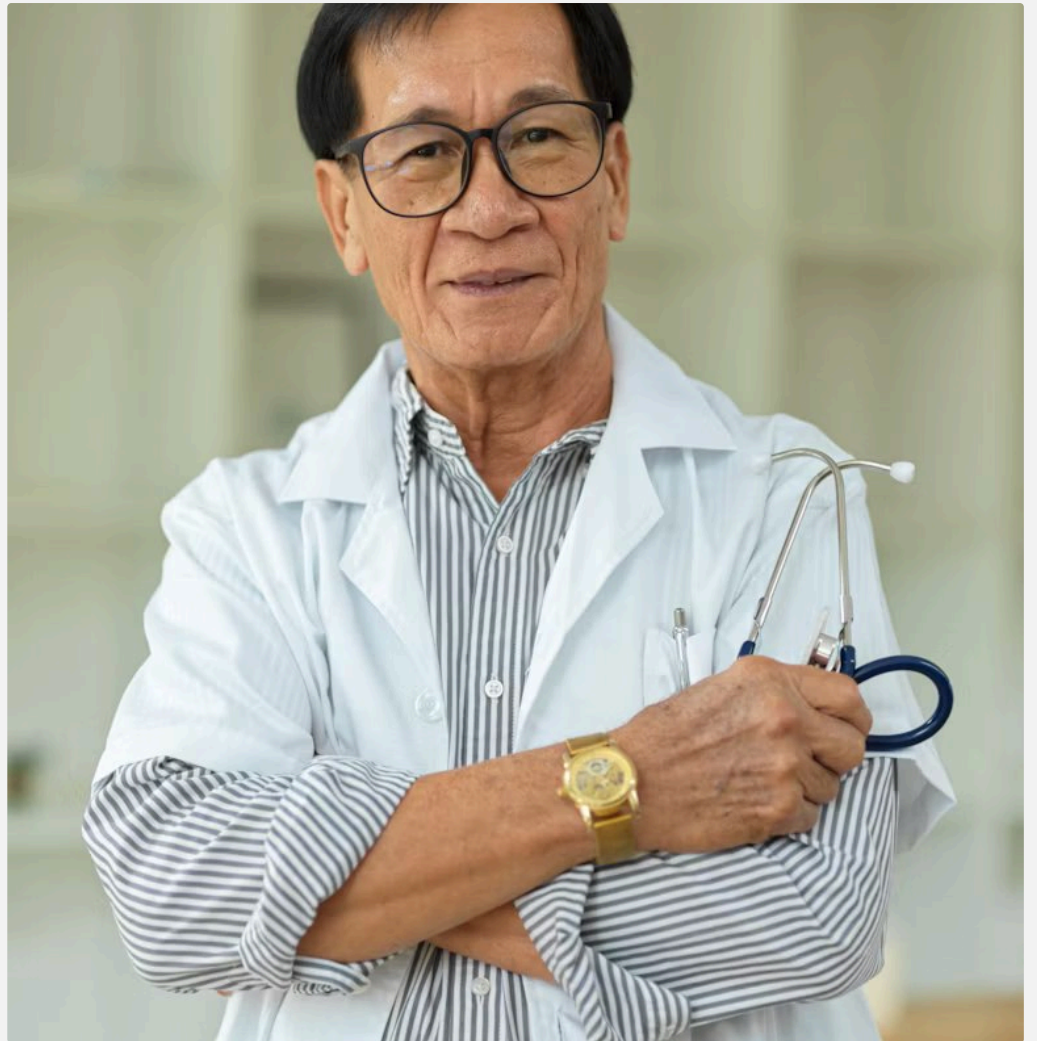
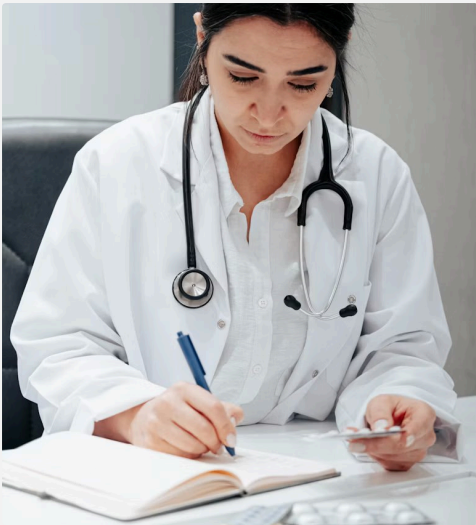


Shifaya

Clinical Intelligence

Technology, Clinicians, Workflow

RETHINKING HOW CLINICAL INFORMATION IS CAPTURED, UNDERSTOOD AND USED



Clinical documentation is changing



Clinical documentation is one of the foundations of modern healthcare. It preserves the patient's clinical story, supports continuity between professionals and specialties, and creates the information on which many clinical, administrative and operational processes depend.

