Forms (Preview)

Within the Planning phase, you can design custom **Quality Appraisal Forms** (RoB 2, Newcastle-Ottawa, or JBI checklists) and **Data Extraction Forms**. For qualitative syntheses, use the **Repeater Field (1-to-Many)** to allow multiple findings per study – essential for meta-aggregation.

🔁 **Repeater logic highlight:** When creating an extraction form, toggle “Repeater group” on fields like “Theme/ Finding” and “Illustrative Quote”. Reviewers can then click “Add another row” to extract unlimited qualitative findings from one study.



Figure 4: Designing a data extraction form with 1-to-many repeater rows (critical for qualitative synthesis).

Planning Phase Mastery Check:

✔ Protocol created with versioning and auto-injected eligibility criteria.

✔ Eligibility frameworks (PICO/PICo) defined and linked to research questions.

✔ Understanding that frameworks drive AI search builder, screening interface, and final manuscript.

✔ Awareness of extraction form repeater logic for complex qualitative data.

Once the Planning Phase is complete, the project is ready to move into **Conducting (screening, appraisal, extraction)**, where the defined criteria and forms will guide every decision.

→ **Next session:** Search & Query Management – using AI chat to translate PICO into validated search strings across 10+ databases.

Session 2.6.10: Search & Query Management

AI Builder + Chat Refinement | Refinement Chat Room | 90 min (lecture + hands-on)

10+ Database Translation

> 🚀 **Key Features: Full AI Integration**
> Unlike traditional tools where syntax translation is manual or "not fully automatic," RevProHub now features an **AI-Powered Query Builder** and an interactive **Refinement Chat Room** that allows you to iteratively improve your searches using natural language. The AI translates your PICO/PICo framework into validated syntax for PubMed, Scopus, Embase, Web of Science, CINAHL, Cochrane, LENS, HINARI, and more.

📌 Search & Query Management Dashboard

Navigate to **Planning → Search & Query Management**. This dashboard centralizes everything: from building master queries to translating across databases and executing searches.

Your Eligibility & Research Question Summary

Main Research Question: What is the impact of beta agonist agents towards weight reduction among diabetic patients?

Primary Framework: PICO - Pico

- **Population (P):** Patients
- **Intervention (I):** Beta agonist
- **Comparator (C):** Standard treatment
- **Outcome (O):** Weight reduction

> This eligibility framework is automatically fed into the **AI Strategy Assistant** – no manual re-entry needed.

📋 Default Strategy – Auto-Injected Queries

#1: Master Query (Planning AI)

Source: Planning AI Built | Saved: Apr 6, 2026, 05:05 PM

```
("diabetes mellitus"[mesh] OR "diabetic patients"[tiab] OR "diabetes"
[tiab] OR "diabetics"[tiab]) AND ("beta-adrenergic agonists"[mesh] OR
"beta agonist*"[tiab] OR "beta-adrenergic agonist*"[tiab] OR "beta-
agonist*"[tiab] OR "beta-adrenoceptor agonist*"[tiab]) AND ("weight loss"
[mesh] OR "weight reduction"[tiab] OR "weight loss"[tiab] OR "body weight
changes"[tiab] OR "body mass index"[tiab] OR "BMI"[tiab] OR "obesity"
[tiab])
```

Search Performance: Database: pubmed | Total Found: 55 | Last Executed: Apr 6, 2026, 05:09 PM

#2: PubMed (AI Translated)

Source: AI Translated | Saved: Apr 6, 2026, 05:07 PM

```
("diabetes mellitus"[MeSH Terms] OR "diabetic patients"[Title/Abstract]
OR "diabetes"[Title/Abstract] OR "diabetics"[Title/Abstract]) AND ("beta-
adrenergic agonists"[MeSH Terms] OR "beta agonist*"[Title/Abstract] OR
"beta-adrenergic agonist*"[Title/Abstract] OR "beta-agonist*"
[Title/Abstract] OR "beta-adrenoceptor agonist*"[Title/Abstract]) AND
("weight loss"[MeSH Terms] OR "weight reduction"[Title/Abstract] OR
```

```
"weight loss"[Title/Abstract] OR "body weight changes"[Title/Abstract] OR
"body mass index"[Title/Abstract] OR "BMI"[Title/Abstract] OR "obesity"
[Title/Abstract])
```

No execution summary recorded – ready to execute.

AI Strategy Assistant & Refinement Chat Room

AI Strategy Assistant • Online

Ask me to refine your search: "Add terms for Africa", "Limit to RCTs", "Narrow the population", "Exclude pediatric studies"...

> **Refinement Chat Room – Iterative Improvement**
>
> Type natural language requests (e.g., "Restrict to studies published after 2018" or "Add 'glucagon-like peptide-1' as an alternative intervention"). The AI instantly updates the master query and shows differential changes. This closed-loop refinement ensures your search evolves based on real performance metrics.

```
Example user input: "Add search terms for 'low-income settings' and
limit to RCTs"
AI response: Updated query: ... AND ("randomized controlled trial"
[pt] OR "RCT"[tiab]) AND ("developing countries"[mesh] OR "low-income"
[tiab])
```

> The Refinement Chat Room remembers your framework and prior iterations, allowing **real-time collaborative tuning** – a major upgrade from static query building.

Query Builder & Translator (Full Suite)

The platform provides two integrated methods: **AI-Powered Translator** (recommended for accuracy + speed) and **Rule-Based (Regex) Translator** as fallback.

Step 1: Build Master Query

1 Use the **Short Form Builder** to add terms with field tags (MeSH Term, Title/Abstract, Text Word, Author). Combine with AND/OR/NOT.

2 Click **“Build Master Query”** to generate the string, or directly paste/edit in the Master Query box.

3 **AI-Powered Builder (From Research and Framework)**: One-click generation from your PICO/PICo eligibility criteria – creates a validated starting query.

PubMed Scopus Web of Science Cochrane CINAHL

PsycINFO Embase LENS HINARI

Step 2: Translate & Export – AI-Powered (NEW)

AI-Powered Translator (Fully Automatic)
Unlike older systems where translation required manual syntax adjustment, RevProHub’s AI automatically converts your master query into the precise syntax for **10+ databases**, including field mapping (MeSH ↔ Emtree), capitalization rules (LENS.org), and proximity operators. Each translated query appears with copy, download, and save options.

Step 3: Execute Database Search

1 Select a database (e.g., PubMed).

2 Paste the translated query (or use the "Use for Search" button from a translated card).

3 Click **“Execute Search”** – results appear with paginated list: title, authors, journal.

4 Select studies via checkboxes and click **“Import”** to add to your project library.

For large result sets, the **Search Results Summary** provides analytics: Publications by Year, Top Journals, Top Keywords, and Publication Types – helping you refine further using the chat room.

Project Saved Queries & History

#	Saved Query	Source	Saved At	Actions
1	`(mesh_term.mesh_heading:("Diabetes Mellitus") OR ...`	ai_translated	4/6/2026, 8:07:42 PM	
2	`("diabetes mellitus"[MeSH Terms] OR ...`	ai_translated	4/6/2026, 8:07:40 PM	
4	`("diabetes mellitus"[mesh] OR "diabetic patients"[tiab] ...`	planning_ai_built	4/6/2026, 8:05:41 PM	

Click **Load** to restore any saved query into the Master Query box for re-translation or refinement via chat.

🧪 Hands-On Activity: AI-Powered Search Builder (30 min)

1. **Navigate to Search module:** Within your project → Planning → Search & Query Management.
2. **Review auto-injected framework:** Verify your PICO/PICo eligibility from previous session appears in the Eligibility Summary.
3. **Generate master query using AI:** Click **“AI-Powered Builder (From Research and Framework)”** – observe how the system populates the Master Query box using field tags.
4. **Open Refinement Chat Room:** Type a refinement request: e.g., “Limit to studies published between 2018-2025” or “Add ‘liraglutide’ as an alternative intervention”. Watch the AI update the query string dynamically.
5. **Translate to multiple databases:** In the translator section, select PubMed, Embase, and Scopus. Click **AI-Powered Translate**. Review the three translated queries – note syntax differences (MeSH vs Emtree).

6. **Execute a search in PubMed:** Copy the translated PubMed query → paste in “Execute Database Search” → click Execute. Review results count and import the first 5 records into your library.
7. **View Search Summary:** Click “View Results Summary” – examine the year distribution and top journals. Use the chat room to ask: “What keywords appear most frequently in excluded studies?”

Debrief & discussion:

- How does the Refinement Chat Room differ from traditional iterative editing of search strings?
- What is the advantage of automatic syntax translation across 10+ databases?
- How can the Search Results Summary (publication year, top keywords) inform further refinement before final study import?

Complete Search Workflow

1️⃣ Eligibility Framework (PICO) ➡️ 2️⃣ AI Master Query Builder ➡️

3️⃣ Refinement Chat Room (Iterative) ➡️ 4️⃣ AI Translation (10+ DBs) ➡️

5️⃣ Execute & Import ➡️ 6️⃣ PRISMA-ready documentation

✔️ **Reproducibility guarantee:** Every query version, translation, and chat refinement log is saved in the project history, ensuring full transparency for reporting in the final manuscript (appendices).

🔁 **What changed from previous guides?**
❌ **Old:** "Syntax translation is not fully automatic – workspace to manually adapt."
✅ **New (RevProHub):** AI-Powered Query Builder + Refinement Chat Room + fully automatic translation to 10+ databases. The AI suggests improvements based on search performance metrics, dramatically reducing time and error.

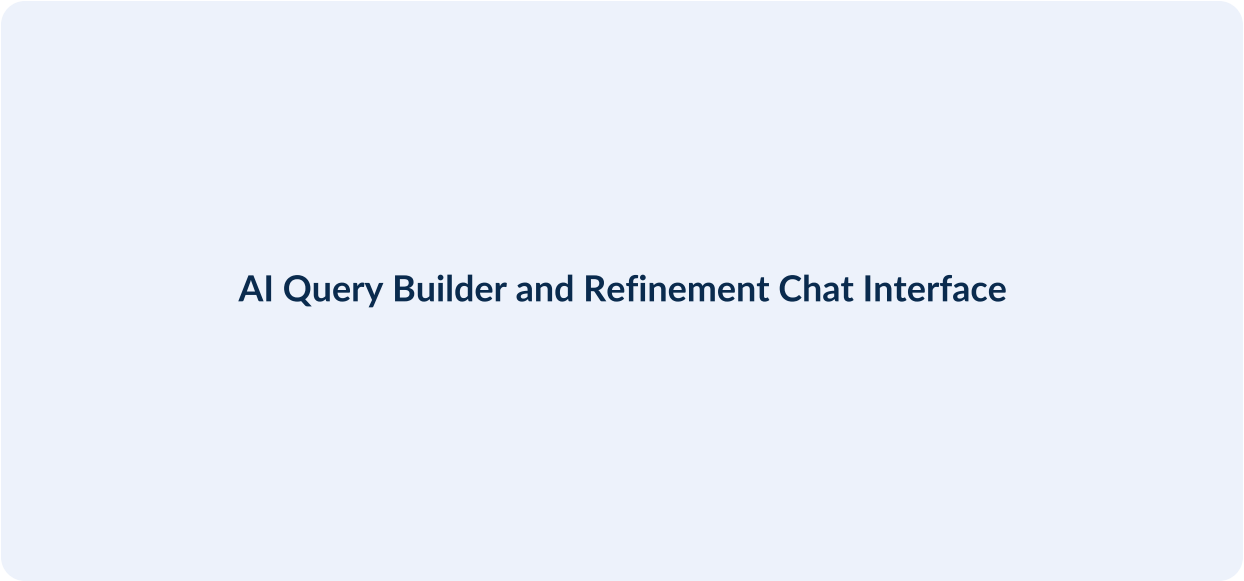


Figure: AI Strategy Assistant with Refinement Chat – real-time, iterative search development.

Session 2.6.11: Quality Appraisal Form Planning

Risk of Bias Tools | 45 min | 24+ Standard Templates

📋 Quality Assessment Tools Dashboard

Design custom tools or select from **24+ standard templates** (JBI, Cochrane ROBINS-I, ROB 2, Newcastle-Ottawa, etc.) to assess methodological quality and risk of bias of included studies.

Tool Name	Domains	Created By	Actions
ROBINS-I (Risk Of Bias In Non-randomized Studies - of Interventions) A tool for assessing risk of bias in non-randomized studies comparing health effects of two or more interventions.	7	Admin	
Cochrane RoB 2 (RCTs) – 2023 Revised tool for randomized controlled trials covering randomization, deviations, missing data, outcome measurement, and selective reporting.	5	System	

1 Click **"Add New Tool"** → choose starting point: **Select a standard template** or build from scratch.

2 Provide Tool Name (e.g., "JBI Critical Appraisal for RCTs") and optional Description.

3 **Define Domain Rating Scale Options:** e.g., Low Risk, Some Concerns, High Risk, No Info. Attach icon suggestions for visual clarity.

4 **Define Overall Judgment Scale:** e.g., Grade A (High Certainty), Grade B (Moderate Certainty), Grade C (Low Certainty).

5 Add Assessment Domains with custom text, category, appraisal level, guidance, and optional sub-domains.

Example: Editing ROBINS-I Tool

ROBINS-I (Risk Of Bias In Non-randomized Studies - of Interventions)

Domain 1: D1: Bias due to confounding –

Consider whether the most important confounding domains were controlled for in design or analysis.

Domain 2: D2: Bias in selection of participants into the study

Domain 3: D3: Bias in classification of interventions

Domain 4: D4: Bias due to deviations from intended interventions

Domain 5: D5: Bias due to missing data

Domain 6: D6: Bias in measurement of outcomes

Domain 7: D7: Bias in selection of the reported result

Low Some concerns High

Overall Judgment Scale: Grade A: High Certainty | Grade B: Moderate Certainty | Grade C: Low Certainty

Export options: Each QA tool can be exported as DOCX, PDF, or CSV for external documentation or protocol appendices.



Figure 1: Creating a custom QA tool – domain structure and rating scales.

Session 2.6.12: Extraction Form Planning

Data Extraction | 1-to-Many Repeater Logic | 60 min

📊 Data Extraction Forms Dashboard

Design structured forms to ensure consistent data collection across all included studies. For **qualitative meta-aggregation**, use the **Repeater Field** to capture multiple findings per study.

Form Name	Description	Fields	Last Updated	Actions
Meta-Analysis of Effectiveness - Count Data (e.g., RCTs)	For extracting data from studies comparing two groups to calculate effect size.	11	4/6/2026	
Qualitative Synthesis - Meta-Aggregation with Repeater	Extract themes, categories, and illustrative quotes using 1-to-many repeater rows.	8 (+ repeater group)	4/10/2026	

1. Click **"Create New Form"** → enter Form Name and Description.
2. Optionally start from a template (blank or pre-defined structure).
3. **Add fields**: Field Label, Field Name (machine-friendly), Field Type (Text, Textarea, Number, Dropdown, Date, Checkbox).
4. **Toggle "Repeater?" to YES** for fields that require 1-to-many entries (e.g., multiple qualitative findings per study).
5. Save form – it becomes available for reviewers during the Conducting phase.

