Additional File 4

[Prompt for Generation] Stage 3: Temporal Clinical Summarization

Table S4.1. Stage 3 Generation Prompt

Type	Prompt
System Prompt	You will convert a tagged clinical event list into a temporally structured prose summary. **INPUTS** You are given two inputs: 1. ORIGINAL DISCHARGE SUMMARY — the source note. Use it only to clarify wording, expand abbreviations, or resolve unclear phrasing. Do not take any fact from it that is not present in the tagged event list. 2. TAGGED EVENT LIST — the authoritative source. Every fact and every date in the summary must come from this list. **TEMPORAL RENDERING RULES (mandatory, no exceptions)** Each event carries a temporal tag. Render each tag exactly as specified: • [YYYY-MM-DD] [EXACT]: "On YYYY-MM-DD, …" • [YYYY-MM-DD] [APPROX]: "Approximately on YYYY-MM-DD, …" • [YYYY-MM-DD to YYYY-MM-DD] [APPROX]: "Approximately from YYYY-MM-DD to YYYY-MM-DD, …" • [YYYY] [EXACT]: "In YYYY, …" • [PRE ADM]: "Before admission, …" **Rules:** • Write all dates in ISO format (YYYY-MM-DD), zero-padded, exactly as given in the tag. • The word "approximately" applies to the date, not to the event. The event is certain; only its timing is approximate. Never write "the patient was likely admitted" or "it is likely that X happened." • Reproduce each event's negations and hedges exactly as written; do not add, delete, or replace them. • If the event text restates timing already supplied by the tag, such as "admitted on 2122-5-19" or "on postoperative day two," delete the repeated timing phrase from the sentence. • You may adjust grammar and tense minimally so that the sentence reads correctly after the temporal prefix. Do not change the clinical content. **DEDUPLICATION AND MERGING** • Exact duplicates: If two events have the same tag and the same content, output the content once. • Subsumption: If one event's content is fully contained in another's, such as "The patient is female" and "The patient is a 19-year-old female," output only the more specific event.

• Merging: Events with identical tags (the same date and the same type) must be combined under one temporal prefix and joined into one or a few sentences. Never repeat the prefix, and never merge events across different dates or types. This includes recombining events split from one clinical statement, such as “Her incision was clean,” “was dry,” and “was intact.”

• Merge date of birth, age, and sex into one opening demographic sentence.

INCLUDE
Include only the following categories. If an event does not fall into one of these categories, omit it.
1. Patient demographics: date of birth, age, and sex.
2. The reason for admission: the clinical problem or finding that led to the admission, and any diagnostic workup or counseling directly related to it.
3. In-stay events, limited to the following types:
a. Procedures and surgeries performed.
b. Intraoperative findings and repairs.
c. Admissions to and transfers between services or units.
d. Intubation, extubation, and other airway or ventilation events.
e. Placement or removal of devices, lines, tubes, or catheters.
f. Treatments or interventions started or stopped.
g. Diagnoses made or revised during the stay.
h. Consultations obtained.
4. The discharge: date of discharge, disposition, discharge condition, and follow-up instructions.
5. Social history relevant to the patient's mental health, unless it is described as non-contributory or insignificant in the source material.
6. Medications on admission and medications at discharge must each be rendered as a line-separated list under their own temporal prefix, with one medication per line copied verbatim from the event text. These are the only lists permitted in the output; all other content must be continuous prose, as in the following example:
Before admission, the patient was taking:
• Medicine A at X dosage
• Medicine B
Approximately on [discharge date], the patient was discharged on:
• Medicine C for Y duration
• Medicine D via route Z

EXCLUDE
Exclude the following categories entirely:
1. Laboratory values and laboratory results.
2. Vital-sign values.
3. Physical-examination findings, including normal and benign findings and descriptions of body habitus or affect.
4. Statements that a parameter or status remained stable, unchanged, or within normal limits.
5. Past medical history, past surgical history, and prior events that are not the reason for the current admission, unless the condition actively complicated the hospital course, required a consultation, or significantly altered medical management during the stay.

6. Allergies.

FIDELITY
• Use only facts present in the tagged event list.
• Do not infer, interpret, diagnose, or add clinical judgment.
• Do not alter any numeric value, date, medication name, dose, route, or frequency.
• Preserve negations exactly. “No evidence of metastatic disease” must never become “evidence of metastatic disease.”
• Retain de-identification placeholders, such as [Last Name (STitle) 9125], exactly as written. Do not expand, guess, or replace them.
• Do not add a heading, preamble, commentary, or closing statement.

ORDER AND FORMAT
• Output continuous prose, except for the two medication lists specified above. Do not use other bullet points, headings, or tables.
• Open with the demographic sentence.
• Order all remaining content chronologically by the start date of its tag. For events sharing a start date, preserve the order in which they appear in the tagged event list.
• Place [PRE ADM] events, which carry no date, together as one “Before admission” group immediately before the admission date.
• Start a new paragraph at each of the following points: before admission, the admission date, and the discharge date.

WORKED CONVERSIONS
These examples demonstrate temporal rendering only. Whether an event is retained is determined by the INCLUDE and EXCLUDE rules above.
Input: - [2000-01-01] [EXACT] The patient was admitted on 2000-01-01.
Output: On 2000-01-01, the patient was admitted.

Input: - [2000-01-03] [APPROX] She was extubated on postoperative day three.
Output: Approximately on 2000-01-03, she was extubated.

Input: - [2000-05-10 to 2000-05-30] [APPROX] The patient was admitted to the ICU service.
Output: Approximately from 2000-05-10 to 2000-05-30, the patient was admitted to the ICU service.

Input: - [PRE ADM] The patient was found to be unconscious.
Output: Before admission, the patient was found to be unconscious.

Input: - [2011] [EXACT] The patient is status post knee operation in 2011.
Output: In 2011, the patient underwent knee operation.

Merging two events sharing one tag:
Input: - [2013-12-31] [APPROX] The patient's social service worker recommended therapy.
- [2013-12-31] [APPROX] The patient's social service worker discussed treatment plans with the patient's PCP.

	Output: Approximately on 2013-12-31, the patient's social service worker recommended therapy and discussed treatment plans with the patient's PCP. Subsumption: Input: - [PRE ADM] The patient is female. - [PRE ADM] The patient is a 58-year-old female. Output: Keep only the second event and incorporate it into the opening demographic sentence. Now produce the summary.
User Prompt	ORIGINAL_DISCHARGE_SUMMARY: < discharge_summary> TAGGED_EVENT_LIST: < tagged_event_list>

Bibliography

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2. Li J, Cheng X, Zhao X, Nie J-Y, Wen J-R. HaluEval: A Large-Scale Hallucination Evaluation Benchmark for Large Language Models. In: Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing. Singapore: Association for Computational Linguistics; 2023. p. 6449–64. https://doi.org/10.18653/v1/2023.emnlp-main.397.