

ACADEMIC PUBLICATION SET

VIEN GUT MODEL

Integrated Outpatient Care for Complex Chronic Multimorbidity

Part A — Foundations

Academic Publication Set — Vien Gut Model

DOCUMENT A.2

FOUNDATIONAL CONCEPT SET

WHAT — HOW — DATA-TO-OPERATE

Identification, Definition, and Separation of the Three Architectural Layers of the Vien Gut Model
Reading foundation for the entire publication set

Vien Gut Model — Academic Publication Set

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1. Document purpose

The Vien Gut Model is built on a three-layer architecture: WHAT — HOW — DATA-to-operate. These three layers appear throughout from Document A.0 to C.4 and serve as the common language of the entire publication set. However, they are not three colloquial terms — they are three concepts with clear boundaries, distinct scopes, and a non-substitutable relationship.

Document A.2 serves a single purpose: to identify and precisely define these three layers before the reader enters Part B (operational model) and Part C (verification targets). Readers — especially international reviewers unfamiliar with the WHAT–HOW–DATA framework — need to understand what the three layers are, where the boundaries between them lie, and why they cannot compensate for one another.

Document A.1 presented the EBM framework and identified the structural break point when applied to complex chronic multimorbidity. Document A.2 answers the next question: what exactly are the three layers that the Vien Gut Model builds to fill that gap. Document A.4 will subsequently elaborate each specific operational term in detail.

2. WHAT — The treatment knowledge layer

Designation	WHAT (What to do) — Evidence-based treatment knowledge layer
Definition	WHAT is the set of treatment targets, clinical principles, biochemical thresholds, drug recommendations, and disease management strategies established by international guidelines based on evidence from basic research, clinical trials, systematic reviews, and expert consensus.
Scope	Single-disease guidelines (EULAR [2], ACR [1], KDIGO [3], ESC [4], EASL [5], ADA [11], and equivalent organizations); international consensus on multimorbidity (NICE NG56 [6], JA-CHRODIS [7], WHO ICOPE [8]); treatment targets (treat-to-target, remission criteria); disease staging; drug use principles, contraindications, drug interactions; diagnostic criteria and guideline-based risk stratification.
Exclusions	WHAT does not include: operational procedures at healthcare facilities; methods for coordinating multiple guidelines on a single patient; longitudinal monitoring data activating decisions; or continuous feedback and adjustment mechanisms. All of these belong to HOW and DATA-to-operate.
Operationalization	In Part B, WHAT is present whenever the physician applies guideline principles: urate-lowering indications per ACR 2020 [1], CKD assessment per KDIGO 2024 [3], heart failure stratification per ESC 2021 [4], cirrhosis management per EASL 2018 [5]. In C.1, WHAT comprises 18 guidelines consistent on the crystal-free principle. In C.2, WHAT comprises guidelines on end-stage CKD preservation — KDIGO 2024 [3] establishing eGFR thresholds, CKD progression reduction strategies, and dialysis deferral criteria when preservation remains feasible. In C.3, WHAT comprises guidelines on heart failure decompensation prevention — ESC 2021 [4] guiding chronic heart failure management, ejection fraction maintenance, and emergency rehospitalization reduction. In C.4, WHAT comprises guidelines on decompensated cirrhosis management — EASL 2018 [5] establishing that complete alcohol abstinence is the prerequisite for hepatic recompensation, combined with albumin control, coagulation management, and portal complication surveillance.

Core point: WHAT is the great achievement of evidence-based medicine. The Vien Gut Model does not replace, does not modify, and does not bypass WHAT. The Vien Gut Model adds the two layers that WHAT — however good — cannot self-provide when the subject is a patient with complex chronic multimorbidity.