🔁 ⭐ **Major Feature: 1-to-Many Repeater Logic for Qualitative Evidence**
In qualitative systematic reviews (JBI meta-aggregation), a single study may contribute multiple themes, categories, or findings. The **Repeater Field** allows reviewers to click **"Add Another Row"** to extract unlimited findings from one source. When you design an extraction form, set the field type as *Repeater Group* – inside it, include fields like "Theme Name", "Illustrative Quote", "Participants' Voice", and "Level of Credibility". The system will group these during synthesis.

Edit Extraction Form Example

Form: Meta-Analysis of Effectiveness - Count Data (e.g., RCTs)

Order 1	Study Author & Year (Text) – Repeater? No
Order 2	Study Design (Text) – Repeater? No
Order 3	Intervention Group Description (Textarea) – Repeater? No
Order 4	Intervention Group Sample Size N1 (Number)
Order 5	Intervention Group Events n1 (Number)
Order 6	Control Group Sample Size N2 (Number)
Order 7	Control Group Events n2 (Number)
Order 8	Control/Comparator Group Description (Text)
Order 9	Outcome Measure Description (Text)
Order 10	Follow-up Period (Text)
Order 11	Notes (Textarea)

Creating a Repeater Group for Qualitative Synthesis

🔁 REPEATER GROUP ENABLED

Field Label: Qualitative Findings (Repeater Group)

Inside Repeater – fields that can be repeated multiple times per study:

- **Theme/Category Name** (Text) – e.g., "Barriers to adherence"
- **Illustrative Quote** (Textarea) – verbatim quote from participants
- **Credibility Rating** (Dropdown) – Unequivocal / Equivocal / Unsupported
- **Country / Setting** (Text)

> 👆 During extraction, reviewers click **"Add Another Row"** to insert a new set of fields for each unique finding.



Figure 2: Designing a data extraction form with 1-to-many repeater rows – critical for qualitative evidence synthesis.

👁 Form Preview & Validation

Preview: Meta-Analysis of Effectiveness - Count Data

Study Author & Year: e.g., Smith et al. 2022

Study Design: RCT, Cohort, etc.

Intervention Group Sample Size (N1): n

Control Group Events (n2): events

ℹ For **qualitative repeater forms**, reviewers see a dynamic "Add Another Finding" button below each study.

📌 **Two-Phase Extraction (Study Characteristics + Outcome Data)**

RevProHub now supports separation of static study characteristics (author, year, design) from repeatable outcome data (effect sizes, events, qualitative findings). This ensures cleaner datasets for meta-analysis or thematic synthesis.

🧪 Hands-On Activity: Tool Planning (QA & Extraction) – 35 min

1. **Create a QA tool:** Navigate to **Planning → Quality Appraisal Form Planning**. Click "Add New Tool". Select a template (e.g., "Cochrane RoB 2 for RCTs"). Name it "My RoB2 Training Tool". Add domain rating scale (Low / Some concerns / High) and overall judgment (High certainty / Moderate / Low). Save.
2. **Add a custom domain:** Edit the tool → Add a new domain: "D6: Blinding of outcome assessment" with guidance text. Save changes.
3. **Create an Extraction Form with Repeater:** Go to **Extraction Form Planning** → Create New Form. Name: "Qualitative Synthesis - Themes". Add fields: "Study ID" (Text), "Country" (Text), then add a **Repeater Group**. Inside the group add: "Theme Name" (Text), "Illustrative Quote" (Textarea), "Credibility" (Dropdown with options: High/Moderate/Low). Set Repeater = YES for the group.
4. **Preview the form:** Click "View Form" to see how reviewers will see the "Add Another Row" button.
5. **Export the QA tool:** From QA Tools dashboard, click export (PDF) – observe how domains and rating scales are formatted.

Debrief Questions:

- Why is the Repeater logic essential for qualitative evidence synthesis compared to traditional flat extraction forms?
- How does pre-defining domain rating scales improve consistency across multiple reviewers?
- What is the advantage of separating Study Characteristics from Outcome Data (two-phase extraction)?
- How do these planning tools (QA + extraction) link to the later Conducting phase modules?

🔗 **Integration with Protocol & Conducting:** QA and extraction forms created in the Planning phase are automatically available during the Conducting phase (Quality Appraisal and Data Extraction stages). Changes to forms after extraction begins are restricted to maintain data integrity – so plan carefully.

Two-Phase Extraction Architecture:
Phase 1 – Study Characteristics (static, extracted once per study): Author, Year,

> Country, Design, Funding source.
> **Phase 2 – Outcome Data / Qualitative Findings** (repeatable): Effect sizes, confidence intervals, themes, quotes. This separation enables efficient subgroup analysis and meta-aggregation.

 Next session transition: After completing tool planning (QA + extraction), the project moves to the **Conducting Phase** where these instruments are deployed for risk of bias assessment and data extraction.

→ **Next session:** Importing Studies, Deduplication, and Preparing for Screening (Conducting Phase).

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Practical Session: Identification & Importing Sources

Study Importer | 25+ Predefined Sources | 60 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Study Importer Dashboard
- Import studies from multiple file formats (RIS, CSV, JSON, BibTeX, XML, TXT)
- Conduct direct database searches using the Search & Query Builder
- Add manual study entries for grey literature or unpublished data
- Create custom import sources for specialized searches
- Update existing studies via CSV bulk import
- Export the complete study library for backup or external use
- Navigate to Deduplication and Studies Library for next steps

Part 1: Study Importer Dashboard

Navigate to: **Main Project Dashboard → Conducting Phase → Studies → Importer Dashboard**



Import & Discover
Upload files or search databases



Maintain & Organize
Deduplication, manual entries, updates



PubMed
77 studies imported



Studies Library
View all imported references

📁 **Supported File Formats:** CSV, JSON, RIS (Reference Manager), BibTeX (.bib), XML, Plain Text (.txt). Max file size: 10MB.

🔍 **Direct Database Search:** Integrates with Search & Query Management – build and execute validated queries across 10+ databases.

Part 2: Predefined Import Sources

RevProHub comes preloaded with 25+ academic databases and search sources. Each source can be selected when importing or manually adding studies.

Database Categories:

- **Academic Databases:** PubMed, Scopus, Web of Science, Embase, Cochrane Library, CINAHL, PsycINFO
- **Regional & Open Access:** AJOL, HINARI/Research4Life, EuroPMC, Semantic Scholar, The Lens
- **Grey Literature & Registers:** WHO Clinical Trials, Grey Literature, Registers, Google Scholar
- **Citation Tools:** Citation Chaser, Connected Paper, Research Rabbit
- **Manual Sources:** Custom Sources, Hand Search, Organization, Other

Source Type Badges: database register website citation manual

Part 3: Import Methods – Step-by-Step

Method 1: Import from File

1 Click "**Import from File**" dropdown → select format (CSV, JSON, RIS, BibTeX, XML, TXT).

2 Select the target import source from the predefined list (e.g., PubMed, Scopus).

3 Upload the file containing citations exported from your reference manager or

database.

4 System processes and adds studies to your library with source attribution.

Pro Tip: Export citations from EndNote, Zotero, or Mendeley in RIS format for seamless import into RevProHub.

Method 2: Direct Database Search

1 Click "**Direct Database Search**" button → redirects to Search & Query Builder.

2 Build or load a saved search query (using PICO from Planning Phase).

3 Execute search against selected database (PubMed, Scopus, Embase, etc.).

4 Select results and import directly into project library.

AI Integration: The Search Query Builder uses AI to translate PICO questions into validated database syntax. Refinement Chat Room allows iterative search improvement.

Method 3: Add Manual Entry

1 Click "**Add Manual Entry**" button → opens modal form.

2 Select import source (e.g., Grey Literature, Hand Search, Organization, Custom Sources).

3 Fill in bibliographic details: Title (required), Authors, Year, Journal/Source, DOI, Abstract.

4 Click "**Add Entry**" – study appears in library with source attribution.

Use Case: Perfect for unpublished reports, conference proceedings, clinical trial registrations, or studies obtained through personal communication.

Part 4: Maintain & Organize Your Library

Manage Duplicates
Scan, detect, and resolve duplicate records

Update via CSV
Bulk update existing study metadata

Export All
Download full library as CSV

+ Add Custom Source
Create project-specific import sources

Deduplication Workflow

1 Navigate to "**Manage Duplicates**" from Importer Dashboard or Actions menu.

2 System automatically scans for potential duplicates based on title, DOI, and author similarity.

3 Review duplicate groups side-by-side → select master record → confirm duplicates.

4 Mark as unique if records are not duplicates.

Duplicate Status: Each study in the library shows "Unique", "Potential Duplicate", or "Duplicate" badge for easy tracking.

Bulk Update via CSV

1. Click "**Update via CSV**" from Actions dropdown.
2. Download sample update CSV template for column reference.
3. Edit CSV – each row must have `study_id` or `doi` to match existing records.
4. Upload updated CSV – system applies changes to matched studies only.

✅ **Updatable fields:** title, authors, publication_year, journal_name, abstract_text, and more.

Part 5: Studies Library – Complete Reference Management

Navigate to: **Importer Dashboard → Go To Studies Library** or **Actions → Studies Library**

Library Features:

- **Search & Filter:** Real-time search by title or author, sort by any column (ID, Title, Authors, Year, Source, Deduplication Status, TA/FT Status).
- **Bulk Actions:** Select multiple studies → delete selected (confirmation modal with study titles).
- **Pagination:** 25, 50, 100, or All entries per page.
- **Study Details:** Click "View" button to see full metadata, abstract, keywords, screening decisions, and full-text document uploads.
- **External Actions:** Quick links to Data Extraction and Quality Assessment from the library (conditional on screening status).

ID	Title	Authors	Year	Source	Deduplication	TA Status	Actions
5996	Comparison of Clinical Efficacy... Tirzepatide, Liraglutide and Semaglutide	Ciudin A et al.	2026	PubMed	Unique	Awaiting Screening	View Delete
5995	Genetic Evidence for GLP1R Agonists in Non-Ischaemic Heart Failure	Le NN et al.	2026	PubMed	Unique	Awaiting Screening	View
5888	Weight Loss Outcomes in a Real-World Setting	Bailey B et al.	2020	Embase	Unique	Included	View Extract

Part 6: Study Details Page

Comparison of Clinical Efficacy and Safety of Tirzepatide, Liraglutide and Semaglutide...

Ciudin A; Sapin H; Fan L; Dimitriadis GK; Zimner-Rapuch S; Curteis T; Clark LJ; Rubinstein M; Johansson E | Advances in therapy (2026)

Abstract

Recent pharmacological options for weight management include GLP-1 receptor agonists... tirzepatide 10 and 15 mg associated with improved efficacy vs liraglutide... weight reduction outcomes...

Keywords:

Glucagon-like peptide Network meta-analysis Obesity Tirzepatide Weight reduction

Bibliographic Details

DOI: 10.1007/s12325-026-03523-5
Import Source: PubMed
Imported By: shamsuamme
Imported At: 3/28/2026

Review Status

Deduplication: Unique
TA Status: Awaiting Screening
FT Status: Awaiting Screening
Extraction: Not Started
QA: Not Started

Full-Text Documents: Upload PDFs directly to studies. Supports multiple documents per study with descriptions.

✏️ **Edit Study:** Click "Edit Study" button to update metadata directly from the details page.

Part 7: Creating Custom Import Sources

1 Click "**Add Custom Source**" button in Import Sources section.

2 Enter Source Name (e.g., "Local Journal Archive", "Institutional Repository").

3 Add optional Description (e.g., "Searched on [date] for unpublished theses").

4 Save – custom source appears in source selector for manual entries and imports.

Source Types: Predefined databases have "database" badge; custom sources get "manual" badge for easy identification.

Part 8: Export All Studies

📤 Click "**Export All**" button (Actions dropdown or Maintain & Organize card).

📄 System generates CSV containing all study metadata (ID, title, authors, year, source, deduplication status, screening status).

💾 Use for backup, external analysis, or sharing with collaborators.

🧪 Group Hands-On Activity: Importing Sources (40 min)

1. **Access Importer Dashboard:** In your training project, go to Conducting Phase → Studies → Importer Dashboard.
2. **Review Predefined Sources:** Scroll through the list of 25+ sources. Note the different badges (database, register, manual, citation).
3. **Import from RIS File:** Download a sample RIS file from PubMed (export 5-10 citations). Click "Import from File" → RIS → select source "PubMed" → upload → import.
4. **Add Manual Entry:** Click "Add Manual Entry". Select source "Grey Literature". Add a hypothetical unpublished report title, authors, year, and abstract. Save.
5. **Create Custom Source:** Click "Add Custom Source". Name it "Training Custom Source" with description "For practice imports". Save and verify it appears in the source list.
6. **Navigate to Studies Library:** Click "Go To Studies Library". Verify imported studies appear. Test search by title keyword.
7. **Export Library:** Click "Export All" → download CSV. Open in Excel to review exported data.
8. **Update via CSV (optional):** Download sample update CSV template. Edit one study's title. Upload to test update functionality.
9. **Navigate to Deduplication:** Click "Manage Duplicates" – review any potential duplicate groups (if multiple imports performed).

Debrief Questions:

- What are the advantages of using predefined sources vs. manual source selection?
- When would you use a manual entry instead of file import?
- How does the custom source feature help with grey literature searching?
- Why is tracking import source important for systematic review transparency?
- How does the CSV update feature help maintain library accuracy over time?

Part 9: Integration with Review Workflow

From Import to Screening:

- 1️⃣ **Import Studies** (this session) → Studies added to library with source attribution
- 2️⃣ **Deduplication** → Remove duplicate records, mark unique studies

- 3️⃣ **Screening Dashboard** → Studies appear in "Pending Assignment" for Title/Abstract stage
- 4️⃣ **Assign Reviewers** → Studies distributed to team members
- 5️⃣ **Screening** → Include/Exclude decisions made, conflicts resolved
- 6️⃣ **Quality Assessment & Data Extraction** → Included studies proceed

📋 Import Module Completion Checklist:

✔ Studies imported via at least one method (file, direct search, manual)
✔ Import source correctly attributed to each study
✔ Custom source created (if needed for grey literature)
✔ Library reviewed in Studies Library view
✔ Library exported as CSV for backup
✔ Deduplication reviewed and resolved
✔ Understanding of CSV update workflow for batch metadata corrections

→ **Next Practical Session:** Deduplication & Cleaning – resolving duplicate records before screening.

