VIBE ROUNDS

Guided Discovery Protocol

AI-Augmented N-of-1 Case Research Methodology

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Overview

Vibe Rounds — Guided Discovery is an AI-augmented protocol for clinician-led, single-case research synthesis. Drawing on the Socratic framework underlying Vibe Rounds, it extends AI-assisted clinical reasoning from the bedside into a structured research workflow: enabling a clinician with one complex patient and an afternoon to move from raw case narrative to publication-compatible outputs.

Unlike population-scale informatics pipelines (EvAgg, ZebraMap), this protocol is case-first. It is designed to be run by the treating clinician, not an informatician, and produces structured outputs aligned to existing reporting standards (CARE guidelines, PRISMA-style search documentation) without requiring institutional infrastructure.

> **Core Thesis**
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> *"The individual pipeline steps exist elsewhere. The combination — run by a clinician, on their own case, in a single sitting, converging to CARE-compatible outputs via a Socratic-AI two-tier analysis — does not appear to exist as a named, described protocol."*

Section 1 — Seven-Stage Workflow

The Guided Discovery protocol proceeds across seven stages, moving from raw clinical narrative to a structured, decision-useful output package. Each stage maps onto a section of a publishable methods paper.

Stage	Name	What Happens	Standard Alignment
1	Index Case Structuring	Extract diagnosis-related and intervention-related term lists from the case narrative	CARE guidelines checklist fields

2	Comparator Identification	Use extracted terms as search seeds; identify 5 similar cases from PubMed and web	PRISMA-style search documentation
3	Aggregation & Cross-Comparison	Pool comparator case text into one dataset; compare against index case	Shared gene / phenotype / intervention criteria
4	Two-Tier Analysis	Tier 1: coded/structured view. Tier 2: full narrative/contextual view	Core methodological contribution
5	Analytic Ideation	Open-ended AI prompt: expand the option space for further analysis	Vibe Rounds Socratic mode
6	Selection of Analytic Menu	Choose from candidate analyses (timeline, gene map, intervention scoring, gap analysis, risk trajectory, lab patterns)	Transferable menu for other clinicians
7	Convergence to Outputs	Four standard deliverables: severity rating, priority rating, patient journey timeline, intervention–symptom correlation table	Publication-ready package

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Section 2 — Two-Tier Analysis Methodology

The Two-Tier Analysis is the protocol's core methodological contribution. It explicitly separates two epistemically distinct views of the same case — a separation rarely made in clinical case report methodology, where a single synthesised narrative typically blends both.

Tier 1 — Coded / Structured View

Input: diagnosis-related and intervention-related terms extracted in Stage 1.

What this captures: what a structured database, registry, or coding system (ICD, SNOMED) would capture about this case.

What it misses: clinical reasoning, sequencing of events, contextual weighting, temporal patterns, and narrative logic.

Tier 2 — Narrative / Contextual View

Input: full unstructured text of the index case narrative.

What this captures: the clinician's reasoning, the sequence in which findings emerged, which symptoms were weighted and why, and the interpretive logic that codes strip away.

What it misses: comparability across cases (every narrative is differently structured).

> **Why Both Tiers Matter**
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> Running both tiers on the same case exposes what structured coding captures and what it loses. In rare or multi-system cases, the narrative often contains diagnostic signal that codes systematically erase. The two-tier split makes this erasure visible and analysable — a clinically useful epistemic move.

Section 3 — Worked Example: Triple Energy Pathway Case

The protocol was developed and validated using a complex index case: a 42-year-old female presenting with severe recurrent oedema and suspected convergence of three independent energy-pathway lesions.

3A. Index Case Summary

Parameter	Detail
Patient	42F — severe recurrent oedema, multi-system fatigue pattern
Suspected Diagnoses	G6PD deficiency · AMPD1 deficiency · GSD Type III/IX (VUS, pending biopsy)
Framework	"Triple Energy Pathway Deficit" — novel clinical synthesis
Status	First-of-its-kind combination in literature; individual components well-characterised

3B. Novelty Assessment

The honest framing from literature search:

- **The bricks are well-known:** G6PD's role in NADPH/glutathione/oxidative stress is extensively characterised. AMPD1's role in ATP regeneration during exertion is well established. GSD III/IX's role in glycogen mobilisation is classic metabolic biochemistry.
- **The wall is new:** No published case report, review, or framework combines G6PD deficiency + AMPD1 deficiency + GSD type III/IX into a single 'triple energy pathway' syndrome or diagnostic concept. The specific combination returns nothing in searchable literature.
- **The caveat:** GSD III/IX remains a VUS, unconfirmed pending biopsy. The 'triple' framing's durability is contingent on that confirmation. The protocol paper, however, is independent of this outcome.

