ACADEMIC PUBLICATION SET

# VIEN GUT MODEL

Integrated Outpatient Care for Complex Chronic Multimorbidity

**Part A — Foundations**

Academic Publication Set — Vien Gut Model

## DOCUMENT A.0
## ARCHITECTURAL DECLARATION

Four Verification Targets on Target Organs
as the Central Reference Framework of the Publication Set

**Vien Gut Model — Academic Publication Set**
First Systematic Compilation — March 2026
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## HOW AND DATA-TO-OPERATE DESIGN CONTRIBUTORS — VIEN GUT

**Nguyễn Đình Quang Huy** HOW — DATA-to-operate design contributor | Operational management, transfer coordination — Vien Gut Model

**Huỳnh Phước Đại**, **Nguyễn Sơn** Patient-language editorial | Communications data governance, deployment and transfer support — Vien Gut Model

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## ACADEMIC SUPPORT & WHAT (GUIDELINE) BENCHMARKING — INTERNATIONAL EXPERT GROUP

**Nicola Dalbeth** Co-author of ACR Recommendations 2012 and 2020.

**Thomas Bardin**, **Pascal Richette** Co-authors of EULAR Recommendations — together with experts in cardiology, nephrology, hepatology, diabetology, diagnostic imaging, and biostatistics at Université Paris Cité, France, and Sorbonne University. Transfer of WHAT from treatment guidelines for gout and comorbidities; international benchmarking of WHAT; HOW design support — Vien Gut Model.

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## DATA GOVERNANCE TEAM — VIEN GUT

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## TREATING PHYSICIAN GROUP + MULTIDISCIPLINARY TEAM — VIEN GUT POLYCLINIC

Clinical HOW deployment: risk stratification, opportunity window, longitudinal monitoring, risk management, polypharmacy governance, referral safety valve activation — Vien Gut Model.

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## RESEARCH SITE

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# 1. What is the central subject of this publication set

This publication set is not about gout.

Gout is the starting point — the disease from which Vien Gut began building the model, accumulating data, and developing the operational framework over 18 years of clinical practice. However, the central subject this publication set addresses is a larger and more urgent problem:

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| **Central question** | How can integrated outpatient care be delivered for patients with complex chronic multimorbidity — when international guidelines already provide the WHAT but lack the HOW and DATA-to-operate? |

This is a question for which global medicine does not yet have a complete operational answer. International guidelines — EULAR, ACR, KDIGO, ESC, EASL — all specify the WHAT: what the treatment targets are, which drugs are effective, and which parameters require monitoring. Yet no single guideline describes the HOW for simultaneously coordinating multiple guidelines on a single patient with four to seven severe diseases concurrently, in the outpatient setting, over multiple years, when every decision on one disease axis may cause harm on another.

That gap — the HOW and DATA-to-operate gap — is the central subject of this publication set. The three-layer WHAT–HOW–DATA-to-operate framework is defined in detail in Document A.1 (EBM Framework) and A.2 (Foundational Concept Set). International evidence confirming this gap is presented in A.3 (The Global HOW Gap).

# 2. Gout is the only exemplary case permitting explicit verification

Among severe chronic diseases, gout possesses a characteristic shared by no other: the ultimate treatment target — complete dissolution of monosodium urate crystals (crystal-free) — can be verified directly by imaging at the time of assessment. OMERACT ultrasound and DECT allow visualization of urate crystals in joints, tendons, and soft tissues — and visualization of their disappearance when treatment achieves target.

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| **Objective target** | The ultimate treatment target (crystal-free) can be verified directly by imaging at the time of assessment — without requiring indirect inference through biomarkers or functional indices. |
| **Verification tools** | OMERACT ultrasound (caliper $mm^2$) and DECT — enabling visualization of deposited urate crystals before treatment, and visualization of their dissolution after treatment. |
| **Methodological nature** | Gout permits the most objective verification of integrated care outcomes among complex chronic diseases — because the treatment target is a physical structure that can be observed, measured, and compared before and after. |

## 2.1. The unique methodological characteristics of gout

In chronic disease management, most treatment targets are functional or biochemical: HbA1c for diabetes mellitus, eGFR for CKD, EF for heart failure, Child–Pugh for cirrhosis. These targets reflect treatment outcomes indirectly — through biomarkers or functional indices — but do not allow direct visualization of how the underlying pathological lesion is changing under treatment.