Yet the creation of that information remains remarkably labour-intensive.

For many clinicians, a consultation does not end when the patient leaves the room. Information discussed during the encounter must still be recalled, dictated, typed, structured, reviewed and entered into the electronic health record. Digital healthcare has transformed the accessibility of clinical information, but it has not removed much of the effort required to create that information in the first place.

This has created an unusual contradiction. Healthcare professionals increasingly work within sophisticated digital environments while still spending a considerable part of their time translating natural human conversations into forms that computer systems can understand.

The impact extends beyond administration. During a consultation, clinicians are expected to listen, observe, reason, communicate and document simultaneously. Each of these activities competes for the same finite attention. The electronic record, while essential to modern care, can therefore become an increasingly visible participant in the relationship between clinician and patient.

Ambient clinical artificial intelligence introduces a different possibility. Instead of requiring the clinician to reconstruct the encounter after it has taken place, the clinical conversation itself can become the starting point for the medical record.

"Reported burnout among ambulatory clinicians completing follow-up surveys decreased from 51.9% before implementation to 38.8% after 30 days of ambient AI scribe use."

Multicentre study

JAMA Network Open, 2025¹

Spoken information can be captured securely, converted into text, interpreted in clinical context and organised into structured documentation for professional review.

Early evidence suggests that this change in workflow can be meaningful. Research across several healthcare systems has associated ambient AI documentation with improvements in documentation-related cognitive burden, after-hours work and the ability of clinicians to focus their attention on patients.

Other studies have reported improvements in perceived documentation burden, clinician experience and patient engagement, while academic healthcare organisations such as Stanford Medicine have begun introducing ambient documentation technologies into routine clinical environments.^{2,3}

These developments suggest that clinical documentation is entering another stage of its evolution.

The opportunity is not simply to replace typing with transcription. Nor is it to produce increasingly long medical notes more quickly.

The larger opportunity is to rethink how information moves from the clinical conversation into the healthcare system - and what becomes possible once that information can be understood, structured and connected with the broader history of the patient.

This is the problem Shifaya is being created to address. Shifaya begins with clinical documentation, but documentation is only the starting point.

Three elements, one system

The first objective is clear: help healthcare professionals transform natural clinical conversations into accurate, structured and professionally validated medical records with less manual effort. The longer-term opportunity is considerably broader - connecting the current encounter with the patient's longitudinal history.

- **Technology** - capable of understanding increasingly complex clinical information.
- **Clinicians** - who remain responsible for determining what that information means and what action should follow.
- **Workflow** - which determines whether intelligence becomes useful at the moment it is needed.

Together, these elements form the foundation of **Shifaya Clinical Intelligence**.

Understanding, not just recording



The first generation of digital documentation technology largely focused on making existing activities faster. Dictation reduced typing. Speech recognition converted spoken words into text. Templates helped standardise records.

Ambient clinical intelligence begins from a different premise. A conventional transcription system answers a relatively narrow question:

"What was said?"

Clinical intelligence needs to begin answering several more difficult questions simultaneously. Who said it? Is the patient describing a current symptom or a previous episode? Was a medication prescribed, discontinued or simply mentioned? Does a number describe dosage, blood pressure, laboratory value or date? Which statements belong to the medical history, which describe examination findings and which represent the clinician's assessment or treatment plan?

Clinical conversations contain drug names, dosages, measurements, diagnoses, abbreviations and specialist terminology. They also contain interruptions, incomplete sentences, corrections and assumptions that may be immediately understandable to another healthcare professional while remaining difficult for a conventional language model to interpret accurately.