3. HOW — The clinical operations layer

Designation	HOW (How to operate) — Structured clinical operations layer
Definition	HOW is the clinical operational system — comprising procedures, role assignments, action

	thresholds, multidisciplinary coordination mechanisms, guideline conflict resolution mechanisms, and safety protection mechanisms — enabling the WHAT of guidelines to be applied to the right patient, at the right time, at the right level of safety, for patients with complex chronic multimorbidity in the outpatient setting.
Scope	The Clinical Conductor maintaining the longitudinal coordination axis; the multidisciplinary team operating as a sensor–response chain; T1–T4 risk stratification; phased treatment plan (4 phases); integrated polypharmacy governance; disease–disease / drug–disease conflict resolution; bidirectional referral safety valve; phase-based longitudinal monitoring cadence; opportunity window identification and maintenance mechanism; structured patient education and adherence assessment.
Exclusions	HOW does not replace WHAT — it is not a new treatment protocol. HOW is not a rigid protocol — it is a flexible operational architecture adapted to the patient’s disease profile. HOW is not software or an IT tool — although technology can support HOW deployment. HOW is also not an administrative management initiative — it is a clinical layer operated by physicians and the healthcare team.
Operationalization	B.1: the first clinical encounter activates HOW — stratification, specialist branching, routing back to the Clinical Conductor. B.2: 4-phase treatment plan per HOW. B.3: necessary conditions (HOW) and sufficient conditions (patient) for maintaining the opportunity window. B.4: patient role operational framework. B.5: enabling conditions and guideline conflict resolution.

Core point: HOW is the layer that the current EBM chain has not yet systematically designed for complex chronic multimorbidity. Without HOW, WHAT exists only in textbooks and guidelines — it cannot be converted into clinical outcomes for patients with four to seven severe diseases simultaneously, in the outpatient setting, over multiple years.

4. DATA-to-operate — The decision-activating data layer

Designation	DATA-to-operate — Operational data layer activating clinical decisions
Definition	DATA-to-operate is the dataset sufficient for action — not for storage. It is a longitudinal time-series monitoring data system designed to identify target organ injury, pathological spirals, downward trends, safety margins, opportunity windows, and break points — then activate corresponding clinical decisions.
Scope	Time-series data for each disease axis; action thresholds activating specific responses; trend dashboards for the Clinical Conductor; decision logs and audit trails for decision traceability; monitoring SLAs (service-level agreements) specifying frequency and responsibility; patient adherence and cooperation data; longitudinal imaging data (ultrasound, elastography, DECT).
Exclusions	DATA-to-operate is not “big data” — it does not require millions of records. It is not a conventional electronic medical record (EMR) — EMR stores, DATA-to-operate activates. It is not about collecting as much data as possible — but collecting the right data needed for decision-making. A single data snapshot is not DATA-to-operate — it must be a time series.
Operationalization	B.1: minimum paraclinical core generating the first baseline data. B.2: phase-specific data triggering phase transitions. B.3: time-series data determining whether the window is open or closed. B.4: patient adherence and competency data. B.5: enabling condition data and safety valve activation thresholds. C.1: caliper mm ² ultrasound data verifying crystal-free status. C.2: eGFR, creatinine, urine albumin time-series data verifying end-stage CKD preservation — dialysis deferral. C.3: BNP/NT-proBNP, EF, emergency hospitalization frequency data verifying heart failure decompensation reduction — stable ejection fraction maintenance. C.4: Child–Pugh, MELD, Fibroscan, albumin data verifying hepatic recompensation — restoring decompensated patients to a compensated state.

Core point: DATA-to-operate is the condition for HOW not to operate blind. Without DATA-to-operate, the Clinical Conductor makes decisions based on isolated snapshots, personal memory, and estimation — instead

of traceable trends. In complex chronic multimorbidity, decisions based on isolated snapshots represent a measurable clinical risk.

5. Relationship between the three layers — non-substitutable, non-compensatory

The three layers WHAT–HOW–DATA-to-operate are neither three hierarchical levels nor three alternatives. They are three structural components of the same architecture — the absence of any layer prevents the remaining two from producing sustainable clinical outcomes in patients with complex chronic multimorbidity.

