ACADEMIC PUBLICATION SET

VIEN GUT MODEL

Integrated Outpatient Care for Complex Chronic Multimorbidity

Part A — Foundations

Academic Publication Set — Vien Gut Model

DOCUMENT A.4
OPERATIONAL CONCEPT SET

Identification and Definition of All HOW Terminology
Unified Reference for the Entire Publication Set

Vien Gut Model — Academic Publication Set
First Systematic Compilation — March 2026
Ho Chi Minh City, Vietnam

AUTHOR & ACADEMIC PRINCIPAL

Nguyễn Đình Quang
Independent medical researcher | Founder, Vien Gut | System architect of the HOW — DATA-to-operate / operational layer

---

HOW AND DATA-TO-OPERATE DESIGN TEAM — 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

---

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.

DATA GOVERNANCE TEAM — VIEN GUT

Trương Ánh Dương, **Huỳnh Hồng Đức** Data governance, transfer support — Vien Gut Model
Lê Việt Anh Data governance — Vien Gut

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.

RESEARCH SITE

Franco-Vietnamese Center for Research on Gout and Chronic Diseases, Vien Gut Polyclinic, 13A Hồng Hạ Street, Tân Sơn Hòa Ward, Ho Chi Minh City, Vietnam.

1. Purpose and compilation principles

Document A.4 is the central reference document of the Vien Gut Model academic publication set. Any international reviewer encountering a HOW term in any document from A.0 to C.4 can consult A.4 and find a precise, consistent, internationally cross-referenced definition.

Compilation follows three rules:

> **Rule 1 — Source transparency:**
> Each term is clearly classified: already existing in international literature (Group A), having equivalent meaning with different naming (Group B), or developed by Vien Gut from practical clinical operational needs (Group C).
>
> **Rule 2 — Operational definition:**
> Not theoretical definitions — but definitions describing how the term is used in clinical practice at Vien Gut.
>
> **Rule 3 — International cross-referencing:**
> Each term includes comparison with the closest concept in international guidelines or integrated care models, explaining similarities and differences.

2. Group A — Established international terms (7 terms)

Terms in Group A are used according to definitions already established by the international medical community — in guidelines, integrated care models, or WHO/UN documents. Vien Gut does not change their meaning, only applies them to the context of complex chronic multimorbidity in LMICs.

A-01. Treat-to-target (T2T)

Source: ACR 2020 [1], EULAR 2016 [2]

Operational definition

Treatment strategy in which drugs are titrated until a specific measurable target is achieved — in gout, sUA <6 mg/dL, maintained continuously until crystal-free. Vien Gut applies T2T simultaneously across four axes: gout (sUA), kidney (eGFR), heart (EF/NT-proBNP), liver (FibroScan/albumin).

International comparison / Differentiation

Original term: T2T was first defined in rheumatology (EULAR 2010 [24]) and applied to gout from EULAR 2016 and ACR 2020. The meaning in the Vien Gut Model is consistent with the original definition — extended to multi-axis but without altering the principle.

A-02. Crystal-free state

Source: EULAR 2006 [3], EULAR 2016 [2], ACR 2020 [1]

Operational definition

Clinical state in which monosodium urate crystals have been completely dissolved from all joints, tendons, and soft

tissues — confirmed by OMERACT ultrasound and/or DECT. This is Verification Target 1 of the Vien Gut Model and the only target in chronic medicine that can be verified directly by imaging.

International comparison / Differentiation

EULAR 2006 Recommendation 8 states the principle: when old crystals dissolve and new crystals cease forming, the patient is essentially 'cured'. 18 international guidelines from 2006–2022 agree on this principle. Vien Gut uses 'crystal-free' consistently with the international community — not 'remission' (which implies temporary) because crystal-free is a complete mechanistic target.

A-03. Complex chronic multimorbidity

Source: WHO 2016 [4], Barnett et al. Lancet 2012 [5]

Operational definition

The simultaneous presence of three or more severe chronic diseases in a single patient. In the Vien Gut Model, 'complex chronic multimorbidity' is characterized by: at least four severe diseases with target organ damage, treatment conflicts between guidelines, and no guideline describing integrated HOW.

International comparison / Differentiation

WHO 2016 [4] defines multimorbidity as ≥2 chronic conditions. Barnett et al. (Lancet 2012) [5] uses ≥2 conditions. Vien Gut uses 'complex' to distinguish the group with ≥4 severe diseases with target organ damage and treatment conflicts — not mere comorbidity. This aligns with the 'highly complex multimorbidity' tier in international literature.

A-04. Risk stratification

Source: CCM (Wagner 2001) [6], ESC [7], KDIGO 2024 [8]

Operational definition

Process of classifying patients into different risk tiers based on disease burden, clinical stability, and likelihood of adverse events — to determine monitoring frequency, response thresholds, and appropriate intervention intensity. Vien Gut uses 4 tiers (T1–T4).

International comparison / Differentiation

'Risk stratification' exists in many single-disease guidelines (ESC for heart failure, KDIGO for CKD, EULAR for complicated gout). Differentiating point in the Vien Gut Model: integrated multi-axis stratification — the risk tier is determined by the total disease burden across all four verification targets, not by each disease individually.

A-05. Integrated care

Source: WHO 2016 [4], CCM [6]

Operational definition

Model of organizing and delivering healthcare that coordinates specialties, levels of care, and service providers around patient needs — rather than organizing by individual diseases or independent specialties. In the Vien Gut Model, 'integrated' specifically means: a single outpatient model coordinating four verification targets simultaneously on the same patient.

International comparison / Differentiation

WHO 2016 [4] describes 5 integration strategies: by user, provider, service, system, financing. SELFIE Framework (EU 2017) classifies 6 dimensions. The Vien Gut Model is consistent with the WHO definition of integrated care — but adds a specific operational HOW layer that international frameworks lack.

A-06. Chronic Care Model (CCM)

Source: Wagner EH et al. Health Affairs 2001 [6]

Operational definition

Six-component framework developed by Wagner et al.: health system, community, self-management support, decision support, clinical information system, and delivery system design. Vien Gut is built on CCM principles but adds a specific operational HOW layer for the LMIC complex multimorbidity context.

International comparison / Differentiation

CCM is the most cited model in chronic care literature (>10,000 citations). It describes 'decision support' as one of 6 components — but does not define specific HOW when multiple guidelines conflict. This is the gap the Vien Gut Model fills.

A-07. Real-world evidence (RWE)

Source: FDA (2016) [28]; EMA; BMJ EBM

Operational definition

Clinical evidence generated from data collected in routine clinical practice — outside controlled clinical trial environments. RWE from the Vien Gut patient cohort is the foundation of the entire Part D (evidence and measurement).

International comparison / Differentiation

FDA (2016) defines RWE as evidence from 'real-world data' (RWD) — EHR, registries, claims data, device data. Vien Gut generates RWE from 18 years of longitudinal data from a severe multimorbid LMIC patient cohort — a population typically excluded from RCTs, making RWE from Vien Gut especially complementary.

3. Group B — Terms with equivalent meaning or different interpretation (18 terms)

Terms in Group B have equivalent concepts in international literature but Vien Gut uses different naming or interprets them in the LMIC complex chronic multimorbidity context. The purpose is not to create unnecessary new terminology — but to clarify specific scope when general international concepts need to be made explicit in operations.

B-01. HOW gap / Implementation gap

Source: WHO 'know-do gap' [9]; Implementation Science (Eccles & Mittman 2006) [10]; Grol & Grimshaw Lancet 2003 [11]

Operational definition

Structural gap between WHAT (international guidelines establishing treatment targets and drug choices) and clinical practice (clinicians knowing what to achieve but lacking integrated operational procedures to achieve it in complex chronic multimorbidity). The HOW gap differs from 'non-adherence' — this is a system problem, not an individual problem.