In multilingual healthcare environments, the challenge becomes greater still. English medical terminology may appear inside an Arabic conversation. Latin terminology, medication names and international clinical nomenclature may need to remain unchanged even when the surrounding conversation is translated or interpreted.

Shifaya is therefore conceived as a series of connected intelligence layers rather than as a transcription engine.



The encounter is first captured securely. Medical speech intelligence then creates an accurate representation of the conversation while distinguishing participants and preserving relevant terminology. Clinical language intelligence identifies the information required for the medical record. A structuring layer organises that information according to the healthcare organisation's documentation requirements.

The result is then returned to the healthcare professional as a clinical draft. The clinician remains responsible for deciding whether that draft is accurate.

In its initial form, the Shifaya workflow is intentionally straightforward:

Clinical conversation - Medical speech intelligence - Clinical understanding - Structured draft - Clinician validation - Clinical record

A European hospital technical specification reviewed while defining Shifaya's initial product requirements asks for considerably more than transcription: medical terminology recognition, medications, dosage information, diagnostic coding, structured document generation, clinician review and editing, and automated transmission of approved information into the hospital information system - with AI-generated content remaining a draft until actively validated by a healthcare professional.

Speech-to-text will increasingly become an underlying capability. The greater value lies in what happens after the words have been recognised.



"People, process, and culture are just as important as the technology for determining outcomes."

A principle Shifaya is built around
Clinical governance

02 - CLINICIANS

Healthcare remains fundamentally human

A clinician does considerably more than gather information. The clinician determines which information is relevant, evaluates how reliable it is, interprets uncertainty, considers the circumstances of the individual patient and decides what should happen next.

A useful clinical AI platform should therefore not attempt to remove the clinician from documentation or decision-making. Its purpose should be to reduce more of the mechanical work surrounding professional judgement.

In the traditional workflow, the healthcare professional is both the source of clinical reasoning and the primary author of the medical record. Ambient AI changes the second part of that relationship: instead of creating every sentence manually, the clinician can increasingly become the reviewer and validator of a structured clinical draft generated from the encounter.

That transition has the potential to return something particularly valuable to the consultation: **attention**. When less attention is required for keyboards, templates and repetitive data entry, more can remain available for listening, observing and communicating with the patient.

The clinician must nevertheless remain the final authority. Every generated medical record should remain fully reviewable. Relevant sections should be editable. The system should make a clear distinction between content that has been generated and information that has been professionally validated. Only after review and approval should information become part of the official patient record.

AI assists. Clinicians decide.

The same principle becomes even more important when AI begins moving beyond documentation. A system that identifies possible diagnoses, highlights treatment considerations or draws attention to changes in the patient's longitudinal record requires an even stronger degree of transparency, evidence and oversight.

The future relationship should therefore not be clinician versus artificial intelligence. It should be clinician **with** artificial intelligence - AI processing enormous amounts of information and retrieving relevant context, clinicians contributing medical judgement, patient understanding, contextual reasoning and ethical responsibility.

Progressively less visible

Even sophisticated technology creates little value when it adds complexity to the work it is intended to simplify. Healthcare organisations already operate complicated digital environments - clinicians move between electronic health records, laboratory systems, imaging platforms, referral tools and numerous other applications throughout the working day.

A clinical AI product that introduces another login, another isolated interface and another manual transfer of information risks becoming yet another administrative layer. For this reason, the strongest clinical AI should become progressively less visible.



A clinician should be able to begin an encounter within the system already used to manage the patient. Shifaya can receive the appropriate encounter context, securely capture the consultation and prepare the required documentation. Once reviewed and approved, structured information can return directly into the healthcare organisation's existing record system.

By the time the encounter is complete, the physician is no longer looking at an empty clinical form. A structured draft is already waiting. The clinician reviews the record, corrects anything necessary, adds information that may not have been spoken aloud and approves the result.

Integration therefore should not be regarded as an optional technical feature. It is part of the clinical experience itself. And once information can move reliably through this workflow, the clinical conversation can become the beginning of something significantly larger than documentation.

More value than the document itself

A clinical conversation contains considerably more value than the document traditionally produced at the end of it. The medical note is effectively a compressed representation of a much richer interaction. Previous consultations contain earlier symptoms and clinical reasoning. Laboratory values reveal changes across time. Medication histories show what has already been attempted.

