CLICK MORE, TYPE LESS

AI ASSISTED TOOL FOR SCOLIOSIS PHYSIOTHERAPY DOCUMENTATION

Presented by See Ka Hin

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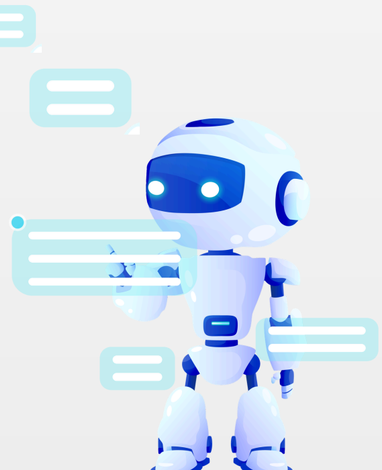


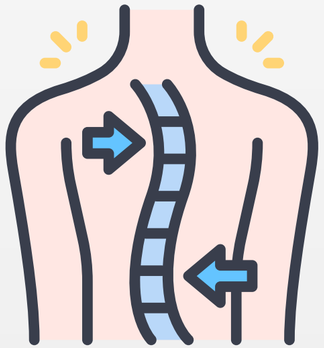
GROWING DEMANDS

- 62% increased in prevalence of Adolescent Idiopathic Scoliosis (AIS) from 2000 to 2020

(Wang et al., 2025)

- Doubled in prevalence of AIS in 25-year data in Japan

(Morino et al., 2026)



DATA EXTRACTION

Human error

CDARS

Limited specific outcomes

SRS22r
Sit-up
Sit & reach

Free Text Data

Independent variables

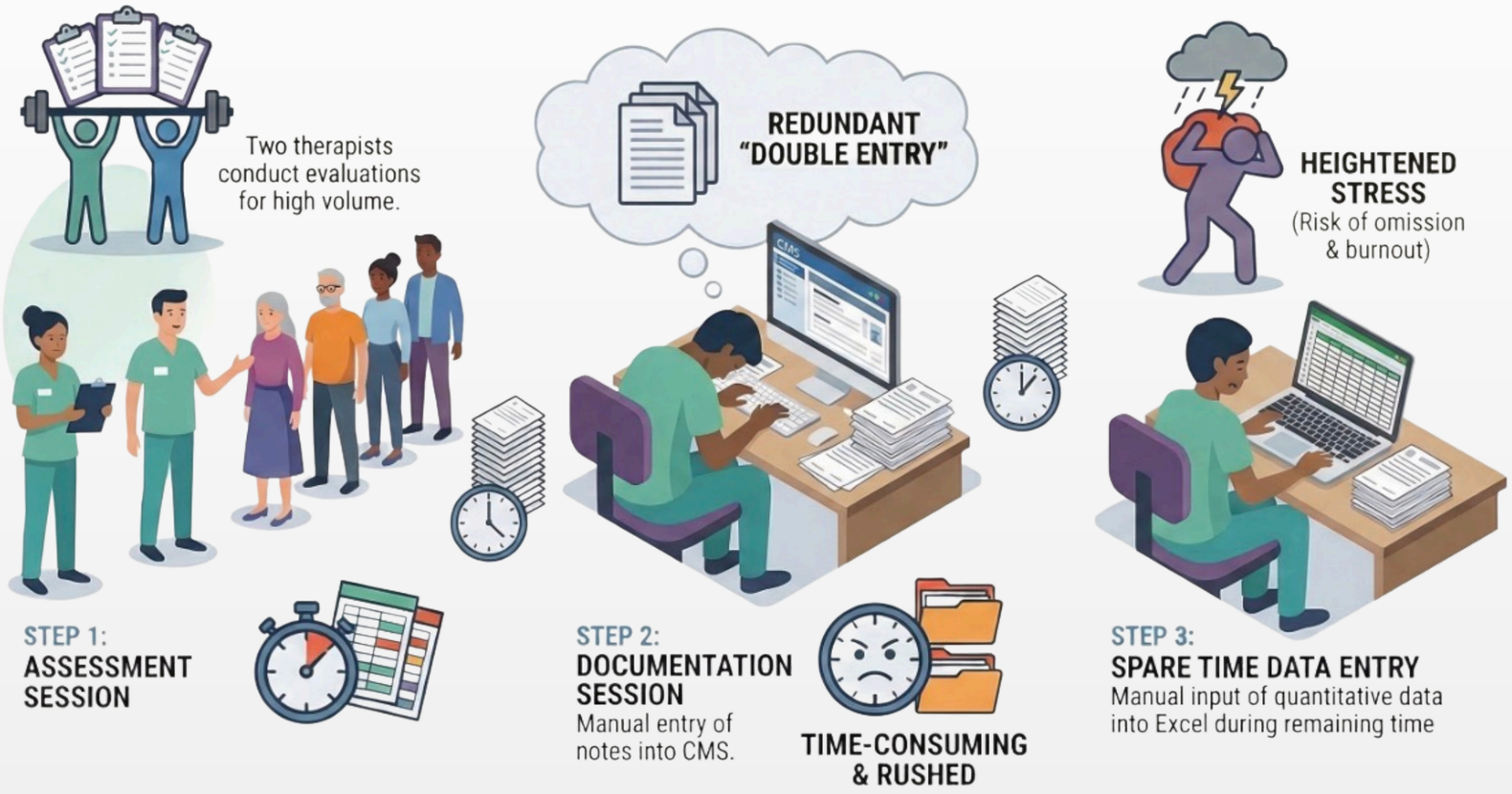
Height/Weight etc.