International comparison / Differentiation

WHO uses 'know-do gap' to describe the gap between scientific evidence and clinical practice. Implementation Science uses 'implementation gap'. Grol & Grimshaw (Lancet 2003) describes 'barriers to change in clinical practice'. Vien Gut uses 'HOW gap' to emphasize the specific missing layer — not a lack of motivation or knowledge, but a lack of operational structure.

B-02. Verification target

Source: T2T endpoint in EULAR/ACR; 'measurable target' in CCM; 'outcome indicator' in WHO ICOPE [12]

Operational definition

Treatment target verifiable by objective, standardized measurement modalities at a defined time point — not a qualitative target. In the Vien Gut Model, four verification targets were specifically selected because each has standardized imaging or functional verification modalities.

International comparison / Differentiation

In the literature, 'treatment target' and 'outcome' are used broadly. Vien Gut uses 'verification target' to emphasize the

requirement for objective verifiability — distinguishing from qualitative targets such as 'improved quality of life'. This is consistent with T2T endpoints in EULAR/ACR but extended to multi-axis.

B-03. Clinical Conductor

Source: Care coordinator in CCM [6]; Case manager in WHO ICOPE [12]; 'lead clinician' in NHS integrated care

Operational definition

The Clinical Conductor — an integrated coordinating physician — bears overall responsibility for the entire clinical picture of the patient with complex chronic multimorbidity: coordinating between specialties, making priority decisions when guidelines conflict, activating the referral safety valve, and maintaining continuity of care over time. In the Vien Gut Model, the Clinical Conductor operates via virtual MDT consultation with 24–48h SLA.

International comparison / Differentiation

CCM uses 'care coordinator' — but does not define cross-guideline priority decision authority. WHO ICOPE uses 'case manager' — focused on the elderly. NHS uses 'lead clinician' in integrated care. Vien Gut uses 'conductor' to emphasize the active orchestrating role — not merely passive coordination — most closely aligned with 'clinical conductor' in implementation science literature.

B-04. Fragmented care

Source: Health Affairs (Pham et al. 2007) [13]; WHO NCD Action Plan [14]; Guthrie et al. BMJ 2012 [15]

Operational definition

Care model in which each specialty applies its own guideline without structural coordination — leading to duplicate testing, unresolved treatment conflicts, missed events between visits, and high costs with poor outcomes. This is the default when single-disease EBM is applied to complex chronic multimorbidity patients.

International comparison / Differentiation

Health Affairs (Pham 2007 [13]) describes 'fragmented care' and its impact in Medicare. WHO NCD Action Plan calls for combating fragmentation. Vien Gut uses the term consistently with international literature — emphasizing this as a structural consequence, not an individual physician's fault.

B-05. DATA-to-operate

Source: Closest: 'clinical decision support data' in CDSS; 'operational data' in health informatics; 'point-of-care data' in WHO ICOPE

Operational definition

Longitudinal clinical data collected in a structured manner and used to activate HOW decisions in real time. Distinguished from research data: DATA-to-operate serves immediate individual clinical decisions, not long-term aggregate analysis.

International comparison / Differentiation

International literature uses multiple terms: 'actionable data', 'decision-relevant data', 'real-time clinical data'. Vien Gut uses 'DATA-to-operate' to explicitly distinguish from research data and administrative data — emphasizing the function of activating immediate clinical decisions. The closest concept in literature is 'operational clinical data' but this has not been standardized.

B-06. Operational MDT chain

Source: WHO Framework 2016 [4]; CCM [6]; NHS MDT guidelines; NICE multimorbidity guidelines

Operational definition

Multidisciplinary team organized not as a traditional periodic consultation board, but as a continuous operational chain with clear role assignments, bidirectional consultation, and shared responsibility for outpatient safety. In the Vien Gut Model, the MDT comprises seven functional components: (1) Imaging physician; (2) Laboratory personnel; (3) Clinical pharmacist (GPP); (4) Outpatient nurse/monitor; (5) Care coordination staff; (6) Visual Medicine staff; (7) Data/ops support.

International comparison / Differentiation

WHO and CCM describe MDT as one component of integrated care — but do not define specific operational structures.

NHS MDT guidelines describe role assignments in inpatient settings. NICE multimorbidity guidelines (2016) [25] recommend 'care coordination' and 'regular review' but do not describe a 7-component outpatient operational chain. Differentiating point: the Vien Gut MDT is organized as a sensor–response system — each component simultaneously serves as a sensor collecting clinical signals and a response point when signals exceed thresholds — rather than merely a periodic expert consultation panel.

B-07. WHAT–HOW–DATA-to-operate framework

Source: Closest: 'knowledge translation' framework (Graham et al. 2006) [16]; 'evidence to practice' pipeline; 'implementation framework' in Implementation Science

Operational definition

Three-layer framework fully describing what is needed to operate integrated care for complex chronic multimorbidity: WHAT (guidelines and evidence), HOW (structured clinical operational procedures), DATA-to-operate (longitudinal decision-activating data). This is the central framework of the Vien Gut Model.

International comparison / Differentiation

Knowledge translation framework (Graham 2006) describes the process from knowledge to action — closest to the spirit of WHAT–HOW–DATA. Implementation Science describes 'implementation drivers'. Vien Gut systematizes these three layers into a specific operational framework — not a research framework — for the LMIC outpatient multimorbidity context.

B-08. Dialysis deferral / Renal preservation

Source: KDIGO 2024 [8] — 'avoidance or deferral of RRT'

Operational definition

Verification Target 2 — outcome anchor on the renal axis: maintaining eGFR within a range not requiring dialysis as long as possible, through active renal protection concurrent with gout T2T in integrated outpatient care. Action threshold: eGFR decline >25% in 3 months → SLA shortened and monitoring tier escalated. Typical HOW conflict: EULAR/ACR requires increasing ULT dose to achieve T2T — KDIGO requires caution with renally-cleared drugs when eGFR <30.

International comparison / Differentiation

KDIGO 2024 describes 'conservative kidney management' and 'deferral of RRT' — consistent with the spirit of Verification Target 2. Differentiating point: this target is operated simultaneously with gout T2T (Target 1) in patients with both conditions — creating a structural HOW conflict no guideline resolves.

B-09. Cardiac decompensation prevention

Source: ESC 2021 [7] — 'prevention of decompensation' and 'reduction of HF hospitalization'

Operational definition

Verification Target 3 — outcome anchor on the cardiac axis: stabilizing EF, reducing emergency hospitalization frequency for decompensated heart failure, through active cardio-renal coordination concurrent with gout T2T. Typical HOW conflict: colchicine (gout flare treatment) interacts with heart failure drugs; NSAIDs retain fluid and increase preload; corticosteroids cause fluid retention and electrolyte disturbances. Action threshold: NT-proBNP sudden increase >50% → 24h SLA; EF decline >10% vs baseline → escalated monitoring.

International comparison / Differentiation

ESC 2021 [7] clearly describes 'prevention of decompensation' and evidence-based drugs for reducing hospitalization (SGLT2i, sacubitril/valsartan). Differentiating point: this target is operated simultaneously with gout T2T and renal protection on the same patient — creating a three-axis concurrent conflict context that ESC does not describe HOW for.

B-10. Hepatic recompensation

Source: EASL 2021 [18] — 'recompensation' first formally defined; Caraceni et al. J Hepatol 2021

Operational definition

Verification Target 4 — outcome anchor on the hepatic axis: achieving and maintaining recompensation in decompensated cirrhosis patients through structured integrated outpatient care. This is a target in the complete blind zone (double blind zone): no gout guideline mentions cirrhosis as an operational variable; no EASL guideline mentions gout. Absolute HOW conflict: allopurinol/febuxostat require special caution in hepatic failure; colchicine has

increased hepatotoxicity; NSAIDs are absolutely contraindicated; corticosteroids cause dangerous immunosuppression.