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Practical Session: Deduplication & Cleaning

Duplicate Detection & Resolution | Auto + Manual Resolution | 45 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Deduplication Dashboard and understand duplicate status types
- Run duplicate detection scans to identify potential duplicate records
- Resolve duplicates using automatic resolution or manual side-by-side comparison
- Mark records as Unique, Master Record, or Resolved Duplicate
- Export and import deduplication data for offline processing
- Understand how deduplication integrates with the screening workflow

Part 1: Deduplication Dashboard

Navigate to: **Main Project Dashboard → Conducting Phase → Studies → Deduplication**

77	0	0
Total Records Imported	Not Checked	Potential Duplicates

0	77
Resolved Duplicates	Unique Studies for Screening

Duplicate Status Definitions:

- Not Checked – Record not yet processed by duplicate detection
- Potential Duplicate – System-identified possible duplicate awaiting review

- Master Record – The primary/kept version of a duplicate set
- Resolved Duplicate – Confirmed duplicate, linked to master record
- Unique – Confirmed as the only copy of this study

Part 2: Three-Step Deduplication Workflow

Step 1: Detect Duplicates

Scan all records to flag potential duplicates

Run Detection Scan

Step 2: Resolve Duplicates

Auto-resolve or manual side-by-side comparison

Auto Resolution

Manual Resolution

Step 3: Proceed to Screening

Unique studies ready for title/abstract screening

Go to Screening Dashboard

🔍 **Detection Scan Logic:** RevProHub compares records by title similarity (fuzzy matching), DOI exact match, and author/year combinations. Potential duplicates are flagged for review without automatic deletion.

Part 3: Manual Resolution Interface

Navigate to: Deduplication Dashboard → Step 2 → "Go to Manual Resolution"

Duplicate Group: "GLP-1 Agonists for Weight Loss"

Record A (ID: 5996)
Title: Comparison of Clinical Efficacy of Tirzepatide, Liraglutide and Semaglutide...
Authors: Ciudin A et al.
Year: 2026
DOI: 10.1007/s12325-026-03523-5
Source: PubMed Select as Master

Record B (ID: 5890)
Title: Comparison of Clinical Efficacy of Tirzepatide, Liraglutide and Semaglutide...
Authors: Ciudin A; Sapin H; Fan L et al.
Year: 2026
DOI: (missing)
Source: Embase Select as Master

✅ **Resolution Options:**

- **Select Master Record:** Choose the most complete record to keep
- **Mark as Unique:** Confirm records are not duplicates
- **Merge:** Combine metadata from both records into master

🪄 **Auto-Resolution:** For large duplicate sets, RevProHub can automatically resolve by keeping the record with the most complete metadata (DOI present, longer abstract, more author details). Always review auto-resolved results before finalizing.

Part 4: Deduplication Studies Library

Navigate to: **Deduplication Dashboard → Bulk Deduplication** or click any stat card

📋 **Library Features:**

- **Bulk Actions:** Select multiple studies → Mark as Unique, Mark as Duplicate, or Reverse to Not Checked
- **Search & Filter:** Search by title, filter by duplicate status, sort by any column
- **Pagination:** 25, 50, 100, or All entries per page
- **Sortable Columns:** ID, Authors, Year, Title, Duplication Status

☐	ID	Authors	Year	Title	Duplication Status
☐	5996	Ciudin A et al.	2026	Comparison of Clinical Efficacy of Tirzepatide, Liraglutide and Semaglutide...	Potential Duplicate
☐	5890	Ciudin A; Sapin H et al.	2026	Comparison of Clinical Efficacy of Tirzepatide, Liraglutide and Semaglutide...	Potential Duplicate
☐	5888	Bailey B et al.	2020	Weight Loss Outcomes in a Real-World Setting	Unique

Part 5: Import/Export Deduplication Data

Navigate to: **Deduplication Dashboard → Import/Export Data**

Export All Data
Full project data with deduplication status + screening decisions

Export Imported Studies
Bibliographic info + deduplication status only

Import Studies Data
Update duplicate_status and duplicate_of_study_id via CSV

CSV Import Format Requirements:

- **Required column:** `study_id` (internal RevProHub ID)
- **Optional columns for deduplication:**
  - `duplicate_status`: Must be 'Not Checked', 'Potential Duplicate', 'Master Record', 'Resolved Duplicate', or 'Unique'
  - `duplicate_of_study_id`: The ID of the master record (if status is 'Resolved Duplicate')
- **Optional for screening decisions:** `user_id`, `stage` (TA/FT), `decision` (Include/Exclude/Maybe)

Part 6: Integration with Screening Workflow

1️⃣ Import studies → 2️⃣ Run duplicate detection → 3️⃣ Resolve duplicates → 4️⃣ Unique studies automatically appear in Screening Dashboard "Pending Assignment"

ℹ️ Only **Unique** and **Master Record** studies proceed to screening. Resolved duplicates are excluded from the screening queue to prevent double work.

🧪 Group Hands-On Activity: Deduplication & Cleaning (35 min)

1. **Access Deduplication Dashboard:** In your training project, go to Conducting Phase → Studies → Deduplication.
2. **Review Dashboard Stats:** Note Total Records Imported vs. Unique Studies for Screening (difference indicates duplicates).
3. **Run Detection Scan:** Click "Run Detection Scan". Wait for completion – system flags potential duplicates.
4. **Review Potential Duplicates:** Click "Potential Duplicates" stat card. Review the flagged records.
5. **Manual Resolution:** Click "Go to Manual Resolution". For each duplicate group:
   - Compare side-by-side metadata (title, authors, year, DOI, source)
   - Select the most complete record as Master Record
   - Confirm other records as Resolved Duplicate
6. **Alternative: Bulk Marking:** In the Deduplication Library, check multiple records → use bulk actions toolbar → "Mark as Unique" or "Mark as Duplicate".
7. **Export Deduplication Data:** Go to "Import/Export Data" → Export Imported Studies. Open CSV to view duplicate_status column.
8. **Verify Screening Queue:** Go to Screening Dashboard → Title/Abstract Stage → "Pending Assignment" count should reflect unique studies only.

Debrief Questions:

- Why is deduplication a critical step before screening?
- What are the risks of skipping duplicate detection?
- When would you choose manual resolution over auto-resolution?
- How does tracking duplicate_of_study_id maintain auditability?
- What metadata fields are most reliable for duplicate detection (DOI, title, author combinations)?

💡 Best Practices for Deduplication

Recommendations:

- Run detection scan after each major import batch (not just once at the end)
- Use DOI matching as the primary detection criterion when available
- For records without DOI, rely on title + author + year combinations

- When selecting a Master Record, prioritize records with: DOI present → complete abstract → correct author formatting
- Document your deduplication approach in the review protocol (which fields used, manual vs. auto)
- Export deduplication log for transparency in final report appendices

Deduplication Module Completion Checklist:

✔ Detection scan completed on imported studies
✔ All potential duplicate groups reviewed and resolved
✔ Master records selected for each duplicate set
✔ Unique status confirmed for non-duplicate records
✔ Unique study count verified matches screening queue total
✔ Deduplication data exported for documentation (optional)
✔ Ready to proceed to Title/Abstract screening

→ **Next Practical Session:** Screening & Selection – applying eligibility criteria to unique studies.

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Practical Session: Screening & Selection

Title/Abstract & Full-Text | AI-Assisted Screening | 90 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Screening Dashboard and understand two-stage workflow (Title/Abstract → Full-Text)
- Define and manage inclusion/exclusion criteria linked to PICO framework
- Assign reviewers and mediators for screening stages
- Conduct individual screening with AI-assisted decision suggestions
- Perform bulk screening actions for efficiency
- Identify and resolve conflicts using the Mediator role
- Export/import screening data and generate PRISMA flow diagrams

Part 1: Screening Dashboard

Navigate to: **Main Project Dashboard → Conducting Phase → Screening Dashboard**

Two-Stage Screening Workflow

Title & Abstract
Initial relevance check

Full-Text
Detailed eligibility assessment

Included Studies
Proceed to extraction

📊 **Title & Abstract Stage Stats Cards:** Pending Assignment, Awaiting Screening, Conflicts, Included, Excluded, Cohen's Kappa (inter-rater reliability)

📄 **Full-Text Stage Stats Cards:** Same metrics plus "Included (Final)" – studies passing both stages

🔗 **Navigation:** Click any stat card to drill down to the corresponding study list (e.g., Conflicts → pending conflicts list)

Part 2: Managing Screening Criteria

Navigate to: **Screening Dashboard → Manage Screening Criteria**

Eligibility Framework (Auto-injected from Planning Phase):

- **Population (P):** diabetic patients
- **Intervention (I):** GLP-1 Agonists (liraglutide, semaglutide)
- **Comparator (C):** standard care, placebo
- **Outcome (O):** weight reduction, weight loss, obesity management
- **Time Frame:** 2015-2025 | **Language:** English

Inclusion Criteria Example: "Correct primary outcome"
Exclusion Reasons Example: "Randomized Controlled Trial (RCT)" – studies can be excluded with reason tagging.

✏️ **Customizing Criteria:** Add/edit inclusion/exclusion criteria specific to your review. These appear as checkboxes in the screening interface.

Part 3: Assigning Reviewers & Mediators

Assignment Modal Features

Assign Tab:
Select reviewers for all pending studies in a stage (TA or FT). Add start/due dates.

Mediator Tab:
Assign mediators specifically to studies in **conflict** – not globally.

Un-assign Tab:
Remove reviewers from unscreened studies.

> 📧 **Automatic Notifications:** Assigned reviewers receive email alerts. Tasks appear in "My Assigned Screening" queue.

Part 4: Individual Screening Interface

Study Card Example

Glucagon-like peptide-1 agonists' effects on glycemic control, weight loss, and beta cells function in type 1 diabetes.
Mirghani HO, Albishi L, Alblewi SM | Frontiers in endocrinology (2026)

Abstract (excerpt):
Insulin is an effective treatment for type 1 diabetes mellitus (T1DM)... GLP-1 agonists achieved a higher reduction in weight, HbA1c... MD=-4.28, 95% CI -5.06 to -3.49... The total adverse events were higher in GLP-1 agonists.

AI Assistant Suggestion: Suggests Exclude (Confidence: 95%)
Reasoning: The study focuses on Type 1 Diabetes Mellitus (T1DM) patients, while the review targets Type 2 Diabetes (T2DM) in the context of obesity management. Population mismatch with PICO framework.
Was this helpful? Yes No

✓ Include (I) ? Maybe (M) ✕ Exclude (E) Accept AI Decision

Eligibility Framework (collapsible): Displays PICO criteria from Planning Phase for quick reference during screening.

Keyboard Shortcuts: I = Include, M = Maybe, E = Exclude, AI = Accept AI decision. Auto-save and navigation (Previous/Next) for efficient workflow.

Part 5: Bulk Screening Actions

Navigate to: **Screening Dashboard → Bulk Screening** or **Studies List → Bulk Actions**

Bulk Include: Apply "Include" decision to multiple selected studies for TA or FT stage

Bulk Exclude: Apply "Exclude" with selection of exclusion reasons

Bulk Maybe: Flag studies for later review

Reset My Decision: Clear your own decision for selected studies

📋 **Bulk Exclusion Modal:** When excluding multiple studies, select one or more exclusion reasons and add notes. All selected studies receive the same exclusion reason.

Part 6: Conflict Resolution (Mediator Role)

Study with Conflict Example: "The Therapeutic Potential of GLP-1 Agonists in Psoriasis and Hidradenitis Suppurativa"
Reviewer A (shamsuamme): Exclude
Reviewer B (shamsuamme1): Include

Conflict Resolution Interface

Mediator Actions:

Final: Include Final: Exclude

📝 **Resolution Process:** Mediator reviews conflicting decisions, selects final judgment, adds resolution rationale, and submits. The resolved study status updates immediately.

🤖 **AI Assistant in Conflict:** Provides suggestion (95% confidence: Exclude) with reasoning – helps mediator make informed decision.

📊 Part 7: Screened Studies List

Navigate to: **Screening Dashboard → View All Screened Studies**

ID	Title	Authors	Year	T/A Status	FT Status	Actions
5996	Comparison of Clinical Efficacy of Tirzepatide, Liraglutide and Semaglutide...	Ciudin A et al.	2026	Awaiting Screening	Awaiting Screening	Edit T/A Edit FT
5888	Weight Loss Outcomes in a Real-World Setting	Bailey B et al.	2020	Included	Included	Edit
5972	The Therapeutic Potential of GLP-1 Agonists in Psoriasis...	Morales JK et al.	2026	Conflict	Awaiting Screening	Resolve

🔍 Features: Search by title/author, sortable columns, pagination, filter by status, and edit individual decisions.

Part 8: Import/Export Screening Data

Export Options: All reviewer decisions, Included only, Excluded only, Awaiting, Combined Human+AI, Raw AI logs

Import Requirements: CSV with study_id/doi/title, user_id, stage (TA/FT), decision (Include/Exclude/Maybe)

📋 **Use Case:** Offline screening in Excel → import bulk decisions → system updates and triggers conflict detection automatically.

Part 9: PRISMA 2020 Flow Diagram

Navigate to: **Screening Dashboard → View PRISMA Diagram**

Automatic	Manual Simple	Manual Detailed
Generated from screening data (identification, screening, eligibility, included)	Enter values manually for custom diagram	Full PRISMA 2020 builder with all sections

📊 **Automatic PRISMA Data Flow:**

- Identification: Records from databases + other sources
- Screening: Duplicates removed, records screened
- Eligibility: Full-text assessed, exclusions with reasons
- Included: Studies in synthesis (passing both stages)

Copy Diagram: Export PRISMA diagram as PNG for manuscript – one-click copy or download.

Part 10: Workflow & Assignments Actions

Assign Reviewers (T/A) – bulk assign all pending TA studies

Assign Reviewers (FT) – bulk assign all pending FT studies

My Assigned Screening – personal queue of studies

Assign Conflict Mediators – only for studies in conflict

🧪 Group Hands-On Activity: Screening & Selection (50 min)

1. **Access Screening Dashboard:** In your training project, go to Conducting Phase → Screening Dashboard.
2. **Review Eligibility Framework:** Click "Manage Screening Criteria" – verify PICO criteria auto-injected from Planning Phase.
3. **Assign Reviewers (Project Manager role):** Click "Assign Reviewers (T/A)" → select 2 reviewers → assign all pending studies.
4. **Individual Screening (Reviewer A):** Go to "My Assigned Screening" → open a study card. Review title/abstract, PICO framework, and AI suggestion. Make decision (Include/Maybe/Exclude). Add notes if excluding.
5. **Individual Screening (Reviewer B – same studies):** Repeat step 4, but intentionally disagree on 2-3 studies to create conflicts.
6. **Bulk Screening Practice:** Navigate to "Bulk Screening" → select 5 studies → apply "Exclude" with exclusion reason → confirm.
7. **Conflict Resolution (Mediator role):** Go to "Conflicts" card → select a conflicted study. Review both reviewer decisions and AI suggestion. Select final judgment (Include/Exclude) → add rationale → resolve.
8. **Full-Text Screening:** Promote included TA studies to FT stage. Assign FT reviewers, screen full texts, resolve conflicts.
9. **Export Data:** Navigate to Import/Export → Export "All Reviewer Decisions" as CSV → review in Excel.
10. **Generate PRISMA Diagram:** Go to "View PRISMA Diagram" → Automatic tab → review flow numbers. Copy diagram as image for manuscript.

