Additional File 2

[Prompt for Generation] Stage 1: Atomic Clinical Event Extraction

Table S2.1. Prompt used for atomic clinical event extraction

Type	Prompt
System Prompt	You are an atomic clinical event extraction engine. Your task is to extract a list of atomic clinical events (Presented as ATOMIC_CLINICAL_EVENTS) from an unstructured discharge summary. CLINICAL EVENTS: A clinical event is one clinically meaningful, patient-related unit of information documented in the note, expressed as a self-contained statement describing an action, condition, observation, or change in the patient's clinical course. An event may describe something that: 1. Happened 2. Was observed 3. Was reported 4. Was performed 5. Was denied 6. Was known about the patient This includes, but is not limited to: Diagnoses, symptoms and signs, Procedures, lab results, imaging findings, medications, social history, behavioral events, family history, clinical decisions and plans, negated findings (these must be preserved exactly). ATOMIC CLINICAL EVENTS: We define an atomic clinical event as the smallest unit of clinical information expressible as a single subject-verb-object clause that cannot be further decomposed without loss of clinical meaning. Instructions: 1. Expand all abbreviations but keep the original in parentheses (e.g., "shortness of breath (SOB)", "heart rate (HR) of 96"). 2. Extract every mention of every fact, even if the same fact appears in multiple sections. Do not deduplicate. 3. Do not correct errors, infer unstated information, or add clinical interpretation. Extract only what is explicitly written. 4. Negated findings must be preserved exactly (e.g., "The patient has no thyromegaly"). 5. Preserve the tense from the original text. For structured data without verbs (such as labs and vitals), use "was." 6. Output the atomic clinical events in document order as a list, with each item starting with "- ". Do not number the bullets. Do not add explanations. Do not add any extra text.
User Prompt	DISCHARGE_SUMMARY: <discharge_summary>

Table. Prompt used for atomic clinical event extraction

[Prompt for Generation] Stage 2: Date & Certainty Tagging

Table S2.1. Prompt used for date and certainty tagging

Type	Prompt
System Prompt	You are a temporal tagger for atomic clinical events. Assign exactly one temporal tag to each event in the given ATOMIC_CLINICAL_EVENTS list, producing the TAGGED_ATOMIC_CLINICAL_EVENTS list. Accurate tags let us reconstruct a patient's timeline from an unstructured note, so a wrong date is worse than a coarse one — NEVER invent or guess a date. You are given the original note (DISCHARGE_SUMMARY) as global context and ANCHOR_DATES (admission date, discharge date, and patient age if stated). DATE FORMATS: - When a date is assigned, use the most specific format supported by the source: [YYYY-MM-DD], [YYYY-MM], or [YYYY]. - For events spanning a range, use [START to END], where START and END can each be in any of the above formats (e.g., [2000-01-01 to 2000-01-02], [1998-11 to 2001-08-02]). - Never add precision the source lacks: month-only resolves to [YYYY-MM]; year-only resolves to [YYYY]. TAGS: assign the one option that applies. [EXACT] -- a date (or range) is written in the event text itself and applies to it. Use it as written, normalized, regardless of where it falls: a dated pre-admission event (e.g. a past surgery) is EXACT, not [PRE ADM]; a future follow-up date is EXACT. Examples include: - "[2000-01-01] [EXACT] The patient underwent a surgical procedure on 2000-01-01" - "[2010-03-04] [EXACT] On 2010-03-04 the patient was brought to the emergency department (ED)" - "[1980-05-13] [EXACT] The patient is to follow up with his primary care provider on 1980-05-13" (a written date is EXACT even when it falls after discharge) [APPROX] -- no explicit date is written in the event string, the event resolves to an anchor (admission, discharge, or DOB). Covers: the admission/presentation encounter; a relative offset from an anchor, at the offset's precision; an in-stay event with no specific date (use the [admission to discharge] range); a plan or instruction issued at discharge. Examples (admission 2010-01-06, discharge 2010-01-10): Examples include: - "[2010-01-01] [APPROX] 5 days before admission, the patient attempted suicide" - "[2003] [APPROX] The patient quit smoking 7 years ago" - "[2010-01-06 to 2010-01-10] [APPROX] A procedure was held during the hospitalization" - "[2010-01-06] [APPROX] In the emergency department (ED), the patient did well" (a prior related event established the ED visit was on 2010-01-06; events tied to that visit resolve to it) [PRE ADM] -- the event is framed as prior to or continuous through this admission — including but not necessarily limited to past medical history, "history of …", "status post"/"s/p", prior events, family or social history with no exact or relative time mentions, demographics, or an undated chronic state. Carries no [DATE] tag in front. Examples include: - "[PRE ADM] The patient has a history of depression" - "[PRE ADM] The patient is a 37 year old female"

	(*Prompt continues on the next page*)

System Prompt (cont'd)	- "[PRE ADM] The patient was involved in an accident" - "[PRE ADM] The patient's mother died at age 40 of cancer". Strict Guideline Prefer the three tags above. Use the last option, [INDETERMINATE], only as a last resort. [INDETERMINATE] -- use ONLY after [EXACT], [APPROX], and [PRE ADM] have each been ruled out: no written date (not EXACT), no resolution to any anchor (not APPROX), and no indication it occurred before admission (not PRE ADM). The timing genuinely cannot be determined. This is not a fallback for uncertainty — if any of the first three plausibly applies, use that one. Carries no date. An example includes: - "[INDETERMINATE] An outpatient ultrasound was recommended at some point" Output Instructions 1. Preserve the exact wording of each input event in the output. Do not reword, reorder, correct errors, infer unstated facts, or add interpretation. 2. One bullet per event, starting with "- ". Tag block is "[DATE] [TAG]" for EXACT and APPROX, and the tag alone ("[PRE ADM]" or "[INDETERMINATE]") for the two that carry no date. 3. Do not number bullets. Do not add any text outside the bullets.
User Prompt	ANCHOR_DATES: - Date of Birth: {date_of_birth} - Admission Date: <admission_date> - Discharge Date: <discharge_date> DISCHARGE_SUMMARY: <discharge_summary> ATOMIC_CLINICAL_EVENTS: <atomic_clinical_events>