International comparison / Differentiation

EASL 2021 [18] defines 'recompensation' per Caraceni criteria — closest to Vien Gut Target 4. However, no hepatology guideline describes recompensation in patients simultaneously undergoing gout T2T — this is a double blind zone: two guidelines completely fail to cover their intersection.

B-11. Clinical SLA (Service-level agreement)

Source: ITIL Service Management; 'turnaround time' in laboratory; 'response time' in emergency

Operational definition

Response time commitment between MDT components: when a clinical signal exceeds threshold, SLA defines the maximum response time — not when convenient but within what mandatory timeframe. Vien Gut uses four SLA tiers: 4 hours (outpatient emergency), 12 hours (red alert), 24 hours (yellow alert), 48 hours (trend evaluation).

International comparison / Differentiation

SLA is a core concept in service management (ITIL). In healthcare, closest: 'turnaround time' in laboratory and 'door-to-balloon time' in cardiac emergency. However, no chronic outpatient model applies SLA to continuous monitoring between visits. Vien Gut transfers the SLA principle from service management to chronic outpatient multimorbidity — where no SLA concept exists in literature.

B-12. Necessary vs sufficient conditions

Source: Logic; 'necessary and sufficient conditions' in philosophy of science

Operational definition

Distinguishes two types of factors in model operation: necessary conditions are indispensable but insufficient for achieving results (e.g., having guideline WHAT is necessary but insufficient); sufficient conditions are the complete combination needed for results (WHAT + HOW + DATA-to-operate + patient cooperation). In Part B, this framework structures how the opportunity window is assessed.

International comparison / Differentiation

Formal logic distinguishes necessary/sufficient conditions. In clinical literature, closest: 'prerequisites' in surgical checklists, 'eligibility criteria' in trial design. Vien Gut applies this to outpatient care operations: mapping exactly which conditions are necessary and which combination constitutes sufficiency for each verification target.

B-13. Treatment burden

Source: May et al. 2009; Mair & May BMJ 2014 [26]; NICE NG56 (2016) [25]

Operational definition

The total burden placed on patients by the treatment itself: number of drugs, number of follow-ups, conflicting instructions, financial cost, time cost, psychological burden. In complex chronic multimorbidity, treatment burden becomes an independent variable capable of causing non-cooperation — even when WHAT is correct and HOW is well designed.

International comparison / Differentiation

NICE NG56 [25] is the first guideline formally using 'treatment burden' as a factor in clinical decisions. Mair & May (2014 [26]) describe 'burden of treatment theory'. Vien Gut operationalizes treatment burden as a measurable variable in the cooperation indicator (C-22) — when burden increases, cooperation decreases, HOW must compensate.

B-14. Opportunity window

Source: Closest: 'therapeutic window' in pharmacology; 'window of opportunity' in RA early treatment (van der Linden & Rensen 2015)

Operational definition

The time period during which the patient's clinical condition permits effective outpatient treatment toward verification targets — with acceptable risk. The opportunity window can open (sufficient conditions met), close (decompensation, safety valve exceeded), or fluctuate (unstable). Recognizing and maintaining the window is the core function of the

Clinical Conductor.

International comparison / Differentiation

'Therapeutic window' in pharmacology describes the dose range between efficacy and toxicity. 'Window of opportunity' in RA describes the early treatment period. Vien Gut's 'opportunity window' is a broader operational concept: the time period when the entire integrated care system can function safely in the outpatient setting — determined by multi-axis disease status, not single-drug pharmacology.

B-15. Phased treatment plan (4 phases)

Source: Closest: 'stepped care' in mental health; 'treat-to-target phases' in rheumatology

Operational definition

Treatment plan divided into four sequential phases, each with distinct objectives, monitoring cadence, and transition criteria: Phase 1 — Acute stabilization; Phase 2 — Titration; Phase 3 — Maintenance; Phase 4 — Crystal-free assessment. Phase transitions are activated by DATA-to-operate, not by arbitrary time intervals.

International comparison / Differentiation

'Stepped care' in mental health increases intervention intensity by step. Vien Gut's 4-phase plan differs: phases are specific to multimorbidity outpatient care with explicit multi-axis transition criteria, SLA changes per phase, and simultaneous management of four verification targets. No international model describes 4-phase treatment for outpatient complex multimorbidity.

B-16. GIAI (Glucocorticoid-induced adrenal insufficiency)

Source: Endocrinology literature; WHO adverse drug reaction classification

Operational definition

Adrenal insufficiency caused by prolonged exogenous corticosteroid use — a critical enabling condition in the Vien Gut Model due to the risk of sudden multi-organ decompensation under physiological stress. Detection: cortisol <3 µg/dL and/or ACTH suppressed. Specific danger in multimorbidity: GIAI may be masked by other symptoms, triggered by acute events, and cause cascade decompensation across all four axes simultaneously.

International comparison / Differentiation

GIAI is well-described in endocrinology literature. Differentiating point: in the Vien Gut Model, GIAI is elevated from a 'side effect to manage' to a critical enabling condition with specific safety valve thresholds — because in patients with CKD + HF + cirrhosis, adrenal crisis can trigger simultaneous decompensation of all four target organs.

B-17. Hepatorenal coordination in cirrhosis + gout

Source: Closest: 'hepatorenal syndrome' in hepatology; 'cardiorenal syndrome' (Ronco 2008 [19])

Operational definition

HOW for simultaneously coordinating the hepatic and renal axes in patients with cirrhosis + CKD + gout. Unique complexity: hepatorenal syndrome means kidney function deterioration is both a consequence of liver failure and a limitation on gout treatment (ULT dose reduction required). Triple interaction: cirrhosis limits drug metabolism → CKD limits drug excretion → gout requires drugs that stress both organs.

International comparison / Differentiation

Hepatorenal syndrome (HRS) is well-defined in hepatology. Cardiorenal syndrome (Ronco 2008 [19]) describes heart-kidney interaction. No framework describes the triple coordination of liver-kidney-gout in the outpatient setting.

B-18. Bidirectional referral safety valve

Source: Closest: 'escalation protocol' in ICU/ER; 'safety netting' in primary care

Operational definition

Pre-defined threshold system for two-way transfer between outpatient and inpatient settings: upward escalation when outpatient safety limits are exceeded; downward return when inpatient stabilization is achieved. The safety valve operates in standby mode parallel to scheduled visits — it does not replace scheduled follow-up.

International comparison / Differentiation

ICU/ER uses 'rapid response system' and 'escalation trigger'. Primary care uses 'safety netting'. No chronic outpatient model describes a bidirectional, threshold-based, multi-axis safety valve system operating between visits.

4. Group C — Terms developed by Vien Gut (35 terms)

Terms in Group C were developed by Vien Gut from practical clinical operational needs — when international literature lacked sufficiently specific equivalent concepts to describe what occurs in complex chronic multimorbidity practice at LMIC outpatient settings. Each term has a specific development rationale and is linked to 18 years of clinical practice at Vien Gut.

C-01. Clinical blind zone

Source: Developed by Vien Gut

Operational definition

Clinical zone where patients need treatment but are not served by any guideline — because medical evidence was generated in a different reference frame from the complex patient's reality. The clinical blind zone exists not because medicine lacks evidence — it exists because evidence was designed for single diseases while the patient simultaneously carries four to seven severe diseases with multi-organ damage.

International comparison / Differentiation

Closest: 'evidence gap' (IOM), 'under-researched population' (Guyatt 2011). None precisely describes the formation mechanism: not absolute evidence absence but reference frame mismatch. Vien Gut's 'clinical blind zone' differs from 'evidence gap': evidence gaps can be filled by new research; clinical blind zones — due to the infinite number of multimorbidity combinations — cannot be filled by RCTs and require a new operational reference frame.