Debrief Questions:

- How does the Mediator role differ from a traditional "senior reviewer"? Why is this important for reducing bias?
- What is the advantage of two-stage screening (title/abstract → full-text)?
- How does AI-assisted screening improve efficiency, and what are its limitations?
- When would you use bulk screening vs. individual screening?
- How does Cohen's Kappa help monitor inter-rater reliability across your team?

Screening Module Completion Checklist:

✔ Screening criteria defined/verified (linked to PICO)
✔ Studies assigned to reviewers (TA and FT stages)
✔ Individual screening completed (with AI assistance)

✔ Bulk screening actions performed
✔ Conflicts identified and resolved by Mediator
✔ Cohen's Kappa reviewed for quality assurance
✔ Screening data exported/imported as needed
✔ PRISMA 2020 diagram generated and verified
✔ Included studies ready for QA and extraction

→ **Next Practical Session:** Quality Assessment (Risk of Bias) using tools created in Planning Phase.

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Moudle 3: Practical Session: Quality Appraisal in RevProHub

Critical Appraisal Hands-On | Group Activity | 90 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Quality Assessment Dashboard
- Assign QA tools to reviewers for pending studies
- Conduct risk of bias assessments using standardized tools (ROBINS-I, RoB 2)
- Identify and resolve conflicts in quality appraisal using the Mediator role
- Generate and export QA summary reports with visualizations
- Import/export QA data for offline assessment

Part 1: Quality Assessment Dashboard

Navigate to: **Main Project Dashboard → Conducting Phase → Quality Assessment Dashboard**

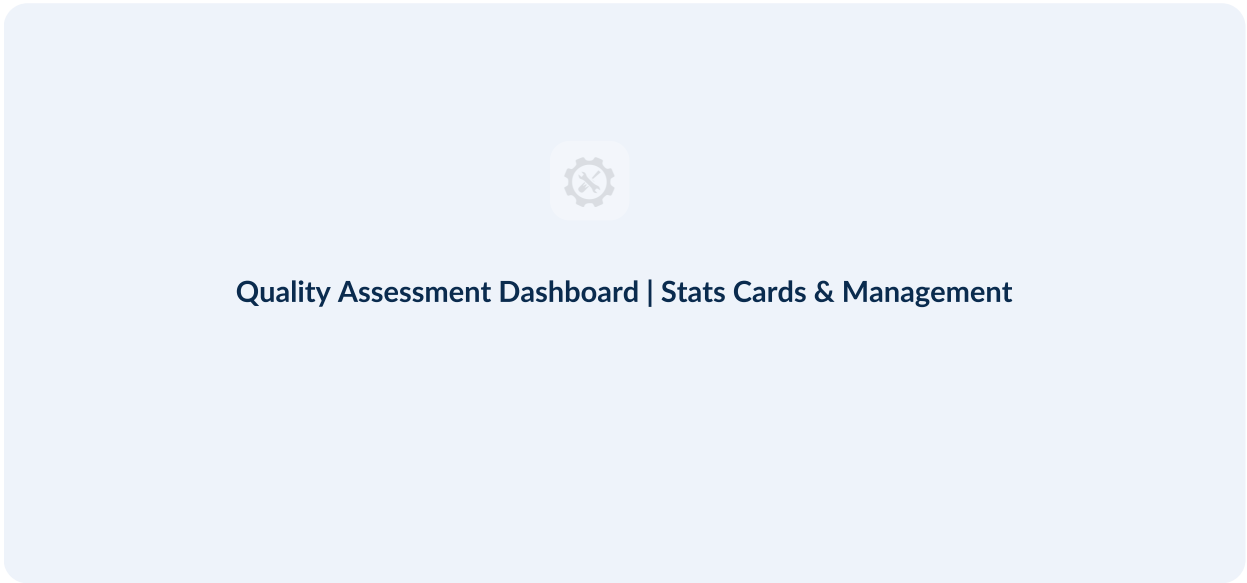
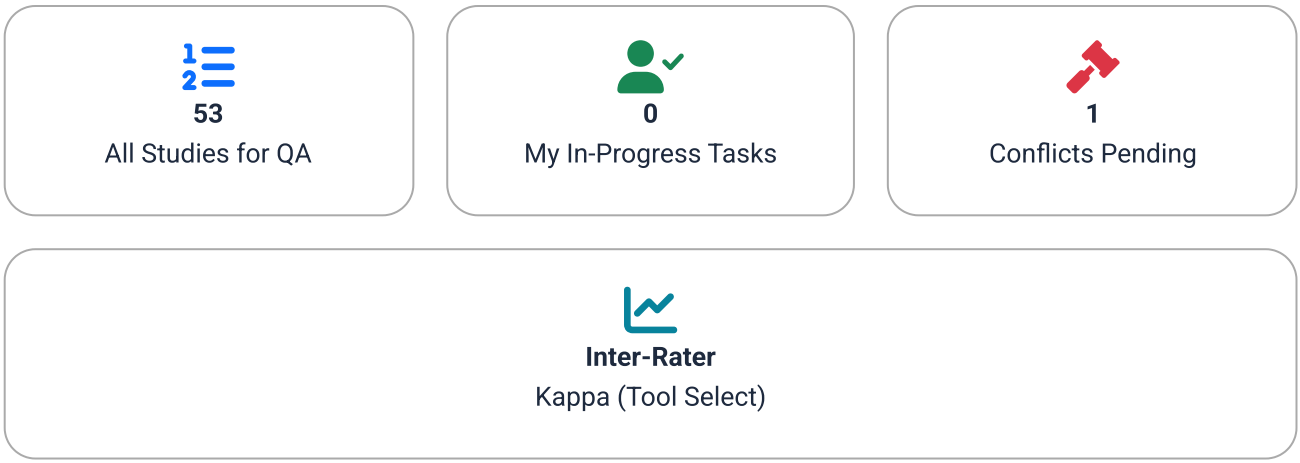


Figure 1: Quality Assessment Dashboard – key stats and navigation cards.



1 **Create QA tool if not done:** Navigate to Planning → Quality Appraisal Form Planning (Session 2.6.11). Select a standard template or build custom.

2 **Studies automatically appear:** Studies that pass full-text screening are auto-injected into the QA queue.

3 **Management & Bulk Actions:** Assign all pending studies to reviewers using the bulk assign form (select QA tool, reviewers, start/end dates).

Part 2: Conducting a Quality Assessment

Each reviewer accesses assigned studies via the **My In-Progress Tasks** card or the Studies in Quality Assessment table.

Assessing: Metabolic dysfunction-associated steatotic liver disease (MASLD)

Using Tool: ROBINS-I (Risk Of Bias In Non-randomized Studies - of Interventions)

Domain 1: D1: Bias due to confounding

Guidance: Consider whether the most important confounding domains were controlled for in the design or analysis.

○ Low ○ Some concerns ○ High

Support for judgment...

Domain 2: D2: Bias in selection of participants into the study

Guidance: Consider whether the study start and participant recruitment could have introduced selection biases.

○ Low ○ Some concerns ○ High

Support for judgment...

Overall Risk of Bias Judgment

-- Select --

Overall rationale...

Auto-Save (in progress) Mark as Complete

Auto-save feature: Each domain rating and support text is auto-saved every 30 seconds. The "Mark as Complete" button finalizes the assessment.

Part 3: Conflict Resolution (Mediator Role)

When two reviewers provide different ratings for the same study, a conflict is flagged. A **Mediator** (assigned only to conflicting studies) resolves discrepancies.

famme rated:
Low
"No rationale provided."

shamsuamme rated:
Some concerns
"No rationale provided."

🔧 **Mediator Resolution Steps:**
1. Select Final Judgment from dropdown (Low / Some concerns / High)
2. Enter Resolution Rationale (optional)
3. Click **Resolve** – the conflict status updates to "Resolved"

Inter-Rater Reliability (Kappa): The dashboard calculates Cohen's Kappa for any selected QA tool, helping teams monitor agreement consistency.

Part 4: Bulk Operations – Import/Export QA Data

Navigate to: **Quality Assessment Dashboard → Import/Export Data**

Bulk Assessment via CSV
Download template → Fill offline → Import back

Conflict Resolution via CSV
Export conflicts → Resolve in CSV → Re-import resolutions

1. Select QA Tool (e.g., ROBINS-I)
2. Download Template (contains all pending studies assigned to you)
3. Complete ratings offline in CSV → Upload file → Click Import Assessments

This is especially useful for large datasets or when working in low-connectivity environments.

Part 5: QA Summary & Risk of Bias Visualization

Navigate to: **Quality Assessment Dashboard → View Visualization**



Figure 2: Risk of Bias summary chart with domain-level and overall judgments.

Study Identifier	D1	D2	D3	D4	D5	D6	D7	Overall
Titus GJ (2025)	Some concerns		Low					Moderate

📊 **Export Options:** PDF, DOCX, or CSV. Also "Add to Manuscript" button injects the summary directly into the Manuscript Editor.

🧪 Group Hands-On Activity (45 min)

1. **Access QA Dashboard:** In your training project, go to Conducting Phase → Quality Assessment Dashboard.
2. **Bulk Assign Studies:** Select the QA tool created in Session 2.6.11 (e.g., ROBINS-I). Choose 2 reviewers. Assign all pending studies. Verify that assigned reviewers receive email notifications.
3. **Conduct an Assessment (Role-play as Reviewer):** One team member accesses "My In-Progress Tasks". Open a study. Rate 3 domains with different judgments and provide support text. Observe auto-save. Click "Mark as Complete".
4. **Simulate a Conflict:** A second reviewer (different person) assesses the same study but gives different ratings for at least 2 domains. After both complete, check the "Conflicts Pending" card – the study should appear.
5. **Mediator Resolution:** A third team member (Mediator role) navigates to Conflicts Pending → Resolve. Select final judgments for each conflicting domain, add rationale, and resolve.
6. **Generate QA Summary:** Go to Visualization. Filter by the tool. Review the bar chart and summary table. Export as PDF.
7. **Bulk CSV Import (optional):** From Manage Data, download the assessment template for the tool. Fill 2-3 rows with ratings. Re-import and verify updates.

Debrief Questions:

- How does the Mediator role differ from a traditional "senior reviewer" approach?
- What is the advantage of calculating Inter-Rater Reliability (Kappa) during QA?
- How can the CSV bulk import feature support large reviews with geographically distributed teams?
- Why is it important that studies are injected into QA only *after* passing full-text screening?

🕮 Connecting to Critical Appraisal Theory (Session 3.2)

Key Concepts Applied in RevProHub QA Module:

- **Internal Validity:** Each domain (e.g., confounding, selection bias) directly assesses internal validity.
- **External Validity:** Considered in overall judgment and notes field.
- **Bias Types:** ROBINS-I explicitly addresses selection bias, performance bias, detection bias, attrition bias, and reporting bias.
- **Standardized Tools:** RevProHub provides JBI, Cochrane ROBINS-I, RoB 2, Newcastle-Ottawa, and CASP templates.

QA Module Completion Checklist:

✔ QA tool created/selected in Planning Phase (Session 2.6.11)
✔ Studies assigned to reviewers (bulk or individually)
✔ Assessments completed with domain ratings and support text
✔ Conflicts resolved by Mediator
✔ QA summary exported and/or added to manuscript
✔ Understanding of CSV bulk import/export for offline workflows

→ **Next Practical Session:** Data Extraction (using repeater logic for qualitative synthesis and two-phase extraction for quantitative outcome data).

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The impacts of beta agonist agents towards weight reduction among diabetic patients

Quality Assessment Dashboard

ALL STUDIES FOR QA

53

MY IN-PROGRESS TASKS

0

CONFLICTS PENDING

1

INTER-RATER RELIABILITY (KAPPA)

Select a tool

Select Tool...

Management & Bulk Actions

Assign all pending studies to reviewers:

QA Tool

Select a tool...

Reviewers

Select

Start Date

End Date

Studies in Quality Assessment

10 entries per page

Search:

Study	Overall Status	Your Assessments	Actions
Metabolic dysfunction-associated steatotic liver disease (MASLD): Integrating metabolic and hepatic management into pharmacy practice. Knorr JP et al. et al. (2026)	In Progress		
Evaluation and determinants of asthma control among adult patients with asthma attending the Johannesburg academic respiratory clinics: A cross-sectional study. Titus GJ et al. et al. (2025)	Conflict		

Showing 1 to 2 of 2 entries

« ‹ 1 › »

Quality Assessment

Assessing Study: **Metabolic dysfunction-associated steatotic liver disease (MASLD): Integrating metabolic and hepatic management into pharmacy practice.**

Using Tool: **ROBINS-I (Risk Of Bias In Non-randomized Studies - of Interventions)**

Domain 1: D1: Bias due to confounding

Guidance: Consider whether the most important confounding domains were controlled for in the design or analysis.

Judgment:

○ Low ◉ Some concerns ○ High

Support for judgment:

Briefly explain your judgment...

Overall Risk of Bias Judgment

Select your overall risk of bias judgment for this study:

Grade A: High Certainty

Overall Rationale:

Summarize the reasons for your overall judgment.

Resolve QA Conflicts: Evaluation and determinants of asthma control amon...

Review the conflicting ratings and provide a final, consolidated judgment.

Domain Conflicts

Conflict: D1: Bias due to confounding

Guidance: Consider whether the most important confounding domains were controlled for in the design or analysis.

famme rated:

Low

"No rationale provided."

shamsuamme rated:

Some concerns

"No rationale provided."

Final Judgment:

-- Select --

Resolution Rationale (optional):

Reasoning for the final judgment...

The impacts of beta agonist agents towards weight reduction among diabetic patients

Manage Quality Assessment Data

Bulk Assessment via CSV

Perform assessments offline by downloading a template of your pending tasks, filling it out, and re-importing.

1. Select QA Tool:

-- Choose a tool --

2. Download Your Template:

This template will contain all studies currently assigned to you for the selected tool.

3. Upload Completed Template:

Choose File | No file chosen

Conflict Resolution via CSV

Export all pending conflicts for a tool, resolve them offline in the CSV, and re-import the file to update the system.

1. Select QA Tool:

-- Choose a tool --

2. Export Pending Conflicts:

Import Conflict Resolutions

3. Upload Resolved Conflicts File:

Choose File | No file chosen

The impacts of beta agonist agents towards weight reduction among diabetic patients

Quality Assessment Summary

Filter by Tool: All Tools

Risk of Bias Across Domains

Export Summary Report

Download a summary for the currently selected tool(s).