Limited input fields

VS

Multiple Outcomes

DROWNING IN DOCUMENTATION



Assessment Session

- Max of 12 patients/ session
- Detailed postural assessment
  - History Taking
  - Postural Assessment
  - Patient education
  - Specific Postural Exercises

Documentation Session

- **~ 1hour** for documentation

Data extraction

- For research & program evaluation
- **Extra 1 hour** of manual input

ADDITIONAL 2 HOURS ADMIN TIME

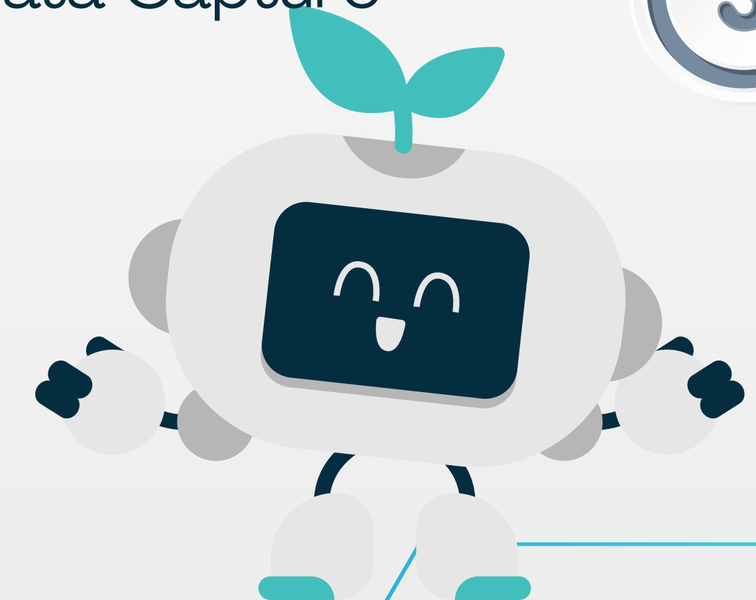
OBJECTIVES

Reduce

- Administrative Time
- Duplicated Documentation

Improve

- Structured documentation
- Automated Data Capture

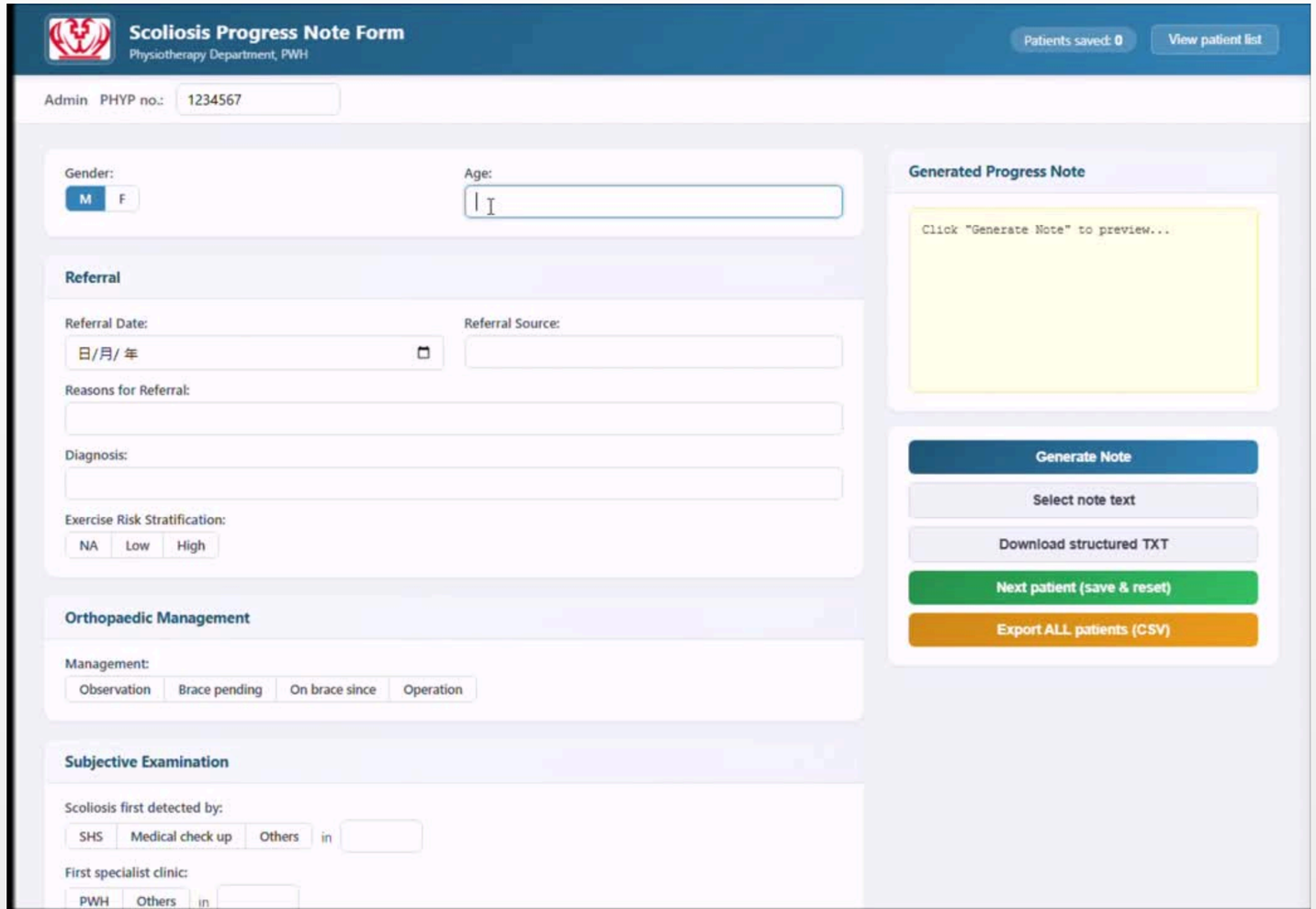


1. **Define** clinical workflow
2. **Prompt-driven** HTML generation
3. **Iterate** until it fits
4. **Use** in practice