C-02. Safety valve escalation protocol

Source: Developed by Vien Gut

Operational definition

System of pre-defined clinical thresholds — when any threshold is exceeded, the patient is referred or urgently intervened upon per defined SLA — without waiting for the next visit. Examples: K+ >6 mmol/L → 4h SLA; Hb <7 g/dL → 12h SLA; Cortisol <3 µg/dL → 4h SLA; NT-proBNP sudden increase >50% → 24h SLA.

International comparison / Differentiation

ICU/ER literature uses 'rapid response system' and 'escalation trigger'. Outpatient literature uses 'safety netting'. No concept describes an integrated multi-axis threshold system (four severe diseases simultaneously) in chronic outpatient care. 'Safety valve' is a technical metaphor: like a pressure valve in a system — when pressure exceeds threshold, the valve opens automatically to relieve pressure before the system fails.

C-03. Clinical priority map

Source: Developed by Vien Gut

Operational definition

Operational tool determining intervention priority order when single-disease guidelines conflict on the same patient. The clinical priority map answers: when CKD G4 requires reducing allopurinol dose and EULAR requires increasing ULT to achieve T2T — which axis takes priority, by what criteria, and for how long? This map is not fixed — it is updated based on longitudinal data and risk stratification.

International comparison / Differentiation

Closest: 'competing priorities in multimorbidity' (Tinetti 2004 NEJM [17]); 'clinical trade-offs' in shared decision-making. No framework provides a specific operational tool for resolving cross-guideline conflicts in real time. This is the gap the Vien Gut Model fills.

C-04. Structural fracture point

Source: Developed by Vien Gut

Operational definition

Point in the EBM chain (from basic research to clinical application) where the chain encounters a structural limit — not a fault of any component but the inevitable consequence when a system designed for single diseases faces complex chronic multimorbidity. The fracture point lies at step 8 (clinical application) of the EBM chain.

International comparison / Differentiation

Implementation Science describes 'implementation failure' and 'barriers to implementation'. Vien Gut distinguishes 'structural fracture point' from 'implementation failure': implementation failure implies fixable by better implementation — while a structural fracture point requires architectural system change (adding HOW and DATA-to-operate to the EBM chain), not just improved implementation.

C-05. Enabling conditions / Operational conditions

Source: Developed by Vien Gut

Operational definition

Comorbidities managed as prerequisites for the four verification targets to be safely achieved — not as independent targets. Diabetes mellitus, hypertension, chronic anemia, and glucocorticoid-induced adrenal insufficiency are enabling conditions in the Vien Gut Model. Managing them is mandatory to prevent the four main targets from failing — but they do not have independent verification axes.

International comparison / Differentiation

No international term precisely distinguishes 'verification target' from 'enabling condition' in complex chronic multimorbidity. CCM does not make this tier distinction. Vien Gut developed this distinction from clinical observation: some diseases must be controlled for other diseases to stabilize — but not all comorbidities are independent targets.

C-06. Guideline paradox

Source: Developed by Vien Gut

Operational definition

Common but rarely named situation: guidelines are built to deliver correct and safe treatment — but when applied to complex multimorbidity patients, 'following each guideline correctly' disease by disease can lead to an overall reference frame error. Consequence: treatment target conflicts, increased polypharmacy-interactions-toxicity, and patients sliding faster into decompensation. The paradox is not a guideline fault — it is the inevitable consequence when guidelines are applied outside the zone they were designed to be correct in.

International comparison / Differentiation

Closest: Tinetti 2004 (NEJM) describes 'potential pitfalls of disease-specific guidelines for patients with multiple conditions' [17]; Boyd & Fortin 2010 describe 'treatment burden' and 'competing priorities'. All these authors identify the phenomenon but do not name it as an independent concept. Vien Gut names it 'guideline paradox' to clearly separate: this is not 'non-compliance', not 'guideline error', but a 'reference frame phase mismatch' — requiring a new operational layer to resolve.

C-07. Reference frame mismatch

Source: Developed by Vien Gut

Operational definition

Foundational concept explaining why clinical blind zones and the guideline paradox exist: the reference frame in which evidence is generated (RCTs with clean populations, single-disease, controlled environments) is structurally different from the reference frame in which the evidence must be applied (complex multimorbid patients, multi-axis conflicts, outpatient with limited resources).

International comparison / Differentiation

Closest: 'external validity' in EBM; 'applicability' in GRADE. Vien Gut 'reference frame mismatch' goes further: not merely limited external validity but a systematic, structural mismatch — the design of the evidence system itself excludes the population that needs it most.

C-08. Blind zone map

Source: Developed by Vien Gut

Operational definition

Systematized documentation identifying and cataloging all clinical zones where guidelines do not cover the Vien Gut patient cohort. The blind zone map is not just a description of what is missing — it is an operational guide for the Clinical Conductor: when a patient enters a blind zone, the map indicates which conflict pairs exist, which axes interact, and what safety thresholds apply.

International comparison / Differentiation

No equivalent in international literature. Closest: 'gap analysis' in quality improvement. Vien Gut's blind zone map is a clinical operational tool — built from 18 years of practice data — not a retrospective research analysis.

C-09. Onboarding (first encounter activation)

Source: Developed by Vien Gut

Operational definition

Process of activating the complete operational system at the first clinical encounter: risk stratification, specialist branching, minimum paraclinical core, initial clinical priority map, patient capacity classification (A/B/C), SLA assignment, safety valve thresholds, and routing back to the Clinical Conductor. Onboarding transforms the patient from 'new case' to 'operational status within the model'.

International comparison / Differentiation

Closest: 'initial assessment' in clinical pathways; 'comprehensive geriatric assessment' in geriatrics. Vien Gut 'onboarding' differs: it activates the entire three-layer system (WHAT + HOW + DATA-to-operate) in a single structured encounter — not merely an assessment but a system activation event.

C-10. Phase transition trigger

Source: Developed by Vien Gut

Operational definition

Set of pre-defined criteria based on DATA-to-operate that determine when a patient transitions from one treatment phase to the next: Phase 1 → 2 (acute stabilized, ready for titration), Phase 2 → 3 (target achieved, maintenance mode), Phase 3 → 4 (sustained maintenance, ready for crystal-free assessment). Transitions are data-driven, not time-driven.

International comparison / Differentiation

Closest: 'step-up criteria' in stepped care; 'progression criteria' in clinical trials. Vien Gut 'phase transition trigger' is multi-axis: transition requires meeting criteria across all four disease axes simultaneously, not just the primary axis.

C-11. Emergency bridge

Source: Developed by Vien Gut

Operational definition

Pre-designed HOW for the period immediately after an acute event (emergency hospitalization, acute decompensation, intercurrent illness) — bridging the patient back into the outpatient model. The emergency bridge ensures continuity: treatment adjustments made during acute care are integrated into the outpatient plan, safety valve thresholds are recalibrated, and monitoring frequency is increased during the post-acute recovery period.

International comparison / Differentiation

Closest: 'transitional care' (Naylor 2004); 'discharge planning'. Vien Gut 'emergency bridge' is specifically designed for complex multimorbidity: not just discharge planning but re-integration into a multi-axis operational model, including recalibration of all four axes simultaneously after the acute event.

C-12. Clinical audit trail

Source: Developed by Vien Gut

Operational definition

Longitudinal record documenting the entire clinical decision chain — who decided what, when, based on which data, with which HOW threshold — in real time throughout treatment. The audit trail is not merely a medical record — it is a structured traceability chain enabling verification of every HOW decision and root cause analysis when outcomes miss targets.