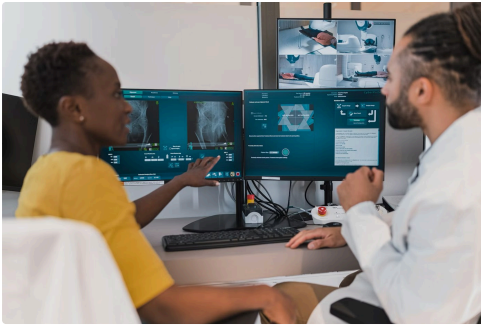
Today, clinicians frequently have to reconstruct that context manually. The next stage of Shifaya is intended to help bring it together - before a consultation begins, the clinician could receive a concise clinical briefing containing information relevant to the purpose of today's visit: major diagnoses, recent medication changes, relevant hospitalisations, unresolved investigations, significant laboratory trends or symptoms appearing repeatedly across previous encounters.

A patient may mention fatigue during today's appointment. Considered independently, that statement may have limited meaning. Combined with a gradually changing renal function, a medication introduced several months earlier and a pattern visible in previous laboratory results, the same symptom may deserve different attention. The purpose of Shifaya would not be to announce what that relationship means - its role would be to make the relationship easier for the clinician to see.

Longitudinal clinical intelligence



Patients do not arrive as isolated collections of information created during a single appointment. Their clinical story develops across years, specialties, investigations, treatments and periods of change - yet much of healthcare technology continues to organise information encounter by encounter. Shifaya's longer-term ambition is to help connect those fragments: progressive changes in blood pressure, renal function, glucose control or weight; repeated presentations with similar complaints; medication changes connected with subsequent clinical developments.



"Clinicians do not always need more information. Frequently they need help identifying which information deserves attention."

The opportunity becomes especially important when patients receive care across several specialties. A cardiologist, endocrinologist, nephrologist and general practitioner may all contribute information about the same patient. Each clinician understands one part of the picture particularly well, while relationships across those records may remain difficult to identify quickly. Clinical intelligence can help bridge these silos - not to collapse several medical disciplines into a single automated opinion, but to help each clinician see relevant information that already exists elsewhere in the patient's care pathway.

The questions available to Shifaya therefore become progressively more sophisticated:

- What happened during today's consultation?
- What has changed since the previous encounter?
- Which findings appear repeatedly?
- Does today's information contradict something already documented?
- Which other parts of the patient's record may be relevant to this encounter?
- What was supposed to happen next, and did it happen?

Detecting what does not fit

Some of the most valuable information in medicine is not an obvious answer but an inconsistency. A patient may report that they stopped taking a medication that remains active in the electronic record. A previously documented allergy may conflict with a medication being considered today. A specialist may have recommended an investigation several months earlier that appears never to have been completed.

These discrepancies can be difficult to identify manually because the relevant information may be distributed across years of documentation. Longitudinal clinical intelligence can look for them systematically - highlighting that a patient's current statement differs from the active medication list, or that information needed to support a decision does not appear to be present in the available record.

"Clinical recommendations should never appear as unexplained statements generated by an AI model."

CLINICAL DECISION SUPPORT

From documentation to reasoning

Once the current encounter can be understood alongside the patient's longitudinal history, Shifaya can begin supporting clinical reasoning more actively. This is also where the boundary between useful assistance and medical authority must remain especially clear. **Shifaya should not independently diagnose patients or initiate treatment.**

Instead, the platform can evolve toward presenting structured clinical considerations for professional review - potential differential diagnoses, investigations that may help clarify uncertainty, treatment pathways relevant to the case, information that appears to be missing, or factors in the patient's history that may change the interpretation of today's symptoms.

Consider a patient repeatedly presenting with dizziness. A single consultation may provide several plausible explanations. Shifaya's value would not be in choosing one and presenting it as the answer - the value would come from bringing together information from today's discussion, current medications, laboratory trends, cardiovascular history and previous presentations, and showing the clinician which relationships may deserve attention.

A mature clinical intelligence system should increasingly be able to explain **why** a consideration has been surfaced: today's conversation, a laboratory trend, an earlier diagnosis, the medication record, or an established medical guideline.

Intelligence should be traceable.