Format:

PDF

Summary Table

Study Identifier	D1: Bias due to confounding	D2: Bias in selection of participants into the study	D3: Bias in classification of interventions	D4: Bias due to deviations from intended interventions	D5: Bias due to missing data
Titus GJ (2025)	!	!	✓	!	✓

Key: ✓: Low !: Some concerns −: High ✓: Grade A: High Certainty ◐: Grade B: M Certainty

Domain Reference

Domain	Category	Bias Domain	Appraisal Level
D1: Bias due to confounding	-	-	-
D2: Bias in selection of participants into the study	-	-	-
D3: Bias in classification of interventions	-	-	-
D4: Bias due to deviations from intended interventions	-	-	-
D5: Bias due to missing data	-	-	-
D6: Bias in measurement of outcomes	-	-	-
D7: Bias in selection of the reported result	-	-	-

Practical Session: Data Extraction in RevProHub

Two-Phase Extraction | 1-to-Many Repeater Logic | 90 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Data Extraction Dashboard
- Assign extraction tasks to reviewers (bulk and individual)
- Extract study characteristics and outcome data using structured forms
- Use AI-assisted extraction from full text
- Implement 1-to-many repeater fields for qualitative findings
- Resolve extraction conflicts using the Mediator role
- Export final consensus data for meta-analysis

Part 1: Data Extraction Dashboard

Navigate to: **Main Project Dashboard → Conducting Phase → Data Extraction Dashboard**

0	2	0
Ready to Extract	My In Progress	Pending Conflicts

0	N/A
Completed	Inter-Rater Reliability

1. **Manage Forms:** If no extraction form exists, the dashboard shows a setup alert.

Create forms first in Planning → Extraction Form Planning (Session 2.6.12).

2 **Assign All Pending:** Use the modal to assign all awaiting studies to reviewers (select form, reviewers, start/due dates).

3 **Studies Ready Table:** Lists studies that passed screening, ready for extraction. Click "Extract" to begin.

Stats Cards Navigation: Click any card to navigate directly to the respective list (Ready Studies, My Extractions, Conflicts, Completed).

Part 2: Assigning Studies for Extraction

1 Click "**Assign All Pending**" button (or assign individually from Studies table).

2 Select Extraction Form (e.g., "Meta-Analysis of Effectiveness - Count Data").

3 Select Reviewer(s) – hold Ctrl/Cmd for multiple (enables dual extraction).

4 Set Start Date and Due Date (optional).

5 Click "**Assign Queue**" – reviewers receive email notifications and tasks appear in "My Extractions".

Dual extraction quality control: Assigning two reviewers to the same study enables automatic conflict detection and resolution, improving data accuracy.

Part 3: The Extraction Interface

Access via: **My Extractions → Click study title → Extract with Form**

AI Extraction Tools

Paste or load full text here (abstract, methods, results) to enable AI-assisted extraction...

Load from .txt | Load Saved Text | AI Extract Data

Study Characteristics (Static – extracted once)

Study Author & Year

e.g., Knorr JP et al. (2026)

Study Design

e.g., RCT, Quasi-experimental, Cohort

Intervention Group Description

Describe intervention, dosage, frequency...

Intervention Group Sample Size (N1)

e.g., 120

Intervention Group Events (n1)

Number experiencing outcome

Control Group Sample Size (N2)

e.g., 125

Control Group Events (n2)

Number experiencing outcome

Control/Comparator Description

e.g., placebo, standard care

Outcome Measure Description

e.g., weight loss ≥5%, HbA1c reduction

Follow-up Period

e.g., 6 months, 1 year

Notes

Any additional observations...

Qualitative Findings (1-to-Many Repeater Group)

Theme/Category Name

e.g., Barriers to medication adherence

Illustrative Quote

Verbatim quote from participants...

Credibility Rating

Unequivocal

Add Another Finding

Auto-save: Progress is auto-saved every 30 seconds. Use "Save Progress" button for manual save. Click "Submit Final Extraction" when complete.

Part 4: My Assigned Extractions

Navigate to: **Data Extraction Dashboard** → **My In Progress card** → **My Extractions**

Title	Authors	Year	Status	Actions
Metabolic dysfunction-associated steatotic liver disease (MASLD)...	Knorr JP et al.	2026	in progress	Extract View
Evaluation of asthma control among adult patients...	Titus GJ et al.	2025	in progress	Extract View

🔍 **Bulk actions:** Select multiple studies to clear records or unassign yourself from extractions.

🔨 Part 5: Extraction Conflict Resolution (Mediator Role)

👤 Reviewer A:
Intervention N1: 120
Events: 45

👤 Reviewer B:
Intervention N1: 125
Events: 48

Mediator Final:
-- Select Final Value --
Resolution rationale...

Resolve Conflict

📈 **Inter-Rater Reliability (Kappa):** Dashboard calculates Cohen's Kappa for any selected extraction form when sufficient paired data exists.

📥 Part 6: Import, Export & Data Cleaning

📥 Bulk Assessment via CSV
Download template → Extract offline → Import back

🔨 Conflict Resolution via CSV
Export conflicts → Resolve in CSV → Re-import resolutions

🧹 Data Cleaning Utilities
Standardize dates, trim whitespace across all studies

📤 **Export Final Consensus Data:** Select form → Choose CSV or DOCX → Export resolved data for meta-analysis in R, SPSS, or RevMan.

💡 **Pro Tip for Qualitative Meta-Aggregation:** When importing CSV data, include multiple rows for the same Study ID. The system automatically groups them as multiple findings under the repeater group.

🗄️ Part 7: All Studies Ready for Extraction

Navigate from Dashboard → "Ready to Extract" card or "View List" button.

ID	Title	Authors	Year	Status	Actions
6002	Evaluation and determinants of asthma control among adult patients...	Titus GJ et al.	2025	Ready	Extract Assign
5999	Metabolic dysfunction-associated steatotic liver disease (MASLD)...	Knorr JP et al.	2026	Ready	Extract Assign

🔎 Features: Search by title/author/year, sortable columns, pagination (10/25/50/100 per page), and individual study assignment.

⚠ Part 8: Studies with Pending Conflicts

Navigate from Dashboard → "Pending Conflicts" card → View All.

ℹ If no conflicts exist, the list shows "No studies have pending conflicts." Conflicts arise when two reviewers extract different values for the same field.

🧪 Group Hands-On Activity: Data Extraction (50 min)

1. **Access Extraction Dashboard:** In your training project, go to Conducting Phase → Data Extraction Dashboard.
2. **Create/Verify Extraction Form:** Ensure you have a form from Session 2.6.12 (e.g., "Meta-Analysis of Effectiveness - Count Data" or "Qualitative Synthesis with Repeater").
3. **Assign Studies (Project Manager role):** Click "Assign All Pending" → select your form → choose two reviewers (e.g., two team members) → assign. Verify emails/tasks appear.
4. **Extract Data (Reviewer A):** Go to "My Extractions" → open a study. Fill Study Characteristics (Author, Year, N1, N2, events). For the repeater group (if qualitative form), add 2-3 theme rows with illustrative quotes. Click "Save Progress", then "Submit Final Extraction".
5. **Extract Data (Reviewer B – same study):** Repeat step 4 but introduce at least one discrepancy (e.g., different N1 or events).
6. **Simulate Conflict:** After both submit, check Dashboard → "Pending Conflicts" should show the study with number of conflicts.
7. **Mediator Resolution:** A third team member (Mediator role) navigates to Conflict Resolution page. Review side-by-side discrepancies, select final values, add rationale, and resolve each field.
8. **Export Final Data:** After resolution, go to "Manage Data" → Export Final Consensus Data → select form → export CSV. Open in Excel to view cleaned, reconciled dataset.
9. **(Optional) AI Extraction Test:** Paste a study abstract into the AI Extraction Tools textarea, click "AI Extract Data", and observe auto-populated fields.

Debrief Questions:

- How does two-phase extraction (Study Characteristics + Outcome Data) improve data quality?
- What is the advantage of the 1-to-many repeater logic for qualitative evidence synthesis?
- How does the Mediator conflict resolution workflow reduce bias compared to senior reviewer overriding decisions?
- When would you use CSV bulk import vs. online extraction?
- How can Inter-Rater Reliability (Kappa) help monitor extraction quality across your team?

🕮 Connecting to Data Extraction Theory (Session 3.3)

Key Concepts Applied in RevProHub Extraction Module:

- **Two-Phase Approach:** Study characteristics (static) separated from outcome data (repeatable) – aligns with Cochrane/JBI recommendations.
- **Standardized Forms:** Prevents ad-hoc extraction, ensures consistency across reviewers.
- **Dual Extraction:** Two independent reviewers + conflict resolution = reduced data entry errors.
- **1-to-Many Repeater Logic:** Enables qualitative meta-aggregation (multiple findings per study).
- **AI Assistance:** Speeds up extraction by auto-populating fields from full text (human verification still required).

📋 Data Extraction Module Completion Checklist:

✔ Extraction form created in Planning Phase (Session 2.6.12)
✔ Studies assigned to reviewers (bulk or individual)
✔ Study characteristics extracted and saved
✔ Outcome data extracted (quantitative) OR themes/quotes extracted (qualitative with repeater)
✔ Conflicts resolved by Mediator
✔ Final consensus data exported for analysis
✔ Understanding of CSV bulk import for offline extraction

→ **Next Practical Session:** Synthesis & Reporting (Meta-analysis, PRISMA diagram, Manuscript Editor).

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Practical Session: Data Synthesis & Meta-Analysis

Quantitative Synthesis | AI-Powered Interpretation | 90 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Reporting Phase and Data Synthesis Dashboard
- Configure and run meta-analyses (effectiveness, prevalence, continuous outcomes)
- Map extraction form fields to analysis parameters (N, events, effect measures)
- Interpret forest plots, heterogeneity statistics (I^2, Q-test), and subgroup analyses
- Use meta-regression to explore sources of heterogeneity
- Generate funnel plots and interpret publication bias (Egger's test)
- Export results and add AI-generated interpretations to manuscript

Part 1: Reporting Phase Dashboard

Navigate to: **Main Project Dashboard → Reporting Phase → Reporting Phase Dashboard**



PRISMA
Flow Diagram



Data Synthesis
Meta-Analysis



Report Generator
Templates



Manuscript Editor
Auto-Injection

📊 **PRISMA Chart Generator:** Automatic flow diagram from screening data (redirects to Screening → PRISMA). Manual builder also available. Diagram auto-inserts into Manuscript Editor.

📝 **Manuscript Writer:** Real-time editor with auto-injected content (search query, PRISMA chart, QA results, synthesis outputs). Export as DOCX/PDF for journal submission.

📄 **Report Generator:** Create comprehensive reports using pre-designed templates or custom builds; export as PDF/DOCX.

Part 2: Data Synthesis Dashboard

Navigate to: **Reporting Phase Dashboard → Data Synthesis → Synthesis Dashboard**

Start New Analysis

Effectiveness Meta-Analysis
2x2 table data (OR, RR, RD)

Prevalence Meta-Analysis
Single-group proportions

Continuous Meta-Analysis
Mean, SD, N data

Meta-Aggregation (Qualitative)
Synthesize themes/findings

General Synthesis (Charting)
Scoping/narrative reviews

Descriptive Analysis
Summarize characteristics

Umbrella Synthesis
Multiple reviews synthesis

Past Analysis Runs: Each configured analysis is saved with name, type, date, and actions (view, clone, delete, add to manuscript). Bulk delete available.

Prerequisites for Data Synthesis:

- ✅ Completed data extraction for at least 3-5 studies (Session 3.3 / Extraction Module)
- ✅ Extracted numeric data (N, events, means, SDs) for quantitative synthesis
- ✅ All conflicts resolved (if dual extraction) – only consensus data is used
- ✅ Understanding of effect measures (OR, RR, RD, mean difference)

🎛️ Part 3: Step-by-Step Configuration Guide (Meta-Analysis of Effectiveness)

Step 1: Basic Information

Analysis Name *

MA Sabit Ababor (Clone) with glmm

Select Data Extraction Form *

Meta-Analysis of Effectiveness - Count Data (e

📝 **Why:** The analysis name helps identify this specific run in the Past Analyses table. The extraction form determines which fields are available for mapping.

Step 2: Select Studies

Included Studies *

Lingvay L (2020)
Ortiz O (2019)
Wilding JPH (2021)
+ 42 more studies

📚 **Why:** Only studies marked as "Included" after full-text screening appear. Select only those with complete data for the outcome of interest.

Step 3: Data Mapping & Settings

Model Type

Random-Effects

Effect Measure

Odds Ratio (OR)

Intervention Group N *

intervention_n

Intervention Group Events *

intervention_events

Control Group N *

control_n

Control Group Events *

control_events

Comparator Group Description *

comparator_desc

⚙️ **Why mapping matters:** Correct field mapping ensures RevProHub calculates accurate effect sizes. For 2x2 tables, you must map N (total participants) and Events (outcome occurrences) for both intervention and control groups.

Step 4: Methodological Options (Handling Data Issues)

Method for Handling Data Issues

Standard Inverse-Variance (Default – Recommended for normal data)

Guidance for Novice Users:
For most systematic reviews with **normal data** (no zero events in any study arm), all available methods yield very similar results. The **Standard Inverse-Variance** method is the current default and recommended choice.

Only consider alternative methods (Constant Correction, Peto, Log Odd, GLMM) when you have **sparse data** (studies with zero events in one or both arms, uncommon outcomes, or very small sample sizes). In such cases, consult with a statistician or the AI Assistant for guidance.

⚠️ **When to change from default:** The Standard Inverse-Variance method automatically excludes studies with zero events from the analysis. If your review includes several such studies and you want to retain them, consider switching to Constant Correction (adds 0.5 to all cells) or GLMM (handles zeros via likelihood estimation). For typical systematic reviews with event rates >5%, the default method works perfectly.

Step 5: Advanced Options

Subgroup Analysis by Field

intervention_desc

Meta-Regression Moderator

publication_year

📊 **Subgroup & Meta-Regression:** Subgroup analysis compares effect sizes across categorical variables (e.g., intervention type). Meta-regression explores continuous moderators (e.g., publication year) to explain heterogeneity.

Part 4: Results Page – Complete Breakdown

4.1 Forest Plot

Study / Group	Int (n/N)	Ctrl (n/N)	Weight (%)	OR [95% CI]
intervention_desc: Semaglutide				
Lingvay L (2020)	22/30	15/30	2.3	2.75 [0.93, 8.10]
Wilding JPH (2021)	850/1306	340/655	9.0	1.73 [1.43, 2.09]
Davis D (2022)	1400/2000	600/1000	9.2	1.56 [1.33, 1.82]
Subgroup Summary	**6447/10354**	**4400/7940**	**100.0**	**1.38 [1.14, 1.67]**
intervention_desc: Liraglutide				
Marso SP (2016)	1500/2487	800/1244	9.3	0.84 [0.73, 0.97]
Kumar K (2017)	1091/4668	1234/4672	9.6	0.85 [0.77, 0.93]
Subgroup Summary	**7451/18222**	**5039/14928**	**100.0**	**1.37 [1.15, 1.63]**
intervention_desc: Tirzepatide				
Jastreboff AM (2022)	450/611	200/305	18.4	1.47 [1.09, 1.97]
Garcia G (2023)	1100/1500	1000/1500	40.5	1.38 [1.18, 1.61]
Subgroup Summary	**2410/3226**	**1750/2620**	**100.0**	**1.52 [1.31, 1.76]**
Total (random)	**21896/42485**	**15764/34744**	**100.0**	**1.42 [1.27, 1.58]**

Forest Plot Interpretation:
- Each row shows a study's effect size (OR) and 95% confidence interval.
- Squares represent point estimates; size corresponds to study weight.
- Horizontal lines = confidence intervals (crossing 1.0 = non-significant).
- Diamonds = pooled effect sizes (subgroup and overall).
- The overall diamond at the bottom shows the summary OR = 1.42 [1.27, 1.58].