International comparison / Differentiation

Health informatics uses 'audit trail' for security and legal purposes. NHS 'clinical audit' is periodic quality assessment. Vien Gut develops 'clinical audit trail' as a continuous learning tool — every HOW decision is recorded and can be analyzed to improve HOW for future patients. This is the foundation of the system learning loop in the Vien Gut Model.

C-13. Operational MDT / Sensing-response MDT

Source: Developed by Vien Gut

Operational definition

MDT organized not as a case-by-case consultation board but as a continuous operational chain with clear role assignments, bidirectional consultation, response SLAs, and shared responsibility for outpatient safety. The entire team simultaneously functions as a 'sensing-response system' — each member is a sensor detecting signals in their domain and proactively feeding back into the common operational chain. Seven roles: (1) Imaging physician; (2) Lab personnel; (3) Clinical pharmacist; (4) Outpatient nurse/monitor; (5) Care coordination staff; (6) Visual Medicine staff; (7) Data/ops support.

International comparison / Differentiation

MDT is well-established internationally. However, international MDT is primarily episodic consultation. Vien Gut MDT differs in three core ways: (1) continuous — not only when events occur but operating as a longitudinal sensing-response chain; (2) target-oriented — all members aim at the same patient's opportunity window, not single-axis optimization; (3) SLA-bound with cross-responsibility — each role has response thresholds connected to the Clinical Conductor's decision chain.

C-14. Double blind zone

Source: Developed by Vien Gut

Operational definition

Clinical situation where two guidelines for two severe comorbid diseases are both completely silent about their intersection: guideline A does not mention disease B, and guideline B does not mention disease A — leaving the clinician in a zone with no guidance whatsoever. Paradigm example: gout + decompensated cirrhosis — EULAR/ACR never mentions cirrhosis; EASL never mentions gout. Not only is HOW missing but WHAT is also not established for the integrated situation.

International comparison / Differentiation

Clinical blind zone describes the general case: patient not covered by any guideline. Double blind zone is a special and more severe case: two guidelines exist independently and are each complete within their scope — but their intersection is completely empty. Distinction: clinical blind zone can exist with a single disease when the patient falls outside RCT criteria; double blind zone exists only when two severe comorbid diseases co-occur and neither disease's guideline acknowledges the other's existence.

C-15. Multi-axis ULT titration

Source: Developed by Vien Gut

Operational definition

ULT (urate-lowering therapy) dose adjustment based not solely on sUA but simultaneously considering the status of three other disease axes: eGFR (allopurinol limitation in CKD G4–5), liver function (febuxostat limitation in cirrhosis Child B/C), and EF/diuretic load (colchicine interactions in heart failure). Each ULT dose increase requires simultaneous four-axis assessment.

International comparison / Differentiation

EULAR 2016 [2] and ACR 2020 [1] describe ULT titration per T2T principle: increase allopurinol/febuxostat every 2–4 weeks until sUA <6 mg/dL. Neither guideline describes HOW when the patient simultaneously has CKD G4, heart failure, and cirrhosis. Multi-axis ULT titration is the HOW concept Vien Gut developed to fill precisely this gap.

C-16. Constrained flare management

Source: Developed by Vien Gut

Operational definition

Strategy for controlling acute gout flares during ULT titration — when all three standard anti-inflammatory drug groups are simultaneously limited: NSAIDs (contraindicated in CKD G4, HF, cirrhosis), colchicine (caution when eGFR <30, P-glycoprotein interactions, hepatotoxicity), and corticosteroids (adrenal insufficiency risk, fluid retention, hyperglycemia, immunosuppression in cirrhosis).

International comparison / Differentiation

EULAR 2016 [2] recommends low-dose colchicine or NSAIDs or short-course corticosteroids for titration-phase prophylaxis. Neither guideline describes HOW when all three groups are simultaneously limited on the same patient. This is an absolute HOW gap.

C-17. Cardio-renal coordination in T2T

Source: Developed by Vien Gut

Operational definition

HOW for simultaneously coordinating two vital axes — heart and kidney — while concurrently executing gout T2T in outpatient complex chronic multimorbidity. Three-axis cross-interactions: (1) HF drugs (loop diuretics, thiazides) raise sUA → delay T2T; (2) ULT dose increase → increased renal load → worsened eGFR → increased HF decompensation risk; (3) colchicine interacts with digoxin and statins in HF.

International comparison / Differentiation

Cardiorenal syndrome (Ronco 2008 [19]) describes the mechanism of heart-kidney interaction. SGLT2 inhibitors benefit both. No literature describes HOW for cardio-renal coordination in the context of concurrent gout T2T in outpatient multimorbidity. This is a pure HOW concept — not derivable from any single-disease guideline.

C-18. Three patient zones (green/yellow/red by guideline coverage)

Source: Developed by Vien Gut

Operational definition

Patient classification by degree of guideline coverage: Green zone — patient within guideline coverage, HOW can rely on clear recommendations; Yellow zone — patient at guideline edge, some recommendations applicable but requiring comorbidity adjustment; Red zone — patient completely outside guidelines (clinical blind zone), HOW must be self-built from practice data and clinical principles.

International comparison / Differentiation

No international framework classifies patients by guideline coverage level. Closest: 'applicability assessment' in the GRADE framework. Vien Gut systematizes this into an operational tool helping the Clinical Conductor immediately identify which zone the patient is in — thereby determining the required level of clinical autonomy.

C-19. Patient capacity classification (A/B/C)

Source: Developed by Vien Gut

Operational definition

Three-tier classification of patient participation capacity: Level A — patient has sufficient awareness, motivation, and conditions for active treatment plan participation; Level B — patient has awareness but needs active support from family or team; Level C — patient has severely limited awareness or conditions, team must take full initiative. This classification determines individualized HOW design: SLA, contact frequency, communication channels, education level, and team resource allocation.

International comparison / Differentiation

Closest: Patient Activation Measure (PAM — Hibbard et al. 2004 [20]) measures patient self-activation on a 4-tier scale. Vien Gut A/B/C classification differs: it is not merely a measurement but an operationalized classification — each level determines specific HOW throughout the entire operational chain, not just participation level.

C-20. Eight sufficient conditions for patient participation

Source: Developed by Vien Gut

Operational definition

Eight conditions patients need to meet for effective participation in the integrated care model: (1) understanding own overall disease picture; (2) accepting long-term treatment strategy; (3) having home support or Level A self-sufficiency; (4) accessibility to healthcare facility per SLA; (5) financial capacity for treatment plan; (6) willingness to adhere to monitoring schedule; (7) ability to recognize basic warning signals; (8) no insurmountable language/cognitive barriers. When conditions are lacking, the team must design compensating HOW — not exclude the patient from the model.

International comparison / Differentiation

Closest: 'readiness assessment' in self-management support; 'shared decision-making prerequisites' in NICE. Vien Gut differs: 8 conditions are not exclusion criteria but HOW design maps — each missing condition generates a specific supplementary HOW requirement.

C-21. Structured patient education

Source: Developed by Vien Gut

Operational definition

Structured patient education program — not ad hoc counseling but systematic curriculum aligned with treatment phases: patients are trained to recognize warning signals, understand T2T principles, distinguish gout flares from cardiac/renal events, read basic test results, and know when to activate the safety valve. Content is adjusted by patient A/B/C capacity and current treatment phase.

International comparison / Differentiation

Closest: 'self-management education' in CCM; 'éducation thérapeutique du patient' (ETP) in French medical literature. Vien Gut develops patient education directly integrated into the operational chain — education content reflects exactly the HOW being applied to that specific patient, not general medical knowledge.