3C. Stage-by-Stage Walkthrough

1. **Index case structuring:** Extracted two clean term lists (diagnosis-related; intervention-related) from the 2019 case narrative. Mapped onto CARE checklist fields.
2. **Comparator identification:** Used extracted keywords as PubMed/web seeds; identified 5 cases with overlapping genetic/metabolic profiles or phenotype clusters.
3. **Aggregation:** Pooled full comparator case text into one dataset; cross-compared against index case for shared features and divergence points.
4. **Two-tier analysis:** Level 1 (coded terms only) vs Level 2 (full unstructured narrative) — surfaced what structured coding missed in a multi-system rare phenotype.
5. **Analytic ideation:** Open prompt generated six candidate analyses: symptom–trigger–intervention timeline; gene interaction network map; intervention response scoring; literature gap analysis; risk trajectory modelling; lab value pattern analysis.
6. **Selection:** Narrowed to four immediately actionable deliverables (see 3D).
7. **Convergence:** Standard output package produced (see 3D).

3D. Standard Output Package

Deliverable	Description	Purpose
Severity Rating per Diagnosis	Each confirmed/suspected diagnosis rated by clinical impact severity	Clinical prioritisation
Priority Rating per Diagnosis	Ranked by urgency of confirmation / intervention	Decision support
Patient Journey Timeline	Condensed chronological sequence of symptom emergence, investigations, and interventions	Narrative synthesis
Intervention–Symptom Correlation Table	Maps each intervention to its observed symptom relief or non-response	Treatment pattern analysis

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Section 4 — Positioning Against Existing Pipelines

System	Scale	Operator	AI Role	Gap Addressed
EvAgg	Population / cohort	Informatician	Automated batch query	Variant-level gene evidence at scale
ZebraMap	36,000+ cases	Informatician	LLM parsing of case text into structured fields	Population-level rare disease knowledge map
Fabry AI Review	Large dataset	Research team	Prospective patient identification	Population-first rare disease detection

Vibe Rounds Guided Discovery	N=1 (index case)	Treating clinician	Conversational Socratic co-pilot	Bedside-to-desk synthesis in a single session

The Guided Discovery protocol occupies a space none of the above tools address: the treating clinician who needs to make sense of one unusual patient now, without institutional informatics infrastructure, in a workflow that is reproducible and publication-compatible.

Section 5 — Source Documentation

All source links underlying this document are listed below for citation, reproducibility, and version tracking.

5A. Clinical Case Foundations

Complex Index Case — 42F Triple Energy Deficit

Primary case used as the worked example. Demonstrates the 'first of its kind' triple energy pathway synthesis (G6PD + AMPD1 + GSD III/IX).

- **Case narrative (2019):** https://classworkdecjan.blogspot.com/2019/05/42-f-with-severe-regular-edema-with_17.html?m=1

Common Hospital Case — 55M Diabetic Patient

Used to demonstrate how the protocol prevents diagnostic closure in routine clinical scenarios.

- **Case narrative:** https://chetanakorada.blogspot.com/2021/03/dr.html

5B. AI Analytics & Interaction Logs

Raw conversational data and outputs from multi-level internal analysis sessions on Claude.ai.

- **Session 1 — Term extraction and comparator search:** https://claude.ai/share/a710c8f4-1656-4087-876e-f415a84ca63c
- **Session 2 — Two-tier analysis and ideation:** https://claude.ai/share/b172def3-a09b-4b8a-a522-83b6e2bd2240
- **Session 3 — Case analytics output:** https://claude.ai/share/a4ba3737-8f69-4a13-b31d-b7177cd3dffb

5C. Protocol Documentation

Core protocol blog posts detailing the seven-stage workflow and two-tier analysis methodology.

- **Case-Based Guided Discovery and Research (2026-06-13):** https://classworkdecjan.blogspot.com/2026/06/case-based-guided-discovery-and-research.html
- **N-of-1 Complex Case and LLM-Based Analytics (2026-06-14):** https://classworkdecjan.blogspot.com/2026/06/n-of-1-complex-case-and-llm-based.html

5D. Project Hub

- **Vibe Rounds Website:** https://avi33tbtt.github.io

Vibe Rounds — Guided Discovery Protocol

Not AI replacing doctors. AI giving doctors the cognitive bandwidth to be their best.

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