Healthcare professionals should be able to distinguish patient-derived information from information already present in the medical record, recognised external medical knowledge and model-generated interpretation. A system preparing a draft note requires one degree of oversight. A system suggesting a possible diagnosis or treatment consideration requires substantially more. Clinical intelligence should evolve only together with clinical governance.

Organising evidence around the decision

Clinical AI becomes considerably more useful when it can connect patient information with recognised medical knowledge rather than relying only on probabilistic language generation. Future clinical considerations should, where appropriate, be capable of being linked to the evidence that supports them - a recognised clinical guideline, a specific laboratory trend, a known medication interaction, or information documented during an earlier consultation.

Instead of simply presenting an alert, Shifaya can progressively provide the context required to understand why the alert exists. The purpose is not to automate medical reasoning. It is to reduce the amount of fragmented information the clinician must assemble before reasoning can begin.

Before the consultation

The value of clinical intelligence does not need to begin only after the patient starts speaking. Clinicians frequently enter appointments with only limited time to review the patient's history. Shifaya could prepare much of this context beforehand - a concise pre-visit briefing might explain that the patient has a history of hypertension and diabetes, that glycaemic control has gradually worsened across several measurements, that a medication dose was altered four months earlier, and that an earlier note mentioned a symptom relevant to today's reason for attendance.

The clinician can then enter the conversation with a clearer understanding of the patient's recent trajectory, and the system might also identify unresolved information that could be useful to clarify during the appointment.

Instead of becoming useful only after the encounter has been completed, Shifaya begins supporting the clinician **before, during and after** the consultation.

During the consultation

During the clinical encounter, Shifaya's primary role should remain deliberately unobtrusive. The patient and clinician should continue speaking naturally while the platform securely captures the consultation and medical speech intelligence recognises the participants, preserves clinical terminology and adapts to the language being used.

In later stages of development, contextual intelligence may also help identify where information remains unclear - if the patient's medical record shows one medication while the conversation suggests another, the platform could quietly draw attention to the discrepancy. The objective should not be to interrupt the clinical conversation unnecessarily.

After the consultation

Documentation is only one of the tasks that follows a clinical encounter. Referrals may need to be prepared. Diagnostic investigations requested. Follow-up appointments arranged. Specialist letters written. Prescriptions generated. Once Shifaya has created a structured, clinician-approved understanding of the encounter, the same information can support these downstream processes.

Shifaya could prepare a draft referral containing the relevant patient history, reason for referral and supporting information. The same underlying clinical understanding could assist with investigation requests, follow-up documentation, discharge summaries, certificates or other forms of clinical communication. The important word remains **draft** - the clinician retains authority over what enters the healthcare system and what is communicated to the patient.

Conversation - Note

Conversation - Understanding - Documentation - Clinical decision - Approved actions

This represents a considerably more meaningful role for clinical AI. Documentation becomes the foundation for the broader clinical workflow that follows care.



"The official clinical record may remain in English while the patient receives the same approved information in Arabic."

THE PATIENT AFTER THE VISIT

Communication that travels with the record

There is another participant in the clinical documentation process who rarely experiences the medical record in the same way as the clinician: the patient. Patients can leave consultations having heard a considerable amount of unfamiliar information in a relatively short period. The healthcare professional may understand exactly what should happen next while the patient remembers only part of the conversation.

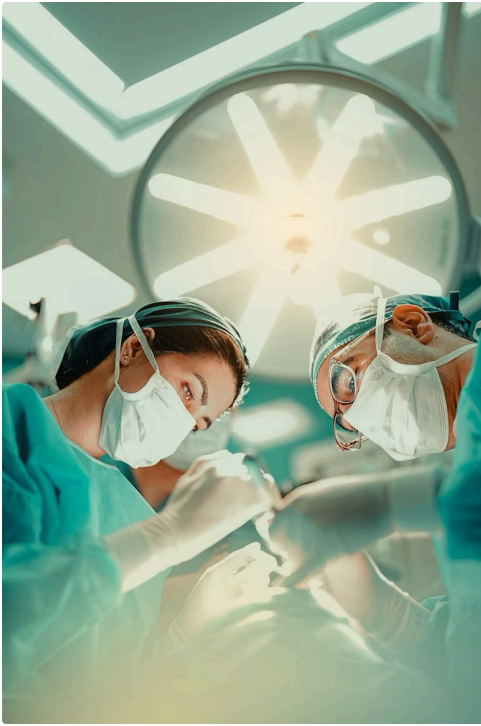
After approval, Shifaya could prepare a patient-facing summary explaining the consultation in accessible language: what was discussed, what next steps were agreed, how medications should be taken, which investigations are planned and when follow-up should occur - together with safety-netting information explaining which changes in symptoms should prompt the patient to seek earlier or urgent medical attention.