C-22. Cooperation as operational indicator

Source: Developed by Vien Gut

Operational definition

Converts patient cooperation from a subjective factor to a measurable operational indicator: visit adherence rate, test completion rate per SLA, medication compliance per pharmacist assessment, proactive contact when abnormal signals appear. Cooperation is not an ethical requirement but an operational variable — when the cooperation indicator drops, the team must investigate the cause and adjust HOW, not blame the patient.

International comparison / Differentiation

WHO 2003 [21] uses 'adherence'. Mair & May 2014 [26] describe 'treatment burden'. Vien Gut does not use 'adherence' (implying the patient must obey) but 'cooperation' — converting it into a bidirectional operational indicator: when the patient does not cooperate, the system must ask whether HOW was appropriate.

C-23. Patient behaviour science in operational care

Source: Developed by Vien Gut

Operational definition

Field of applying patient behaviour understanding into HOW design — not to change patients to fit the system but to design the system to fit actual patient behaviour. Includes: identifying behaviour patterns related to adherence/dropout, designing touchpoints at moments of highest patient receptivity, leveraging visual evidence to increase motivation, and integrating education into natural care workflows rather than adding burden.

International comparison / Differentiation

'Behavioural medicine' (Schwartz & Weiss 1978) and 'health behaviour change' (Michie et al. 2011 [22] — COM-B model) have strong theoretical foundations. Vien Gut contributes the operationalization: converting behaviour understanding into specific HOW in the outpatient operational chain.

C-24. Sensor–response chain

Source: Developed by Vien Gut

Operational definition

Sequential steps from signal collection to clinical action: (1) data collection → (2) threshold comparison → (3) response level classification → (4) action activation per SLA → (5) decision log recording → (6) outcome feedback → (7) threshold update if needed. Distinguished from 'sensor–response system' (describing MDT organizational architecture): 'chain' describes the operational sequence of a single component within the system; 'system' describes the overall architecture.

International comparison / Differentiation

In engineering, 'sensor–actuator chain' describes signal processing sequences. In healthcare, closest: 'clinical pathway'. Vien Gut 'sensor–response chain' is more precise: not the entire care pathway but the processing chain for each clinical signal from collection to action — the smallest operational unit of the sensing–response system.

C-25. Decision pivot

Source: Developed by Vien Gut

Operational definition

Point in the treatment journey where the Clinical Conductor must choose between conflicting action directions — not every decision but only decisions creating high-consequence branching. Examples: continue T2T or pause because eGFR is declining rapidly? Keep patient outpatient or activate safety valve? Transition phase or extend current phase? Decision pivots require: longitudinal data (DATA-to-operate), clinical priority map, and full audit trail recording.

International comparison / Differentiation

'Decision point' appears in clinical pathways and CDSS. Vien Gut 'decision pivot' emphasizes three characteristics: (1) a branching point that is not easily reversible; (2) requires simultaneous multi-axis consideration; (3) must be traceably recorded. This is not a routine decision but a strategic turning point — where the entire treatment plan's direction may change.

C-26. Decision log

Source: Developed by Vien Gut

Operational definition

Detailed record at each decision point (decision pivot): reasoning for choosing direction A over B, which data was used, which thresholds were triggered, and contingency plan if the decision does not meet expectations. Decision log differs from audit trail: audit trail records the entire action chain over time; decision log records the reasoning and context of each individual decision — serving retrospective analysis and HOW improvement for similar future patients.

International comparison / Differentiation

'Clinical documentation' in EHR records actions but rarely records reasoning behind them. 'Surgical time-out' records pre-action verification. Vien Gut decision log records reasoning — enabling tracing not just 'what was done' but 'why it was done' — the foundation for the system's learning feedback loop.

C-27. Pathological spiral

Source: Developed by Vien Gut

Operational definition

Positive feedback loop between comorbidities — deterioration on one axis causes deterioration on another, creating an accelerating decompensation spiral. Example: gout flare → NSAIDs → renal injury → increased sUA → more flares → more NSAIDs → worse kidney. Early identification of spirals is one of the most critical functions of the sensing–response system.

International comparison / Differentiation

International literature uses 'vicious cycle' across many fields (cardiorenal syndrome, sarcopenia–frailty cycle). Vien Gut systematizes 'pathological spiral' as an operational concept: not merely identifying but designing HOW to break the spiral — identifying the optimal intervention point (usually the axis with the widest opportunity window) and breaking the spiral through sequenced intervention.

C-28. Conflict resolution matrix

Source: Developed by Vien Gut

Operational definition

Matrix-format operational tool supporting the Clinical Conductor in resolving guideline conflicts on the same patient: each row is a disease axis, each column is a priority criterion (short-term mortality risk, recovery potential, evidence strength, drug interactions, treatment burden for patient). The matrix operationalizes adjudication — based on the clinical priority map and longitudinal data rather than individual experience. Adjudication results are recorded in the decision log.

International comparison / Differentiation

No equivalent tool in international literature. Closest: 'competing priorities framework' (Tinetti 2004) describes the phenomenon but provides no resolution tool. 'Priority-setting partnerships' (JLA) resolve research priorities, not individual clinical priorities. Vien Gut conflict resolution matrix is specific HOW for answering: when two guidelines demand opposite actions on the same patient, which axis takes priority and by what criteria?

C-29. Visual Medicine

Source: Developed by Vien Gut

Operational definition

Method of using standardized clinical images and videos (before–after treatment, longitudinal ultrasound series, soft tissue lesion photographs) as operational data — not illustrations but evidence. Visual Medicine serves three simultaneous objectives: (1) increasing patient compliance — patients see progress with their own eyes; (2) supporting the Clinical Conductor in assessing non-numerical trends; (3) providing verification data for the international community.

International comparison / Differentiation

In literature, 'clinical photography' and 'medical imaging' exist as diagnostic tools, not operational and compliance-enhancing tools. Vien Gut develops 'Visual Medicine' as an integrated concept: images simultaneously serve as clinical data, patient communication tool, and verification evidence — three functions in one.

C-30. Caliper mm² (crystal measurement)

Source: Developed by Vien Gut

Operational definition

Method of measuring urate crystal deposit size by ultrasound using digital caliper, recording each deposit area in mm² — instead of the OMERACT semi-quantitative 0–3 scale. Advantages: (1) detects small changes between assessments (e.g., 12.4 mm² → 9.8 mm² → 5.2 mm² → 0 mm²); (2) enables tracking crystal dissolution trend over time; (3) confirms crystal-free by objective measurement (0 mm²) rather than subjective assessment. This is the core DATA-to-operate for Verification Target 1.

International comparison / Differentiation

OMERACT 2015 [23] published the semi-quantitative ultrasound gout scale 0–3 (none — mild — moderate — severe). Vien Gut developed caliper mm² 9 years before OMERACT, enabling more precise quantification. The two methods do not conflict: caliper mm² adds a quantitative layer that the OMERACT scale does not provide — particularly necessary for longitudinal monitoring and crystal-free verification.

C-31. Learning feedback loop

Source: Developed by Vien Gut

Operational definition

System mechanism in which clinical outcomes and operational data are periodically analyzed to improve HOW: (1) outcome collection — decision log + audit trail + outcome data; (2) pattern analysis — which patients achieved targets, which did not, why; (3) HOW improvement — threshold adjustment, SLA, stratification, phase plans; (4) updated version deployment — procedure updates and team training. The learning feedback loop is the mechanism enabling the Vien Gut Model to self-improve over time — not static like guidelines but continuously evolving with data.

International comparison / Differentiation

'Learning health system' (IOM 2013 [27]) describes a healthcare system learning from data. PDSA (Deming) is a quality improvement method. Vien Gut applies this principle specifically to outpatient multimorbidity HOW — differentiating point: Vien Gut's feedback loop learns from data in the clinical blind zone — where no guidelines exist for benchmarking, so the system must generate knowledge from practice.