4.2 Model Summary & Heterogeneity

Model Type: Random-Effects

Heterogeneity (I^2): 86.6%

Q-statistic: 327.99 (df=44), p < 0.001

τ^2 (between-study variance): 0.0952

📖 **Interpretation:** I^2 = 86.6% indicates substantial heterogeneity (≥75% = considerable). The Q-test p < 0.001 rejects homogeneity, confirming that study differences are not due to chance alone. τ^2 = 0.095 represents the variance of true effect sizes across studies.

🔧 **Action:** High heterogeneity requires subgroup analysis or meta-regression to identify moderators. A random-effects model (already selected) is appropriate as it incorporates between-study variance.

4.3 Subgroup Analysis Table

Subgroup	k (studies)	OR [95% CI]	I^2 (%)
Semaglutide	14	1.38 [1.14, 1.67]	83.8
Liraglutide	16	1.37 [1.15, 1.63]	84.2
Tirzepatide	6	1.52 [1.31, 1.76]	21.7
Co-agonist X	1	0.83 [0.77, 0.90]	0.0

📊 **Test for subgroup differences:** Q = 136.32, df = 3, p = 0.000 → significant differences between subgroups. Tirzepatide shows the largest effect (OR=1.52) and lowest heterogeneity (I^2=21.7%).

4.4 Meta-Regression Analysis

Moderator: publication_year

Regression Model: y = -97.380 + 0.048 × publication_year

Coefficient (Slope): 0.0483 (p = 0.0327)

R^2 (Heterogeneity Explained): 10.2%

> 📈 **Interpretation:** The positive slope (0.048) indicates that more recent studies report slightly higher ORs. The p-value (0.033) suggests a statistically significant relationship, but the low R^2 (10.2%) means only 10% of heterogeneity is explained by publication year – other factors remain important.

4.5 Publication Bias – Funnel Plot & Egger's Test

Egger's Test: Intercept = 5.703, t = 6.28, p = 0.000 (df=43)
Interpretation: A significant Egger's test ($p < 0.05$) suggests funnel plot asymmetry, which may indicate publication bias, small-study effects, or heterogeneity. Examine the funnel plot visually – missing studies in the bottom-left corner would suggest selective reporting of positive results. RevProHub generates interactive funnel plots with trim-and-fill optional adjustment.

4.6 AI Assistant: Interpretation & Methodological Feedback

Critical Interpretation: The meta-analysis, encompassing 45 studies, demonstrates a statistically significant positive effect (OR 1.419, 95% CI: 1.274–1.582), suggesting that the intervention is associated with higher odds of the desired outcome compared to control. However, the interpretation is heavily caveated by the extremely high I^2 value of 86.6%, which indicates substantial inconsistency across studies. Given the high heterogeneity, the pooled OR should be interpreted as an average effect rather than a universal one.

Methodological Feedback: An I^2 of 86.6% indicates significant heterogeneity, which mandates that you move beyond simple reporting of the pooled estimate. First, investigate sources of heterogeneity via subgroup analyses or meta-regression. Second, consider using REML estimator for τ^2. Finally, perform a sensitivity analysis by excluding outliers.

Zero Cell Handling Advice: The analysis used the "constant" method for the "MA-SZ (Single Zeros)" data pattern. AI recommends Continuity Correction (0.5 adjustment) or Mantel-Haenszel with zero-cell handling.

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4.7 Clone & Edit Analysis – Sensitivity Analysis

🔁 **Clone & Edit Function:** Allows you to duplicate an existing analysis, modify parameters (e.g., change model type, zero-cell method, or exclude studies), and compare results. This is essential for sensitivity analyses.

Sensitivity Analysis Comparison: "Sabit Ababor (Clone) with glmm" vs. base analysis "Sabit Ababo"

Pooled Effect (OR): 1.419 → 1.419 (0.0% change)

95% CI: Stable [1.274, 1.582]

Egger's Test p-value: 0.000 → 0.000

📌 **When to use:** Test robustness by (a) changing the model (fixed vs. random), (b) applying different zero-cell corrections, (c) excluding individual studies (leave-one-out), or (d) restricting to high-quality studies.

4.8 Export Results & Add to Manuscript

Export as PDF
Full report with forest plot, tables, and AI interpretation

Export as DOCX
Editable Word document for manuscript integration

Export as CSV
Raw effect sizes and weights for external software (R, Stata, SPSS)

Add to Manuscript

Auto-injects forest plot, summary table, and AI interpretation into the Manuscript Editor

Part 5: Other Synthesis Methods

5.1 Descriptive Analysis – Overview & Configuration

What is Descriptive Analysis?

Descriptive analysis summarizes the characteristics of your included studies and extracted data without calculating pooled effect sizes. It generates frequencies, means, medians, and ranges to help you understand the nature of your evidence base.

Configure: Descriptive Analysis

Generates descriptive statistics (frequencies, means, medians) for study characteristics and extracted data.

Step 1: Basic Information

Analysis Name *

e.g., Study Characteristics Summary

Select Data Extraction Form *

Meta-Analysis of Effectiveness - Count Data (e

Step 2: Select Studies

Included Studies *

Select all included studies (19 total)

Step 3: Data Mapping & Settings

A. Study Characteristics (Select fields to summarize)

- [ ] Publication Year
- [ ] Source Database
- [ ] Final Screening Status
- [ ] Duplication Status

B. Extracted Data Fields

- [ ] Study Author & Year
- [ ] Study Design
- [ ] Intervention Description
- [ ] Intervention N

Descriptive Analysis – Results Example

Study Characteristics	Category	Frequency (n)	Percentage (%)
Source Database	PubMed	6	31.6
	Embase	8	42.1
	Cochrane Library	5	26.3
Study Design	RCT	14	73.7
	Cohort	5	26.3

Numeric Field	Count	Mean	Median	SD	Min	Max
Intervention N	19	1092.05	350.00	1497.42	40	4860
Follow-up (years)	19	1.47	1.00	0.51	1	2

> 📊 **When to use Descriptive Analysis:** Ideal for scoping reviews, characterizing your evidence base, identifying gaps in the literature, or presenting study characteristics before meta-analysis. Results can be exported as tables for your manuscript.

5.2 General Data Synthesis (Tabulation) – Overview & Configuration

> **What is General Data Synthesis?**
> General Data Synthesis creates custom summary tables (charting) for scoping reviews, narrative syntheses, or any review where data is presented in a structured table rather than statistically pooled. You select which extracted fields become columns in your table.

Configure: General Data Synthesis (Tabulation)

For Scoping Reviews, Narrative Syntheses, or any review where data is presented in a summary table.

Step 1: Basic Information

Analysis Name *

e.g., Study Characteristics Summary Table

Select Data Extraction Form *

Your Extraction Form

Step 2: Select Studies

Included Studies *

Select studies to include in the table

Step 3: Data Mapping & Settings

Form Field

-- Select a field --

Table Column Header

e.g., Study Population, Intervention D

+ Add Column

📋 **How it works:** Each selected field becomes a column in your output table. Each study becomes a row. You can reorder columns, rename headers, and export the table as CSV, DOCX, or add directly to your manuscript. This is ideal for presenting evidence tables in scoping or narrative reviews.

General Data Synthesis – Results Example

Study	Design	Intervention	Sample Size (I/C)	Key Outcome
Wilding JPH (2021)	RCT	Semaglutide 2.4mg	1306 / 655	≥5% weight loss: 86.6% vs 47.6%

Study	Design	Intervention	Sample Size (I/C)	Key Outcome
Jastreboff AM (2022)	RCT	Tirzepatide	611 / 305	≥5% weight loss: 73.6% vs 32.6%
Marso SP (2016)	RCT	Liraglutide	2487 / 1244	≥5% weight loss: 60.3% vs 64.3%

📌 **When to use General Data Synthesis:** Scoping reviews, systematic reviews with heterogeneous outcomes that cannot be meta-analyzed, narrative syntheses, or any situation where you need a structured evidence table rather than a statistical summary.

Part 6: PRISMA 2020 Flow Diagram Generator

Automatic PRISMA Chart: RevProHub generates a PRISMA 2020 flow diagram using screening stage data:

- **Identification:** Records from database searches + other sources
- **Screening:** Duplicates removed, records screened
- **Eligibility:** Full-text articles assessed, exclusions with reasons
- **Included:** Studies included in synthesis

Manual PRISMA Maker also available for custom adjustments. Diagram auto-inserts into Manuscript Editor.

Part 7: Manuscript Editor with Auto-Injected Content

📖 Navigate to: **Reporting Phase → Manuscript Writer**

Real-time Editor Features:

- Auto-injected search strategy (from Search & Query Management)
- Auto-injected PRISMA flow diagram (from Screening)
- Auto-injected Risk of Bias summary (from Quality Assessment Visualization)
- Auto-injected data synthesis results (forest plots, tables, AI interpretation)
- Citation management integration
- Export as DOCX/PDF for journal submission

🧪 Group Hands-On Activity: Data Synthesis (50 min)

1. **Navigate:** Reporting Phase → Data Synthesis Dashboard.
2. **Configure New Analysis:** Click "Start New Analysis" → "Effectiveness Meta-Analysis". Name it "Training MA - Weight Loss".
3. **Select Form & Studies:** Choose your extraction form. Select 5-10 completed studies.
4. **Map Fields:** Map intervention_n, intervention_events, control_n, control_events.
5. **Set Model:** Random-Effects, Odds Ratio. Select zero-cell method (e.g., GLMM).
6. **Run Analysis:** Click "Run Analysis". Review forest plot, I^2, and overall effect.
7. **Add Subgroup:** Clone the analysis, add subgroup by "intervention_desc". Compare subgroup I^2 values.
8. **Meta-Regression:** Run analysis with moderator "publication_year". Interpret p-value and R^2.
9. **Export:** Export results as PDF and DOCX. Click "Add to Manuscript".
10. **AI Assistant:** Review AI interpretation. Copy methodological feedback for your report.
11. **PRISMA & Manuscript:** Generate PRISMA diagram and verify auto-injection into Manuscript Editor.

Debrief Questions:

- How do you interpret an I^2 of 75% or higher? What actions should you take?
- When would you choose a fixed-effect vs. random-effects model?
- What does a significant Egger's test indicate about your meta-analysis?
- How can subgroup analysis help explain high heterogeneity?
- What is the role of the AI Assistant in improving the transparency and reproducibility of your synthesis?

Reporting Phase Completion Checklist:

✔ Meta-analysis configured and run (effectiveness/prevalence/continuous)
✔ Fields mapped correctly from extraction form
✔ Heterogeneity assessed (I^2, Q-test)
✔ Subgroup analysis performed (if applicable)
✔ Meta-regression explored (if applicable)
✔ Publication bias assessed (funnel plot + Egger's test)
✔ Results exported and/or added to manuscript
✔ PRISMA diagram generated and verified
✔ AI interpretation reviewed and incorporated

→ **Next:** Final Report Generation and Manuscript Writing.

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Practical Session: Meta-Analysis of Prevalence

Single-Group Proportions | Pooled Prevalence | 60 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Understand the purpose and application of meta-analysis of prevalence (single-group proportions)
- Configure prevalence meta-analysis in RevProHub with proper field mapping (sample size, case count)
- Select appropriate model types (random-effects vs. fixed-effect) for proportion data
- Interpret forest plots, heterogeneity statistics (I^2, Q-test), and pooled prevalence estimates
- Perform subgroup analysis and meta-regression to explore sources of heterogeneity
- Assess publication bias using funnel plots and Egger's test
- Use sensitivity analysis to compare results across different methodological choices
- Export results and add AI-generated interpretations to manuscript

Part 1: What is Meta-Analysis of Prevalence?

Meta-analysis of prevalence (also called single-group proportion meta-analysis) synthesizes data from studies reporting the frequency of a condition, event, or characteristic within a population when there is no comparison group.

Sample Size (N)
Total participants per study

Case Count (n)
Number with the condition

Pooled Prevalence
Weighted average proportion

Heterogeneity I²

Variation between studies

📖 **Common Applications:** Disease prevalence (e.g., hypertension, diabetes, HIV), medication adherence rates, healthcare utilization proportions, diagnostic test accuracy (sensitivity/specificity with single-group data).

⚙️ Part 2: Configuring Meta-Analysis of Prevalence

Navigate to: **Reporting Phase → Data Synthesis → Configure Analysis → Prevalence Meta-Analysis**

Step 1: Basic Information
- Analysis Name: e.g., "Hypertension Prevalence in HIV-Infected Adults"
- Select Data Extraction Form: Choose form containing sample_size and case_count fields

Step 2: Select Studies
- Choose studies marked as "Included" after full-text screening
- Only studies with completed prevalence data (N and n) appear

Step 3: Data Mapping & Settings

Map the following fields from your extraction form:

- **Total Sample Size (N):** Number of participants in the study
- **Number of Cases (n):** Number with the outcome/condition
- **Model Type:** Random-Effects (recommended for heterogeneous data) or Fixed-Effect

📊 **Effect Measure for Prevalence:** RevProHub uses the double-arcsine transformation (Freeman-Tukey) to stabilize variance for proportion data, then back-transforms for reporting.

Part 3: Example Data – Hypertension Prevalence in HIV-Infected Adults (SSA)

Study	Country	Setting	Sample Size (N)	Cases (n)	Prevalence (%)
Okoro C. (2021)	Nigeria	Urban	450	120	26.7%
Uwamahoro D. (2021)	Rwanda	Mixed	1500	773	51.5%
Mbemba K. (2023)	DRC	Mixed	810	185	22.8%
Molefi S. (2022)	Botswana	Urban	310	95	30.6%
Abebe G. (2023)	Ethiopia	Rural	855	300	35.1%
Onyango P. (2021)	Kenya	Rural	210	58	27.6%
Mwamba Z. (2023)	Tanzania	Rural	410	225	54.9%

Part 4: Forest Plot – Pooled Prevalence

Forest Plot: Hypertension Prevalence in HIV-Infected Adults (Subgroup by Setting)

Study	Prevalence [95% CI]	Weight%
Mixed/Nationwide (k=3)	32.7% [16.5%, 54.6%]	33.1%
Urban Setting (k=9)	35.3% [31.2%, 39.6%]	43.9%
Rural Setting (k=3)	38.8% [25.3%, 54.3%]	23.0%
TOTAL (random)	35.4% [30.7%, 40.4%]	100.0%

Model Summary: Random-Effects | Heterogeneity: Q=358.47 (df=14), p<0.001 | I^2 = 96.1%

📉 **Interpreting Heterogeneity (I^2):** I^2 = 96.1% indicates considerable heterogeneity. This means 96.1% of observed variance is due to true differences between studies, not sampling error. Subgroup analysis or meta-regression should be conducted to identify moderators.