Gout is the sole exception. The ultimate treatment target for gout — complete dissolution of monosodium urate crystals (crystal-free) — can be verified directly by imaging at the time of assessment. OMERACT ultrasound records the process of crystal dissolution in real time — enabling confirmation that the target has been achieved without indirect inference. This characteristic rests on a clear pathophysiological basis: gout is a crystal deposition disease. When serum urate concentration is maintained below the dissolution threshold (<6 mg/dL per EULAR/ACR), urate crystals gradually dissolve and disappear.

This is why gout is the ideal case for building and verifying an integrated care model: not because gout is more important than other diseases, but because gout permits the most explicit and objective outcome verification among complex chronic diseases. The closed verification loop — from treatment initiation → longitudinal

monitoring → crystal-free confirmation by imaging — is the methodological precondition the model requires to self-validate before extending to the remaining three targets.

### 2.2. Patients with severe complicated gout = patients with complex chronic multimorbidity

Patients with severe complicated gout at Vien Gut are not single-disease patients. They present with severe gout concurrently accompanied by CKD stage 3–5, chronic heart failure, decompensated cirrhosis, diabetes mellitus, and glucocorticoid-induced adrenal insufficiency (GIAI) — constituting a complex chronic multimorbidity population in which gout is merely one component disease.

It is precisely this patient group — not patients with uncomplicated gout — for whom the model was built to serve. And it is precisely on this patient group that the HOW gap in international guidelines manifests clearly and cannot be bridged by any single-disease protocol. Document B.5 (Enabling Conditions) illustrates this concretely through two anonymized cases, DTH and LAU — the furthest boundary the model was able to hold.

## 3. Four verification targets — the central reference framework

After 18 years of integrated clinical practice at Vien Gut, a natural structure converged from practice: the four most severe disease axes in the Vien Gut patient cohort — gout, kidney, cardiovascular, and liver — all involve target organs with measurable injury using standardized modalities. Integrated intervention produces measurable outcomes on each of these target organs:

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| **C.1 Crystal-free** | Complete dissolution of urate crystals at the time of assessment — verified by caliper mm² ultrasound and/or DECT. 155 patients achieved crystal-free status (07/2024–01/2026). |
| **C.2 Renal preservation** | Preservation of end-stage CKD — delaying dialysis in the context of complex chronic multimorbidity. Verified by eGFR, creatinine, and urine albumin time series. |
| **C.3 Cardiac decompensation reduction** | Reduction of heart failure decompensation — reducing emergency hospitalizations and maintaining stable ejection fraction (EF). Verified by BNP/NT-proBNP, EF, and hospitalization frequency. |
| **C.4 Hepatic recompensation** | Hepatic recompensation — restoring decompensated Child–Pugh A/B patients to a compensated state. Verified by Child–Pugh, MELD, Fibroscan, and albumin time series. |

These four targets are not four targets of gout — they are four targets of four independent severe chronic diseases, concurrently present in a single patient group, simultaneously managed within an integrated outpatient model.

The separation between four verification targets on target organs and enabling conditions was not a design decision — it was an observational result from 18 years of integrated clinical practice at Vien Gut. This structure converged naturally because it reflects how the patient's body actually operates under the burden of complex chronic multimorbidity — not how medical specialties are organized within the healthcare system.

## 4. Verification targets and enabling conditions — two distinct tiers

Not every disease in the Vien Gut patient cohort constitutes an independent verification target. Clinical practice naturally separates into two tiers:

### 4.1. Verification targets — Tier 1

Four diseases with specifically injured target organs, measurable by standardized imaging or functional assessment, and capable of recovery or stabilization when the model operates correctly. These are the four targets listed in Section 3.

### 4.2. Enabling conditions — Tier 2

Several other diseases are managed as conditions that enable the four verification targets to be achieved safely — not as independent targets:

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| **Diabetes mellitus** | HbA1c control to prevent worsening of CKD, heart failure, and cirrhosis — not an independent verification target but an enabling condition for all four axes. |
| **Hypertension** | Blood pressure control to protect the kidney and reduce cardiac afterload — enabling condition for C.2 and C.3. |
| **Dyslipidemia** | Overall cardiovascular risk management — enabling condition for C.3. |
| **Glucocorticoid-induced adrenal insufficiency** | Identification and management of GIAI — a critical enabling condition due to the risk of sudden multi-organ decompensation under physiological stress. |
| **Anemia, malnutrition** | Maintaining a physical condition safe enough for treatment — baseline enabling condition for all targets. |

Enabling conditions does not mean clinically less important. It means: within this model, they are managed not to achieve independent targets — but to keep the opportunity window of the four verification targets from closing. The architecture of enabling conditions is presented in detail in Document B.5, including the pathological spiral, the disease–disease / drug–disease conflict resolution matrix, and control thresholds according to updated guidelines.