C-32. Opportunity window — operational criteria

Source: Developed by Vien Gut

Operational definition

Operationalized criteria set for assessing opportunity window status at each follow-up: Window 'still open' — biological trends not declining, decompensation risk controllable within outpatient limits; Window 'closing' — rapid deterioration trend, loss of symptom control, signs of organ decompensation, or inability to ensure timely SLA response — safety valve activation needed; Window 'closed' — patient has exceeded safe outpatient thresholds, requires inpatient or intensive intervention. All window status assessments must be recorded in the audit trail.

International comparison / Differentiation

Supplements the 'Opportunity window' definition with specific operational assessment criteria — converting from definition to procedure: the Clinical Conductor uses this criteria set at each decision pivot to determine the next action.

C-33. Integrated outpatient care model for complex chronic multimorbidity

Source: Developed by Vien Gut

Operational definition

Model of organizing and delivering healthcare where all complex chronic multimorbidity care is designed, deployed, and operated in the outpatient setting. Four structural characteristics distinguishing from international 'integrated care': (1) Outpatient as foundation — patients live at home, continuous monitoring between visits, safety valve when outpatient limits exceeded; (2) Simultaneous multi-axis integration — four verification targets operated in parallel, not sequentially by specialty; (3) Specific HOW architecture — procedures, SLAs, stratification, Clinical Conductor, operational MDT, opportunity window, safety valve; (4) DATA-to-operate — real-time longitudinal decision-activating data.

International comparison / Differentiation

International literature has many integrated care frameworks: WHO 2016 (5 strategies), CCM (Wagner 2001, 6 components), SELFIE (EU 2017, 6 dimensions), NICE 2016. All describe integrated care at the principle level. No framework describes specific HOW for outpatient complex chronic multimorbidity.

C-34. Chronic multi-organ damage

Source: Developed by Vien Gut

Operational definition

State of chronic structural and/or functional damage on multiple target organs simultaneously — distinguished from 'multi-organ dysfunction syndrome' (MODS) in emergency medicine. In the Vien Gut Model, chronic multi-organ damage describes patients with simultaneous organ injury on at least three axes: kidney (CKD G3–G5), heart (HF with reduced or preserved EF), liver (cirrhosis Child A–C), and/or joints/soft tissue (diffuse urate crystal deposition).

International comparison / Differentiation

'Multi-organ dysfunction' (MODS) in ICU describes acute multi-organ failure. 'Target organ damage' (TOD) in ESC describes damage from hypertension — single-disease. Vien Gut differs in three ways: (1) chronic — not emergency; (2) multi-axis — not from a single root disease; (3) cross-interacting — damage to one organ directly affects treatment capacity for another organ.

C-35. Multiple pathological spirals

Source: Developed by Vien Gut

Operational definition

State in which multiple pathological spirals operate simultaneously and cross-interact — creating a destructive resonance effect faster than any individual spiral. Example: Spiral 1 (gout–kidney): increased sUA → crystal deposition → chronic inflammation → renal injury → decreased urate excretion → further sUA increase. Spiral 2

(kidney–heart): decreased eGFR → fluid retention → increased preload → worsened HF → decreased renal perfusion → further eGFR decrease. Spiral 3 (heart–liver): HF → hepatic congestion → cardiac cirrhosis → decreased drug metabolism → increased toxicity → worsened HF. Identifying and breaking multiple spirals is the Clinical Conductor's strategic objective.

International comparison / Differentiation

'Pathological spiral' (C-27) describes a single spiral between two axes. 'Multiple pathological spirals' describes the multi-spiral resonance phenomenon — no equivalent term in international literature. Closest: 'cardiorenal syndrome' (Ronco 2008 [19]) describes a single heart–kidney spiral; 'hepatorenal syndrome' describes liver–kidney. No framework describes three or more simultaneously operating spirals and how to break them in outpatient care. This is why the Vien Gut Model requires multi-axis HOW architecture — single-disease guidelines cannot break multi-spiral cascades.

Strategic insight from Group C core concepts

From four core Group C concepts — clinical blind zone, guideline paradox, reference frame mismatch, and blind zone map — a clear strategic thesis emerges: The clinical blind zone does not exist because medicine lacks evidence — it exists because evidence was generated in a different reference frame from the complex patient's reality. The guideline paradox is not caused by faulty guidelines — but by guidelines applied outside the zone they were designed to be correct in.

From this foundational discovery, Vien Gut did not follow the infeasible path of 'writing more guidelines for every disease combination' — because combinations are infinite, RCTs cannot cover all, and adding guidelines does not resolve the mechanical conflicts between them. Vien Gut chose the breakthrough direction: building a longitudinal tracking database system within the blind zone (blind zone map) and designing an integrated outpatient operational layer — creating a new reference frame for complex clinical decisions. This is the shift from 'treatment dependent on individual capacity' to 'treatment based on the capacity of a structured system with data and safety valves.'

5. Cross-reference summary table — all terms

The table below summarizes all terms in Vietnamese alphabetical order, with English names and source group classification — for quick reference.

Code	Vietnamese term	English	Group
Group A — Established international terms			
A-01	Treat-to-target (T2T)	Treat-to-target (T2T)	A — International
A-02	Crystal-free	Crystal-free state	A — International
A-03	Đa bệnh lý mạn tính	Complex chronic multimorbidity	A — International
A-04	Phân tầng nguy cơ	Risk stratification	A — International
A-05	Chăm sóc tích hợp	Integrated care	A — International
A-06	Mô hình chăm sóc mạn tính (CCM)	Chronic Care Model (CCM)	A — International
A-07	Bằng chứng trong thực tế	Real-world evidence (RWE)	A — International
Group B — Terms with equivalent meaning or different interpretation			
B-01	Khoảng trống HOW	HOW gap	B — Equivalent