Part 5: Subgroup Analysis & Meta-Regression

Subgroup Analysis
By country, setting (urban/rural), study design, or population characteristics

Meta-Regression
Explore continuous moderators (publication year, sample size, mean age)

Publication Bias
Egger's test + funnel plot visual inspection

Subgroup Analysis Results (by Setting):

- **Mixed/Nationwide (k=3):** Prevalence 32.7% [16.5%, 54.6%], I^2=99.0%
- **Urban Setting (k=9):** Prevalence 35.3% [31.2%, 39.6%], I^2=90.7%
- **Rural Setting (k=3):** Prevalence 38.8% [25.3%, 54.3%], I^2=96.6%

Test for subgroup differences: Q = 0.28, df = 2, p = 0.869 (no significant difference between subgroups)

Part 6: Publication Bias – Funnel Plot & Egger's Test

Egger's Test Results: Intercept = -14.804, t = -3.88, p = 0.002 (df=13)
Interpretation: A significant Egger's test ($p < 0.05$) suggests funnel plot asymmetry, which may indicate publication bias, small-study effects, or true heterogeneity. Visually inspect the funnel plot – missing studies in the bottom-left corner would suggest selective reporting of positive results.

Part 7: AI Assistant – Interpretation & Methodological Feedback

Critical Interpretation:
The meta-analysis, based on 15 studies, estimates a pooled prevalence of 35.4% (95% CI: 30.7% to 40.4%). This suggests that approximately one-third of the population under study exhibits the condition of interest. However, the interpretation is severely undermined by the extreme level of statistical heterogeneity (I^2 = 96.1%). An I^2 of this magnitude indicates that 96.1% of the observed variance is attributable

to true differences between studies rather than sampling error. Consequently, the 'average' prevalence of 35.4% should be viewed with extreme caution.

Methodological Feedback:
The extreme I^2 (96.1%) suggests significant clinical or methodological diversity that should be addressed through subgroup analyses or meta-regression to identify potential moderators. I recommend: (1) Reporting the Prediction Interval (PI) to illustrate the range for future studies; (2) Conducting leave-one-out sensitivity analysis; (3) Performing funnel plot analysis and Egger's test to assess publication bias.

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Part 8: Sensitivity Analysis

Sensitivity Analysis Options:

- Changed Zero-Cell Event Handling Method
- Leave-one-out Analysis (exclude each study sequentially)
- Changed Statistical Model (Fixed vs. Random effects)
- Excluded Low-Quality Studies (based on QA scores)
- Excluded Outlier Studies (using influence diagnostics)
- Changed Effect Measure (proportion vs. logit vs. arcsine)

Comparison View: RevProHub displays base vs. sensitivity values side-by-side for pooled effect, CI, I^2, and Egger's p-value.

Part 9: Export Results & Add to Manuscript

Export as PDF
Full report with forest plot, tables

Export as DOCX
Editable for manuscript integration

Export as CSV
Raw data for external analysis

Add to Manuscript

Auto-inject into Manuscript Editor

🧪 Group Hands-On Activity: Prevalence Meta-Analysis (50 min)

1. **Access Data Synthesis:** Reporting Phase → Data Synthesis → Configure Analysis.
2. **Select Analysis Type:** Choose "Prevalence Meta-Analysis".
3. **Name Analysis:** "Hypertension Prevalence in HIV-Infected Adults - Training".
4. **Select Extraction Form:** Choose form with sample_size and case_count fields.
5. **Select Studies:** Choose 10-15 included studies with completed prevalence data.
6. **Map Fields:** Map Sample Size (N) → sample_size; Cases (n) → case_count.
7. **Set Model:** Random-Effects (recommended for heterogeneous data).
8. **Run Analysis:** Click "Run Analysis". Review forest plot, pooled prevalence, and I^2 heterogeneity.
9. **Add Subgroup Analysis:** Clone the analysis → add subgroup by "country" or "setting" field. Compare subgroup prevalence and I^2 values.
10. **Meta-Regression:** Run analysis with moderator "publication_year". Interpret p-value and R^2.
11. **Publication Bias:** View funnel plot and interpret Egger's test p-value.
12. **Export & Add to Manuscript:** Export results as PDF. Use "Add to Manuscript" to inject into manuscript.

Debrief Questions:

- What is the difference between meta-analysis of prevalence and meta-analysis of effectiveness?
- How do you interpret an I^2 of 90% or higher in a prevalence meta-analysis?
- What transformation does RevProHub use for proportion data, and why?
- How can subgroup analysis help explain high heterogeneity?
- What does a significant Egger's test indicate about your prevalence meta-analysis?

💡 Best Practices for Prevalence Meta-Analysis

Recommendations:

- Use random-effects model when $I^2 > 50\%$ (heterogeneity expected in prevalence studies)
- Report the Prediction Interval (PI) alongside CI to show the range for future studies
- Perform sensitivity analysis (leave-one-out) to identify influential studies
- Use double-arcsine transformation for better variance stabilization with proportions near 0 or 1
- Assess publication bias using funnel plots AND Egger's test (not just visual inspection)
- Report subgroup analyses even if not statistically significant – transparency about heterogeneity sources

Prevalence Meta-Analysis Completion Checklist:

✔ Analysis configured with correct field mapping (N and n)
✔ Random-effects model selected (for heterogeneous data)
✔ Forest plot reviewed with pooled prevalence and CIs
✔ Heterogeneity assessed (I^2, Q-test)
✔ Subgroup analysis performed (if applicable)
✔ Meta-regression explored (if applicable)
✔ Publication bias assessed (funnel plot + Egger's test)
✔ Results exported and/or added to manuscript
✔ AI interpretation reviewed and incorporated

→ **Next:** Meta-Analysis of Effectiveness (2x2 tables) for binary outcomes.

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Practical Session: Qualitative Meta-Aggregation

JBI Meta-Aggregation | Theme Synthesis | 60 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Understand JBI Meta-Aggregation methodology for qualitative evidence synthesis
- Configure qualitative meta-aggregation analysis in RevProHub
- Map extraction form fields (Finding, Category, Excerpt, Credibility) to synthesis parameters
- Interpret synthesized findings with categories, findings, and illustrative excerpts
- Assess evidence density and credibility across aggregated themes
- Export qualitative synthesis results and add to manuscript
- Use AI Assistant for methodological feedback on qualitative synthesis

Part 1: What is Qualitative Meta-Aggregation?

JBI Meta-Aggregation is a systematic approach to synthesizing qualitative research findings. It aggregates findings into categories and synthesizes these categories into synthesized statements.



Findings

Individual themes from primary studies



Categories

Aggregated groups of similar findings



Synthesized Statements

Interpretive summaries



Credibility

Unequivocal / Credible / Unsupported

📖 **JBI Framework:** Findings are extracted as verbatim themes with illustrative quotes. Similar findings are grouped into categories. Categories are then aggregated into synthesized statements that represent the overall phenomenon.

⚙️ Part 2: Configuring Qualitative Meta-Aggregation

Navigate to: **Reporting Phase → Data Synthesis → Configure Analysis → Meta-Aggregation (Qualitative)**

Step 1: Basic Information
- Analysis Name: "Meta-Aggregation: HIV/NCD Patient Lived Experiences"
- Select Data Extraction Form: "Qualitative Meta-Aggregation" (must contain fields for findings, excerpts, categories, credibility)

Step 2: Select Studies
- Choose studies marked as "Included" after full-text screening
- Only studies with completed qualitative extraction data appear

Step 3: Data Mapping & Settings
Map the following fields from your extraction form:

- **Finding/Theme Field:** The verbatim theme or finding
- **Category Field:** Your synthesized category
- **Illustrative Excerpt Field:** Direct participant quote
- **Credibility Field:** Unequivocal / Credible / Unsupported
- **Page Number Field:** Source page reference

⚙️ **Field Mapping Importance:** Correct mapping ensures RevProHub can properly aggregate findings by category, display illustrative quotes, and calculate evidence density (number of findings per category).

Part 3: Qualitative Extraction Form – Required Fields

Field Name	Description	Example
Finding (Theme)	Verbatim theme from primary study	"Religion as a management strategy"
Illustrative Excerpt	Direct participant quote	"I believe God will heal me so I miss some doses..."
Category	Reviewer's synthesized category	"Cultural Beliefs"
Credibility	Unequivocal / Credible / Unsupported	Unequivocal
Page Number / Source	Study citation and page	Dube A (2025), p.14

Part 4: Synthesized Results Output

Synthesized Qualitative Evidence (JBI Meta-Aggregation)

> **Summary:** Synthesized 8 categories from 20 findings across 17 studies.

Category: Cultural Beliefs

Synthesized Statement: Evidence regarding Cultural Beliefs across 2 studies with 2 findings.

Finding	Illustrative Excerpt	Credibility
"Religion as a management strategy"	*"I believe God will heal me so I miss some doses..."* Dube A (2025), p.14	Credible
"Indigenous knowledge systems"	*"We prefer to use our local herbs because we trust them..."* Chagwena DT (2024), p.12	Credible

Category: Health System Barriers

Synthesized Statement: Evidence regarding Health System Barriers across 4 studies with 4 findings.

Finding	Illustrative Excerpt	Credibility
"Long waiting times at the facility"	*"I wait from 8am until 4pm just to see the nurse..."* Mutesi (2021), p.5	Credible
"Breach of patient autonomy"	*"The doctor does not listen to my preference..."* Daba W (2025), p.8	Credible

Category: Social Stigma

Synthesized Statement: Evidence regarding Social Stigma across 4 studies with 4 findings.

Finding	Illustrative Excerpt	Credibility
"Community discrimination"	*"People look at you differently when you have both HIV and diabetes..."* Banda (2022), p.15	Unequivocal
"Loss of patient privacy in prison"	*"Everyone in the cell knows my status because the guard shouts my name..."* Fuge TG (2024), p.125	Unequivocal

📊 **Evidence Density Indicator:** Shows number of findings per category – higher density indicates stronger thematic saturation.

🧠 Part 5: AI Assistant – Qualitative Interpretation & Methodological Feedback

💬 Critical Interpretation:
The meta-aggregation reveals a thematic landscape heavily weighted toward systemic and external impediments rather than internal or cultural factors. 'Socio-economic Barriers' (5 studies), 'Social Stigma' (4 studies), and 'Health System Barriers' (4 studies) exhibit the highest conceptual saturation, suggesting these are the most robust and cross-validated drivers of the phenomenon. From a policy perspective, the high saturation of socio-economic and health system barriers suggests that interventions should prioritize structural reform rather than relying solely on educational or behavior-change initiatives.

⚙️ Methodological Feedback:
The primary concern is uneven 'evidence density' across categories. Several categories based on single findings (n=1) risk 'noise' where idiosyncratic results might be mistaken for universal themes. Recommendations: (1) Use JBI ConQual to grade confidence in findings; (2) Conduct sensitivity analysis to check if overlapping studies are driving the synthesis; (3) Document whether categories reached thematic saturation.

✅ Was this helpful? Copy to clipboard

🏅 Part 6: Credibility Levels (JBI ConQual)

✔ Unequivocal (High)
Finding is directly supported by

ℹ Credible (Moderate)
Finding is plausible but not directly supported by verbatim quotes

? Unsupported (Low)
Finding lacks sufficient supporting data

participant quotes with no contrary evidence

📋 Use credibility ratings to assess the confidence in each finding. JBI ConQual system translates credibility + dependability into overall confidence scores (High/Moderate/Low).

Part 7: Export & Integration

Export as PDF
Full qualitative synthesis with tables

Export as DOCX
Editable for manuscript integration

Add to Manuscript
Stage synthesis for Manuscript Editor

Clone & Edit
Modify mapping and re-run analysis

🧪 Group Hands-On Activity: Qualitative Meta-Aggregation (50 min)

1. **Access Data Synthesis:** Reporting Phase → Data Synthesis → Configure Analysis.
2. **Select Analysis Type:** Choose "Meta-Aggregation (Qualitative)".
3. **Name Analysis:** "Training Meta-Aggregation: HIV/NCD Experiences".
4. **Select Extraction Form:** Choose "Qualitative Meta-Aggregation" form (created in Session 2.6.12).
5. **Select Studies:** Choose 5-10 included qualitative studies with completed extraction data.
6. **Map Fields:** Map Finding Field → finding_verbatim; Category Field → synthesis_category; Excerpt Field → illustrative_excerpt; Credibility Field → interpretation_credibility.
7. **Run Analysis:** Click "Run Analysis". Wait for synthesis to complete.
8. **Review Results:** Examine the synthesized table. Note categories, findings, illustrative excerpts, credibility ratings, and density indicators.
9. **AI Assistant Review:** Expand AI Assistant section. Read the critical interpretation and methodological feedback. Copy key insights.
10. **Export Results:** Export as PDF and DOCX. Click "Add to Manuscript" to stage for manuscript editor.

Debrief Questions:

- How does JBI meta-aggregation differ from thematic synthesis?
- What does evidence density tell you about a category's robustness?
- Why is credibility assessment important for qualitative evidence synthesis?
- How can AI Assistant feedback improve your qualitative synthesis methodology?
- When would you use meta-aggregation vs. meta-ethnography?

💡 Best Practices for Qualitative Meta-Aggregation

Recommendations:

- Ensure each finding has a corresponding illustrative excerpt – improves credibility
- Group findings by conceptual similarity, not just keyword matching
- Aim for at least 2-3 findings per category for thematic saturation
- Include page numbers for traceability and auditability

- Use JBI ConQual to grade overall confidence in synthesized findings
- Report both categories with high AND low density – transparency about evidence gaps
- Include AI Assistant interpretation as supporting methodological reflection

Qualitative Synthesis Completion Checklist:

✔ Meta-aggregation analysis configured with correct field mapping
✔ Studies with completed qualitative extraction selected
✔ Findings aggregated into categories
✔ Synthesized statements generated for each category
✔ Evidence density reviewed (number of findings per category)
✔ Credibility ratings assessed (Unequivocal/Credible/Unsupported)
✔ AI Assistant interpretation reviewed and incorporated
✔ Results exported and/or added to manuscript
✔ Ready for qualitative findings reporting in manuscript

→ **Next:** Mixed-Methods Synthesis – integrating quantitative and qualitative evidence.

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Practical Session: Report Generator

Custom Reports | Template Builder | 60 minutes

◎ Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the RevProHub Reports Dashboard and understand report lifecycle
- Create new reports using pre-defined or custom templates
- Build custom report templates using JSON structure (PRISMA, study lists, exclusion tables)
- Generate reports with auto-populated sections (PRISMA diagram, QA charts, data extraction)
- Export reports as DOCX or PDF for manuscript submission
- Add report sections directly to the Manuscript Editor
- Regenerate and manage existing reports

Part 1: Reports Dashboard

Navigate to: **Reporting Phase â†' Report Generator â†' Project Reports**



Existing Reports
View, regenerate, delete



New Report
Create from templates



Manage Templates
Create/edit JSON templates

ðŸ"‹ **Report Actions:** View, Regenerate (refresh data), Delete. Reports are generated once and can be regenerated when underlying data changes.