Multilingual healthcare

Healthcare does not happen in one language. A consultation can move naturally between languages while clinical terminology remains in English or Latin. A patient may describe symptoms in one language while the medical record is required in another. A platform designed for multilingual healthcare needs to understand not only separate languages but natural code-switching between them, and preserve clinical terminology accurately when it appears inside another language.

A recent proof-of-concept study in a multilingual Swiss tertiary hospital compared conventional dictation, speech recognition, AI-assisted documentation and ambient AI documentation. Ambient documentation produced the shortest physician documentation time among the approaches evaluated.⁶

For the Gulf region, multilingual capability becomes particularly relevant - a physician may work professionally in English while conducting significant parts of the patient conversation in Arabic. Shifaya is designed from the beginning around **multilingual clinical intelligence**, making Arabic-English understanding an architectural consideration rather than a localisation feature.



TRUST BY DESIGN

Trust cannot be a compliance layer

Clinical documentation is not ordinary generated text. Once information enters the medical record, it may influence decisions made months or years later by healthcare professionals who were not present during the original consultation. An incorrect medication, an invented examination finding or an omitted part of the patient's history can therefore persist beyond the conversation in which the error originated.

For this reason, trust cannot be added to clinical AI as a final compliance layer. It must influence the architecture from the beginning. Sensitive information should be processed only for clearly defined purposes. Data should be encrypted during transmission and storage. Patient data should not quietly become training material for external AI models. Relevant user and system actions should be auditable. Most importantly, the clinician should remain responsible for approving the content that enters the official medical record.

The hospital specification informing Shifaya's initial product thinking includes encryption, audit logging, automatic deletion of recordings and transcripts after processing, restrictions on the use of hospital information for model training, and mandatory clinician approval before information is written back into the patient record.

Trust also requires acknowledging the limitations of the technology. Clinical AI can produce fluent language even when the underlying interpretation is wrong. A trustworthy clinical intelligence system should therefore expose uncertainty rather than hide it - low-confidence transcription can be identified, and important clinical considerations can indicate which information prompted them.

As Shifaya becomes more capable, traceability becomes increasingly important. Greater intelligence should always be accompanied by greater transparency.

Beyond words generated

The success of Shifaya should not be measured by how much text the platform can generate. A system could produce an impressive-looking clinical note while providing little operational or clinical value. Conversely, a technology that saves only a modest amount of direct typing time could still be valuable if clinicians experience lower cognitive burden, complete documentation earlier, or interact more naturally with patients.

Current research already suggests that ambient clinical AI produces multidimensional effects - documentation time, after-hours work, cognitive burden, clinician experience, burnout and patient engagement, rather than transcription accuracy alone.^{[12](#)}

Shifaya should therefore be evaluated across several dimensions: the accuracy and completeness of documentation; the percentage of generated information that requires clinician correction; time spent documenting and work performed outside normal clinical hours; system reliability, latency and integration performance. As decision-support capabilities are introduced, entirely new evaluation requirements emerge - sensitivity, specificity, calibration, clinically meaningful error analysis and performance across different populations.

A learning clinical system

The language used by a cardiologist differs from the language used by a dermatologist. Documentation requirements vary between specialties. Shifaya therefore needs to adapt without requiring uncontrolled retraining on confidential patient data - through configurable documentation templates, medical terminology dictionaries, prompt engineering, workflow logic and validated integration rules.

The clinical environment can teach the system what matters without requiring sensitive information to become uncontrolled training material. Over time, this can enable increasingly specialised configurations for different clinical disciplines, languages and healthcare workflows.

A pathway from documentation to clinical intelligence

Shifaya is unlikely to achieve its full potential in a single technological step. A more credible path is progressive.