## 5. Why the model was built in the outpatient setting

The HOW gap exists across all care settings. However, in the inpatient setting, it is obscured by concentrated resource layers unavailable to outpatients: on-site multidisciplinary consultation, continuous monitoring, on-duty nursing staff, and 24/7 emergency response. When the patient leaves the hospital, all of these layers disappear — and the HOW gap is exposed in full.

Precisely because the outpatient setting lacks these concealing resources, the HOW must be explicitly designed from the outset: who decides what, when, based on which data, with what response SLA, and when to activate the referral safety valve. This is why the model built in the outpatient setting can be systematized into documentation and transferred — whereas inpatient HOW typically remains embedded in team culture and cannot be written as structured documentation. Part B (B.1–B.5) describes this HOW architecture in detail — from the first clinical encounter (B.1) to the phased treatment plan (B.2), opportunity window (B.3), patient role (B.4), and enabling conditions (B.5).

The Vien Gut Model was built under LMIC outpatient conditions from the start — not adapted downward from a large hospital model. It requires basic ultrasound, standard laboratory tests, and structured HOW — elements feasible at any LMIC outpatient facility meeting minimum conditions.

## 6. How the five parts of the publication set serve the four targets

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| **Part A — Foundations** | A.0: Architectural Declaration (this document). A.1: EBM Framework WHAT–HOW–DATA. A.2: Foundational Concept Set. A.3: The Global HOW Gap. A.4: Operational Concept Set. A.5: Standardized Glossary. |
| **Part B — Operations** | B.1: First Clinical Encounter. B.2: Outpatient Treatment Plan. B.3: Opportunity Window Conditions. B.4: Patient Role. B.5: Enabling Conditions and Prioritization Principles. |

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| **Part C — Verification Targets** | C.1: Crystal-free. C.2: Renal Preservation. C.3: Cardiac Decompensation Reduction. C.4: Hepatic Recompensation. Each document is a multi-center verification invitation. |
| **Part D — Expansion** | D.1: Multi-center Verification. D.2: LMIC Transfer. D.3: Limitations. D.4: Global System Vision. |
| **System Architect** | The system architect responds to the international medical community through questions and answers about the people, methods, evidence, safety, limitations, and vision of the Vien Gut Model. |

# 7. The spirit of this publication set

This publication set does not claim to have found the definitive answer. It is the academic systematization of an 18-year practice journey — with all its gaps, limitations, and open questions honestly acknowledged in Part D.

The guiding spirit throughout: the WHAT of international guidelines is fully respected. The HOW and DATA-to-operate are not theoretical products — they are the result of systematization from practice, built under the coordination of the Clinical Conductor and a multidisciplinary team operating as a sensor–response chain. The four verification targets are an invitation for dialogue and multi-center verification — not a unilateral assertion.

# 8. Scope limitations of this document

Document A.0 includes: a declaration of the central subject and the architecture of the publication set; an explanation of why gout is the first exemplary case; a presentation of the four verification targets and their distinction from enabling conditions; an explanation of why the model was built in the outpatient setting; and a map of the five parts of the publication set.

Document A.0 does not include: the three-layer EBM framework (see A.1); definitions of WHAT, HOW, and DATA-to-operate (see A.2); evidence of the HOW gap (see A.3); operational procedures (see B.1–B.5); or clinical evidence (see Part C).

# 9. Position within the Vien Gut documentation system

Document A.0 is the entry point of the entire publication set. The reviewer reads A.0 to learn: what this publication set is about (multimorbidity, not gout), why gout is the starting point, what the four verification targets are, and how the five parts are organized. After A.0, the reader proceeds to A.1 (EBM framework), A.2 (three-layer definitions), A.3 (gap evidence), then A.4–A.5 (terminology). From there, to Part B (operations) and Part C (verification targets).

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