Combination	Status	Clinical consequence
Strong WHAT + weak HOW + weak DATA	Knows what to treat but cannot organize it, cannot see trends	Guidelines remain on paper. Multimorbid patients fall into fragmented care, opportunity window lost, adverse events increase
Strong WHAT + strong HOW + weak DATA	Procedures organized but decisions made on isolated snapshots	System operates but blind to trends. Break points missed, responses delayed, safety valve activated too late
Strong WHAT + strong HOW + strong DATA	Complete architecture: knows what must be done, organizes how to do it, sees trends for continuous adjustment	Predictable clinical outcomes: crystal-free, dialysis deferral, cardiac decompensation reduction, hepatic recompensation — when necessary and sufficient conditions are simultaneously met

Illustration from practice: Document B.2 describes a case of a patient with severe complicated gout accompanied by CKD G4 and chronic heart failure. WHAT (gout + CKD + heart failure guidelines) was fully available. But without HOW — the Clinical Conductor resolving conflicts between renal-safe urate-lowering drugs and heart failure drugs, phasing treatment, coordinating the MDT — and without DATA-to-operate — eGFR + uric acid + BNP + structural ultrasound time series — the three guidelines would still conflict on the same patient with no one resolving them.

6. The three layers in the context of complex chronic multimorbidity

In single-disease treatment at mild to moderate stages, WHAT is often sufficient: one guideline, one physician, one protocol, one follow-up cadence. HOW and DATA-to-operate still exist but in implicit form — the physician self-organizes work, self-recalls patient history. The system still functions because complexity is low.

When a patient simultaneously carries four to seven severe chronic diseases on a single debilitated body — complicated gout + CKD G4–5 + heart failure + cirrhosis + diabetes mellitus + glucocorticoid-induced adrenal insufficiency — complexity increases exponentially. The number of disease–disease, drug–disease, and target–target conflict combinations exceeds the implicit processing capacity of any physician. Implicit HOW becomes insufficient. Memory-based DATA becomes unsafe.

This is the structural reason: complex chronic multimorbidity mandates all three layers — WHAT explicitly designed from guidelines, HOW explicitly designed with structure and role assignment, DATA-to-operate explicitly designed as time series with activation thresholds. Not because single-disease care is easier — but because the complexity of multimorbidity exceeds the threshold at which implicit operations can safely function.

Document A.3 (The Global HOW Gap) presents international evidence confirming this gap. Document B.5 (Enabling Conditions) illustrates concretely why even skilled physicians coordinating across specialties cannot resolve conflicts without the HOW + DATA-to-operate architecture.

7. Scope limitations of this document

This document includes: identification, operational definition, scope, exclusions, and operationalization of the three layers WHAT–HOW–DATA-to-operate; analysis of the structural relationship between the three layers; and explanation of why complex chronic multimorbidity mandates all three layers.

This document does not include: the EBM framework and structural break point (see A.1); international evidence on the HOW gap (see A.3); detailed definitions of individual operational terms (see A.4); the standardized glossary (see A.5); specific HOW operational procedures (see B.1–B.5); or clinical evidence on target organs (see Part C).

8. Position within the Vien Gut documentation system

Document A.2 sits between A.1 (theoretical EBM framework) and A.3 (evidence of the global HOW gap), serving as the bridge: A.1 identifies the break point → A.2 defines the three layers that fill that gap → A.3 confirms the gap with international evidence → A.4 elaborates operational terms in detail. Simultaneously, A.2 is the foundational reading document for understanding all of Part B and Part C — where the three layers are operationalized into procedures and verification targets.

9. Conclusion

WHAT, HOW, and DATA-to-operate are the three foundational architectural layers of the Vien Gut Model. WHAT serves as the treatment knowledge standard — inherited intact from international guidelines. HOW serves as the operational organizer — converting knowledge into structured, role-assigned, and controllable action. DATA-to-operate serves as the decision guide — converting discrete data into signals that activate timely action.

In the context of patients with complex chronic multimorbidity — the patient group that global medicine acknowledges lacks a complete operational solution — the separation and simultaneous integration of these three layers is a mandatory architectural condition. This is not a new theory. It is the systematization of 18 years of integrated clinical practice at Vien Gut Polyclinic — where these three layers have been operated, verified, and continuously improved on thousands of patients with complex chronic multimorbidity.

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