	Focus	Objective
Stage 1 Ambient documentation	Consultation is securely captured, transcribed and transformed into a structured medical draft.	Reduce the manual work required to convert an encounter into usable documentation.
Stage 2 Contextual documentation	Current consultation interpreted alongside relevant existing patient history.	Reduce the historical information a clinician must search for manually.
Stage 3 Longitudinal intelligence	Identifying clinically relevant relationships across time, specialties and encounters.	Highlight meaningful changes, inconsistencies and unresolved follow-up.
Stage 4 Clinical decision support	Encounter, longitudinal data and governed medical knowledge combined.	Prepare differential diagnoses, investigations and treatment pathways for review.
Stage 5 Workflow intelligence	Validated structured understanding extended to downstream tasks.	Assist referrals, investigation requests, discharge notes and follow-up.

Future development may eventually extend into carefully validated predictive applications - risk stratification, earlier identification of deterioration, or readmission prediction - where sufficient evidence and appropriate regulation exist. Prediction, however, should be approached cautiously: more data does not automatically produce better medicine.

Documentation gives Shifaya access to the clinical conversation. Integration gives Shifaya access to context. Longitudinal intelligence gives that context meaning across time. Clinical decision support can then help transform understanding into better-informed professional action.

FROM THE GULF TO MULTILINGUAL HEALTHCARE SYSTEMS

Abu Dhabi offers a particularly relevant environment in which to develop this vision. The deeper relevance lies in the healthcare environment itself - internationally trained clinicians, highly diverse patient populations, sophisticated healthcare organisations and multiple languages within everyday clinical practice. These characteristics create precisely the kind of environment in which generic English-language transcription becomes insufficient.

Developing clinical intelligence for Arabic-English healthcare environments therefore provides an opportunity to solve a difficult problem early rather than adding multilingual capability after the product has already been established. Shifaya's long-term opportunity is not defined by one geography or one pair of languages - Abu Dhabi provides a particularly relevant foundation for that development.

The future clinical encounter

A future consultation could begin with the physician receiving a concise summary of the patient's relevant history rather than searching through dozens of previous records. The patient enters the room. The clinician focuses on the conversation while Shifaya securely captures the encounter in the background. By the time the conversation has finished, a clinical draft is already prepared, alongside relevant contextual information surfaced from the patient's history.

Once the encounter is approved, referrals, follow-up documents or investigation requests can be prepared from the same validated understanding. The patient receives a clear summary of the consultation in a language they understand. And when that patient returns months later, today's encounter becomes part of the longitudinal clinical context available to the next healthcare professional.

Today, healthcare professionals frequently have to search for information, reconstruct it, interpret it and manually transform it into several different forms. Tomorrow, clinical information can increasingly organise itself around the healthcare professional.

Shifaya

Documentation is the starting point. Clinical intelligence is the destination.

The future of clinical documentation will not be determined by artificial intelligence alone. Technology must become capable of understanding increasingly complex clinical conversations and placing them in the context of the patient's history. Clinicians must remain responsible for determining what that information means and what action should follow. Healthcare systems must allow validated information to move safely between the people and applications that depend on it.

Shifaya begins by addressing a clear and immediate problem: helping clinicians document care with less administrative effort. But the architecture is being designed with a larger future in mind - where relevant information is available before it needs to be searched for, where information from different specialties can be connected around the patient, and where clinical recommendations can be supported by traceable evidence.

And where artificial intelligence does not attempt to make the clinician less important. It does the opposite - it removes more of the work that separates clinicians from the reason healthcare exists in the first place.

[Understanding the patient, making thoughtful decisions and delivering care.](#)

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Product requirements reference

Shifaya's initial product definition has also been informed by an actual European hospital procurement specification for an AI-assisted medical documentation solution, covering browser-based consultation recording, medical speech recognition, structured clinical documentation, clinician validation, integration with the hospital information system, security, auditability, automatic data deletion, usage reporting, system availability and continuous quality optimisation. These requirements are used as evidence of healthcare buyer expectations and as input into Shifaya's product architecture - not as evidence that every capability described in this document has already been implemented, clinically validated or commercially deployed.

Development principle

Every increase in clinical capability must be accompanied by corresponding increases in validation, transparency, auditability and professional oversight. The objective is not autonomous medicine. It is better-informed medicine, supported by clinical intelligence.