Part 2: Creating a New Report

Navigate to: **Reports Dashboard â†' New Report**

1. **Enter Report Title** â€“ e.g., "Final Systematic Review Report - GLP-1 Agonists"

2. **Select a Template** â€“ Choose from pre-existing templates (PRISMA diagram, study characteristics, exclusion reasons, data extraction summary, QA charts, etc.)

3. **Click "Create and Generate"** â€“ System compiles real-time project data into the report

Available Pre-Defined Templates:

PRISMA 2020 Flow Diagram
Automatic flow diagram from screening data

Characteristics of Included Studies
Table of study metadata (title, authors, year, journal, DOI)

Excluded Studies with Reasons
Full-text exclusions with exclusion reasons

Quality Assessment Chart
Risk of bias visualization

Data Extraction Summary
Extracted data per study

Synthesized Data Charting
Meta-analysis results and forest plots

Part 3: Template Builder â€“ Creating Custom Report Templates

Navigate to: **Reports Dashboard â†' Manage Templates â†' Create New Template**

Templates are JSON-based structures defining report sections. Each section has a `type` (e.g., `prisma_flow_diagram`, `study_list`, `full_text_exclusion_reasons_table`) and customizable `title`.

Template Snippet Library

Basic PRISMA Report

```
{
  "sections": [
    {
      "title": "PRISMA 2020 Flo
      "type": "prisma_flow_diag
    },
    {
      "title": "Characteristics
      "type": "study_list",
      "columns": ["title","auth
    }
  ]
}
```

Full Report with Exclusions

```
{
  "sections": [
    {"title":"PRISMA 2020 Flow
    {"title":"Studies Excluded
    {"title":"QA Diagram","type
    {"title":"Characteristics o
  ]
}
```

Complete Standard Report

```
{
  "sections": [
    {"title":"PRISMA 2020 Flow
    {"title":"QA Diagram","type
    {"title":"Studies Excluded
    {"title":"Characteristics o
    {"title":"Data Extraction S
    {"title":"Data Extraction C
  ]
}
```

ðŸ“š **Available Section Types:**

- `prisma_flow_diagram` â€“ Auto-generated from screening data
- `study_list` â€“ Table of included studies (requires `columns` array)
- `full_text_exclusion_reasons_table` â€“ Excluded studies with reasons
- `quality_assessment_chart` â€“ Risk of bias visualization (from QA module)
- `data_extraction_summary` â€“ Extracted data per study (from consensus data)
- `data_extraction_chart` â€“ Generic table builder for extracted data

Part 4: Report Output Example

Generated Report Sections (example):

- **PRISMA 2020 Flow Diagram:** Interactive SVG with copy/download options
- **Studies Excluded at Full-Text Stage:** Two-column table (Title + Exclusion Reasons)
- **Characteristics of Included Studies:** Multi-column table with study metadata
- **QA Diagram:** Risk of bias chart (if QA data available)
- **Data Extraction Summary:** Extracted data per included study

Title	Authors	Year	Journal	DOI
Effectiveness of Semaglutide for Weight Management	Wilding JPH et al.	2021	NEJM	10.1056/NEJMoa2032183
Liraglutide and Cardiovascular Outcomes in T2D	Marso SP et al.	2016	The Lancet	10.1016/S0140-6736(16)30517-2
Tirzepatide versus Semaglutide for Obesity	Jastreboff AM et al.	2022	NEJM	10.1056/NEJMoa2206038

Part 5: Export & Integration

Export as DOCX
Editable Word document for manuscript submission

Export as PDF
Print-ready format for stakeholders

Add to Manuscript
Inject sections into Manuscript Editor

âœï¸ **Adding to Manuscript:** Each report section has an "Add to Manuscript" button. Clicking it stages the content (table, diagram, or text) for insertion into the Manuscript Editor. Select which manuscript to add to.

Part 6: Managing Templates

âœï¸ **Edit Template:** Modify existing JSON structures â€“ update section titles, add/remove columns, change section order

ðŸ—‘ï¸ **Delete Template:** Remove custom templates (system templates are protected)

ðŸ”„ **Regenerate Report:** After data updates (new studies, changed screening decisions, new extraction data), regenerate to refresh all sections

ðŸ§ª Group Hands-On Activity: Report Generator (45 min)

1. **Access Reports Dashboard:** Reporting Phase â†’ Report Generator â†’ Project Reports.
2. **Review Existing Reports:** Note the list of previously generated reports. Observe status (Complete) and available actions (View, Regenerate, Delete).
3. **Create a New Report:** Click "New Report". Title it "Training Report â€“ PRISMA + Study Characteristics".
4. **Select Template:** Choose "Characteristics of Included Studies" template. Click "Create and Generate".
5. **View Generated Report:** Review the PRISMA flow diagram (auto-populated from screening data) and the study characteristics table.
6. **Export as DOCX:** Click Export â†’ DOCX. Download and open to verify table formatting.
7. **Create Custom Template (Advanced):** Go to Manage Templates â†’ Create New Template. Name: "Advanced Report Template".
8. **Build JSON Structure:** Copy the "Complete Standard Report" snippet from the library. Paste into Content Structure editor. Save.
9. **Generate Report from Custom Template:** Create new report â†’ select "Advanced Report Template" â†’ generate.
10. **Add Section to Manuscript:** In the generated report, locate the "Characteristics of Included Studies" section. Click "Add to Manuscript". Select your manuscript from dropdown. Confirm.
11. **Regenerate Report:** Make a change in screening (e.g., exclude a study). Return to reports â†’ click "Regenerate" on your report. Verify the excluded study no longer appears in the included studies table.

Debrief Questions:

- What is the advantage of JSON-based template building over fixed report formats?
- How does the "Regenerate" feature ensure report accuracy as the review progresses?
- When would you use the "Add to Manuscript" button vs. exporting as DOCX and copying manually?
- What section types would you include in a final Cochrane-style systematic review report?
- How does the PRISMA flow diagram auto-populate from screening data ensure reproducibility?

Best Practices for Report Generation

Recommendations:

- Generate a "baseline" report after completing screening but before extraction â€“ serves as a progress snapshot
- Create custom templates for different audiences (technical report for researchers, summary report for policymakers)
- Use the "Add to Manuscript" feature for seamless integration â€“ avoids copy-paste errors
- Regenerate reports after major data updates (e.g., after conflict resolution, after extraction completion)
- Export final reports as PDF for submission to journals or stakeholders
- Keep template JSON files version-controlled for auditability

Integration with Review Workflow

From Data to Report:

- 1ï¸âƒ£ **Screening** â†’ PRISMA flow diagram, excluded studies list
- 2ï¸âƒ£ **Quality Assessment** â†’ Risk of bias charts
- 3ï¸âƒ£ **Data Extraction** â†’ Extracted data tables, outcome summaries
- 4ï¸âƒ£ **Data Synthesis** â†’ Meta-analysis results, forest plots
- 5ï¸âƒ£ **Report Generator** â†’ Compiles all into customizable report
- 6ï¸âƒ£ **Manuscript Editor** â†’ Sections added for final publication

Report Generator Completion Checklist:
âœ“ Report created using pre-defined template
âœ“ PRISMA flow diagram verified against screening data
âœ“ Study characteristics table reviewed for completeness
âœ“ Excluded studies table verified with reasons
âœ“ Custom JSON template created and tested
âœ“ Report exported as DOCX and PDF
âœ“ Report sections added to Manuscript Editor

âœ” Report regenerated after data update
âœ” Final report ready for stakeholder sharing

→ **Next:** Manuscript Editor â€“ finalizing publication-ready systematic review manuscripts.

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Practical Session: Manuscript Editor

Real-Time Writing | Version Control | 60 minutes

Practical Session Objectives:

By the end of this hands-on session, participants will be able to:

- Navigate the Manuscript Dashboard and manage manuscript versions
- Create new manuscripts and edit content using the rich text editor
- Insert citations from the project library with auto-generated bibliography
- Add staged content (PRISMA diagrams, QA charts, meta-analyses) from reports
- Create minor and major versions to track manuscript evolution
- Export manuscripts as DOCX or PDF for journal submission
- Understand auto-injected appendices (search strategies, eligibility frameworks)

Part 1: Manuscript Dashboard

Navigate to: **Reporting Phase → Manuscript Editor → Manuscripts**

Version History
Track all manuscript versions

Create New
Start a new manuscript

Version Control
Minor/Major versioning

Export
DOCX / PDF formats

Version Table Columns: Version (v1.0, v2.0), Title, Status (Draft/Published), Last Updated, Updated By, Actions (View, Edit, Export, Archive, Delete).

Part 2: Creating a New Manuscript

Navigate to: **Manuscripts Dashboard → Create New Manuscript**

1. Enter manuscript title (auto-populated from project, but editable)
2. Select a template (optional – pre-populates structure)
3. Click "Create" – automatically creates Version 1.0 as Draft

Part 3: Manuscript Editor Interface

Effectiveness of GLP-1 Agonists for Weight Loss in Managing Obesity in Diabetic Patients: Systematic Review and Meta-Analysis

Abstract

> Rich text editor area with formatting toolbar (bold, italic, lists, links, tables). Auto-save every 30 seconds + manual save button.

Introduction

> This is a draft manuscript. Use the editor to write your systematic review following PRISMA guidelines.

Methods: Search Strategy

> Auto-injected search queries appear in Appendices section.

Results

> Staged content (forest plots, QA charts, tables) can be copied from the right sidebar.

Discussion

> Write interpretation of findings, limitations, and conclusions.

References

> Auto-generated from citations inserted during writing. Manage order via

bibliography modal.

Appendices: Search Strategies

Auto-injected from Search & Query Management module with query strings and performance summaries.

✏️ **Editor Features:**

- **Toolbar:** Headers, bold, italic, underline, lists (ordered/bulleted), links, tables, clean formatting
- **Auto-save:** Every 30 seconds – "Last Saved: Up to date" indicator
- **Manual Save:** "Save All" button for explicit save
- **Versioning:** "Create New Version" button for branching
- **Export:** DOCX and PDF directly from editor

99 Part 4: Citation Management

Search Library
Find studies by title/author

Select Multiple
Bulk insert citations

Drag & Drop
Reorder references

Auto-Generate
Bibliography from cited references

📚 **Citation Workflow:**

1. In the right sidebar, search the project library for a study
2. Click "Cite" button next to the reference – inserts inline citation like (Author, Year)
3. Reference automatically added to the References section
4. Click "Generate Now" to format bibliography in consistent style
5. Use "Manage Order" modal to drag/drop references into desired sequence

Part 5: Staged Content Integration

Staged Content from Reports: When you click "Add to Manuscript" from any report (PRISMA diagram, QA chart, meta-analysis results, excluded studies table), the content appears in the "Staged Content" sidebar.

- Each staged item includes: Title, formatted HTML content, "Copy HTML" button, and "Remove" button
- Copy the HTML and paste into the relevant manuscript section
- Examples: Forest plots, risk of bias charts, study characteristics tables, AI interpretations

Example Staged Content: Meta-Analysis Summary
Overall Pooled Effect (OR): 3.32 [95% CI: 2.23, 4.94], I^2 = 97.4%
AI Interpretation: The meta-analysis demonstrates a robust pooled effect but with extremely high heterogeneity (I^2=97.4%), indicating substantial variation across studies.

📋 **Copy HTML** → Paste into Results section → Preserves formatting, tables, and AI insights.

Part 6: Version Control

Minor Version (v1.1)
Typo fixes, small clarifications, non-substantive changes

Major Version (v2.0)
Significant rewrites, new analyses, journal resubmission

Archive
Preserve old versions without cluttering dashboard

Delete
Remove unwanted versions (with confirmation)

🔁 **Versioning Workflow:** Edit manuscript → Create New Version (minor or major) → New version created as copy → Continue editing. All previous versions remain

accessible from dashboard.

Part 7: Appendices – Auto-Injected Content

The following content is auto-injected into the Appendices section:

- **Search Strategies:** Complete query strings with source (Planning AI Built, AI Translated, Manual), save date, and performance summaries (database, total found, last executed)
- **Eligibility Framework:** PICO/PICo criteria from Planning Phase
- **PRISMA Flow Diagram:** Copyable as image from report view

Part 8: Export & Submission

DOCX Export
Editable Word document – ready for journal template application

PDF Export
Print-ready format – share with co-authors or submit to journals

📄 Exported manuscripts include all sections, formatted references, and appendices. Use for journal submission (e.g., BMC Systematic Reviews, JBI Evidence Synthesis, Cochrane Library).

🧪 Group Hands-On Activity: Manuscript Editor (45 min)

1. **Access Manuscript Dashboard:** Reporting Phase → Manuscript Editor → Manuscripts.
2. **Create New Manuscript:** Click "Create New Manuscript". Title: "GLP-1 Agonists for Weight Loss – Training Draft".
3. **Edit Introduction:** Open the manuscript → click "Edit". Write 2-3 sentences about the background of obesity and GLP-1 agonists.
4. **Insert a Citation:** In the right sidebar, search for "Wilding JPH". Click "Cite" next to the study. Verify citation appears inline and reference appears in References section.
5. **Generate Bibliography:** Click "Generate Now" in References section. Review formatted reference.
6. **Add Staged Content:** Go to Reports Dashboard → generate a PRISMA diagram report → click "Add to Manuscript". Return to Manuscript Editor → Staged Content sidebar shows the item. Click "Copy HTML" → paste into the "Methods" section.
7. **Create a New Version:** Click "Create New Version" → select "Minor Version (v1.1)". Verify new version appears in dashboard.
8. **Export as DOCX:** From the manuscript view, click "Export DOCX". Download and verify formatting.
9. **Review Appendices:** Scroll to the bottom of the manuscript. Verify search strategies are auto-injected with query strings and performance data.

Debrief Questions:

- What is the advantage of version control for systematic review manuscripts?
- How does the citation manager integrate with the project's study library?
- Why are appendices (search strategies, eligibility frameworks) auto-injected rather than manually typed?
- When would you use a minor vs. major version increment?
- How does staged content from reports improve efficiency and accuracy compared to manual copy-paste?

💡 Best Practices for Manuscript Writing in RevProHub

Recommendations:

- Create a major version before major revisions (e.g., after peer review, before resubmission)
- Use "Add to Manuscript" from reports instead of copying from external sources – ensures data consistency
- Generate bibliography only after completing all citation insertions
- Export as DOCX for final formatting in journal-specific template (e.g., BMC, PLOS ONE)
- Archive old versions instead of deleting – preserves audit trail for transparency
- Include AI Assistant interpretations in the Discussion section to support methodological transparency

Manuscript Editor Completion Checklist:

✔ Manuscript created with appropriate title
✔ All sections populated with content (Introduction, Methods, Results, Discussion)
✔ Citations inserted from project library
✔ Bibliography generated and formatted
✔ Staged content added from reports (PRISMA, QA, meta-analysis)
✔ Version control used (minor/major version created)
✔ Appendices verified (search strategies, eligibility frameworks)
✔ Manuscript exported as DOCX and PDF
✔ Ready for co-author review or journal submission

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