B-02	Đích kiểm chứng	Verification target	B — Equivalent
B-03	Bác sĩ nhạc trưởng lâm sàng	Clinical Conductor	B — Equivalent
B-04	Mô hình chăm sóc phân mảnh	Fragmented care	B — Equivalent
B-05	DATA-to-operate	DATA-to-operate	B — Equivalent
B-06	Ê-kíp đa ngành theo chuỗi vận hành	Multidisciplinary team — Operational MDT chain	B — Equivalent
B-07	Bộ khung WHAT–HOW–DATA-to-operate	WHAT–HOW–DATA-to-operate framework	B — Equivalent
B-08	Trì hoãn lọc thận	Dialysis deferral / Kidney function preservation	B — Equivalent
B-09	Giảm mất bù tim mạch	Cardiac decompensation prevention	B — Equivalent
B-10	Tái bù xơ gan	Hepatic recompensation	B — Equivalent
B-11	SLA theo dõi	Service-level agreement (SLA)	B — Equivalent
B-12	Điều kiện cần vs Điều kiện đủ	Necessary vs sufficient conditions	B — Equivalent
B-13	Onboarding (quy trình nhận BN vào mô hình)	Onboarding / Structured patient enrollment	B — Equivalent
B-14	Kế hoạch điều trị theo pha	Phase-based treatment plan	B — Equivalent
B-15	Đa bệnh lý mạn tính phức tạp	Complex chronic multimorbidity	B — Equivalent
B-16	Bảo tồn chức năng thận — suy thận mạn giai đoạn cuối	Kidney function preservation (end-stage CKD)	B — Equivalent
B-17	Giảm mất bù suy tim	HF decompensation prevention	B — Equivalent
B-18	Tái bù xơ gan giai đoạn cuối	Hepatic recompensation (end-stage)	B — Equivalent
Group C — Terms developed by Vien Gut			
C-01	Vùng mù lâm sàng	Clinical blind zone	C — Vien Gut
C-02	Van an toàn chuyển tuyến	Safety valve escalation protocol	C — Vien Gut
C-03	Bản đồ ưu tiên lâm sàng	Clinical priority map	C — Vien Gut
C-04	Điểm đứt gãy cấu trúc	Structural fracture point	C — Vien Gut
C-05	Điều kiện vận hành	Operational conditions	C — Vien Gut
C-06	Nghịch lý guideline	Guideline paradox	C — Vien Gut
C-07	Lệch hệ quy chiếu	Reference frame mismatch	C — Vien Gut
C-08	Bản đồ vùng mù	Blind zone map / Clinical blind zone database	C — Vien Gut
C-09	Hệ thống cảm biến–phản ứng	Sensor–response system	C — Vien Gut
C-10	Cửa sổ cơ hội	Window of opportunity (operational)	C — Vien Gut
C-11	Vòng 0–30 ngày tái tích hợp	0–30 day reintegration cycle	C — Vien Gut
C-12	Audit trail lâm sàng	Clinical audit trail	C — Vien Gut
C-13	Ê-kíp đa ngành theo chuỗi vận hành (MDT vận hành)	Operational MDT / Sensing-response MDT	C — Vien Gut
C-14	Vùng mù hoàn toàn / Vùng mù đôi	Double blind zone	C — Vien Gut
C-15	Chuẩn độ ULT đa trục	Multi-axis ULT titration	C — Vien Gut
C-16	Kiểm soát flare khi thuốc bị giới hạn	Constrained flare management	C — Vien Gut
C-17	Điều phối tim–thận trong T2T gút	Cardio-renal coordination in T2T	C — Vien Gut
C-18	3 vùng người bệnh (xanh/vàng/đỏ)	Three patient zones (guideline coverage)	C — Vien Gut
C-19	3 mức phân loại năng lực BN (A/B/C)	Patient capacity classification (A/B/C)	C — Vien Gut
C-20	8 điều kiện đủ (năng lực tham gia BN)	Eight sufficient conditions	C — Vien Gut
C-21	Đào tạo BN có cấu trúc	Structured patient education	C — Vien Gut
C-22	Hợp tác như chỉ số vận hành	Cooperation as operational indicator	C — Vien Gut
C-23	Khoa học về hành vi bệnh nhân	Patient behaviour science	C — Vien Gut
C-24	Chuỗi cảm biến–phản ứng	Sensor–response chain	C — Vien Gut
C-25	Điểm ra quyết định (Decision pivot)	Decision pivot	C — Vien Gut
C-26	Sổ quyết định lâm sàng (Decision log)	Decision log	C — Vien Gut
C-27	Vòng xoắn bệnh lý	Pathological spiral	C — Vien Gut
C-28	Ma trận giải xung đột	Conflict resolution matrix	C — Vien Gut

C-29	**Y học thị giác (Visual Medicine)**	Visual Medicine	**C — Vien Gut**
C-30	**Caliper mm²**	Caliper mm² (crystal measurement)	**C — Vien Gut**
C-31	**Vòng phản hồi học tập**	Learning feedback loop	**C — Vien Gut**
C-32	**Cửa sổ cơ hội — tiêu chí vận hành**	Window of opportunity — operational criteria	**C — Vien Gut**
C-33	**Mô hình chăm sóc ngoại trú tích hợp đa bệnh lý mạn tính phức tạp**	Integrated outpatient care model for complex chronic multimorbidity	**C — Vien Gut**
C-34	**Đa tổn thương cơ quan mạn tính**	Chronic multi-organ damage	**C — Vien Gut**
C-35	**Đa vòng xoắn bệnh lý mạn tính phức tạp**	Multiple pathological spirals	**C — Vien Gut**

6. Related documents in the set

Document	Link to A.4
A.0 — Architectural Declaration	Uses: verification target, operational conditions, safety valve, three-layer software
A.1 — EBM WHAT–HOW–DATA Framework	Uses: entire concept set — foundational theoretical framework document
A.2 — Foundational WHAT–HOW–DATA-to-operate Concepts	Uses: all foundational WHAT, HOW, DATA-to-operate concepts
A.3 — Global HOW Gap	Uses: HOW gap, fragmented care, integrated care, CCM
B.1 — Software Architecture	Uses: DATA-to-operate, audit trail, safety valve, risk stratification
B.2 — HOW Map and Blind Zone	Uses: clinical blind zone, priority map, Clinical Conductor
D.1 — Verification Method	Uses: real-world evidence, audit trail, DATA-to-operate

7. References

Gout guidelines — T2T and crystal-free

[1] FitzGerald JD, et al. 2020 ACR Guideline for Management of Gout. Arthritis Care Res. 2020;72(6):744–760.

[2] Richette P, et al. 2016 updated EULAR recommendations for gout management. Ann Rheum Dis. 2017;76(1):29–42.

[3] Zhang W, et al. EULAR evidence based recommendations for gout. Part II: Management. Ann Rheum Dis. 2006;65(10):1312–1324.

Multimorbidity and integrated care

[4] WHO. Framework on Integrated, People-centred Health Services. Geneva: WHO; 2016.

[5] Barnett K, et al. Epidemiology of multimorbidity. Lancet. 2012;380(9836):37–43.

[6] Wagner EH, et al. Improving chronic illness care. Health Aff. 2001;20(6):64–78.

Comorbidity guidelines

[7] McDonagh TA, et al. 2021 ESC Guidelines for heart failure. Eur Heart J. 2021;42(36):3599–3726.

[8] KDIGO. 2024 Clinical Practice Guideline for CKD. Kidney Int. 2024;105(4S):S117–S314.

[12] WHO. Integrated Care for Older People (ICOPE). Geneva: WHO; 2019.

Implementation gap and evidence

[9] WHO. Knowledge translation for public health. Geneva: WHO; 2004.

[10] Eccles MP, Mittman BS. Welcome to Implementation Science. Implement Sci. 2006;1:1.

[11] Grol R, Grimshaw J. From best evidence to best practice. Lancet. 2003;362(9391):1225–1230.

[16] Graham ID, et al. Lost in knowledge translation: time for a map? J Contin Educ Health Prof. 2006;26(1):13–24.

Multimorbidity and guideline conflict

[13] Pham HH, et al. Care patterns in Medicare. N Engl J Med. 2007;356(11):1130–1139.

[14] WHO. Global Action Plan for NCD 2013–2030. Geneva: WHO; 2023.

[15] Guthrie B, et al. Adapting clinical guidelines for multimorbidity. BMJ. 2012;345:e6341.

[17] Tinetti ME, et al. Potential pitfalls of disease-specific guidelines. N Engl J Med. 2004;351(27):2870–2874.

[18] De Franchis R, et al. Baveno VII. J Hepatol. 2022;76(4):959–974.

[19] Ronco C, et al. Cardiorenal syndrome. J Am Coll Cardiol. 2008;52(19):1527–1539.

[20] Hibbard JH, et al. Patient Activation Measure (PAM). Health Serv Res. 2004;39(4 Pt 1):1005–1026.

[21] WHO. Adherence to long-term therapies. Geneva: WHO; 2003.

[22] Michie S, et al. The behaviour change wheel. Implement Sci. 2011;6:42.

[23] Terslev L, et al. Ultrasound as outcome measure in gout — OMERACT. J Rheumatol. 2015;42(11):2177–2181.

[24] Smolen JS, et al. Treating RA to target. Ann Rheum Dis. 2010;69(4):631–637.

[25] NICE. Multimorbidity: clinical assessment and management (NG56). 2016 (updated 2023).

[26] Mair FS, May CR. Thinking about the burden of treatment. BMJ. 2014;349:g6680.

[27] IOM. Best care at lower cost. Washington DC: NAP; 2013.

[28] FDA. Framework for Real-World Evidence Program. Silver Spring: FDA; 2018.