AI-GENERATED
DOCUMENTATION HTML

Clickable Form

Automated Data Extraction



Automated Notes generation

AI-GENERATED

DOCUMENTATION HTML

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	PHYP	Age	Gender	NPRS	MaxCobb	SRS_F	SRS_P	SRS_S	SRS_M	SRS_Sat	SRS_Subt	SRS_Tota	ATR_CT_	ATR_Tx_	ATR_Lx_	SitupRep	HamLt	HamRt	BSR_Lt	BSR_Rt
2	1234567	10	M	0	11	5	5	5	5	5	4	4.8	2	0	1	5	45	45	3	3
3	2345678	12	F	0	18	5	3	4	5	4	3.915	4.125	3	2	2	8	50	30	2	5
4	3456789	8	M	0	16	5	4	5	3	4	3.735	4	4	5	1	15	30	30	10	10
5	4567900	9	M	0	15	5	5	4	5	4	4.135	4.415	4	0	2	3	60	60	0	0
6	5679011	10	M	0	10	5	5	4	4	5	4.2	4.8	2	1	0	6	30	30	3	5
7	6790122	14	F	0	15	5	4	5	5	4	4.6	4.6	2	10	6	4	45	30	5	8
8	7901233	15	F	0	13	5	5	4	5	5	4.5	4.795	3	3	4	5	30	30	10	12
9	9012344	10	F	0	15	5	4	5	4	5	4.595	4.4	2	0	1	8	50	30	6	10
10	10123455	18	F	0	17	4	5	5	5	4	4.595	4.6	1	2	3	6	30	50	6	14
11	11234566	14	F	0	18	5	5	4	5	5	4.9	4.545	5	3	0	10	30	60	3	18
12	12345677	13	F	0	10	5	4	5	5	4	4.3	4.7	2	2	0	3	45	50	3	3
13	13456788	10	F	0	11	4	5	5	4	4	4.125	4.75	6	4	5	10	45	30	2	6
14	14567899	12	F	0	12	5	4	4	5	5	4.595	4.5	7	0	0	11	30	30	10	

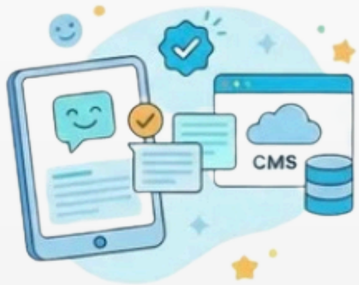
FROM ADMIN TO CARE

Capture structured assessment data

Automate Documentation

Redesign For rising demand

Enhance Patient care & Decision-making

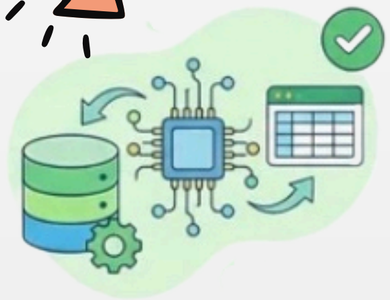


Step 2: Real-Time Documentation

Copy and paste the AI-generated narrative notes into the CMS.

Step 1: Joint Assessment Session

Two therapists conduct the assessment session together.

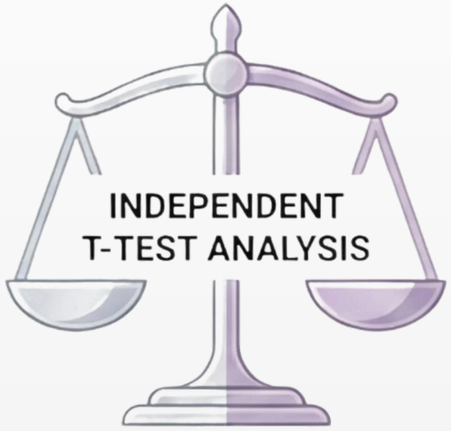


Step 3: Direct Data Extraction

Export structured data directly to Excel for analysis.

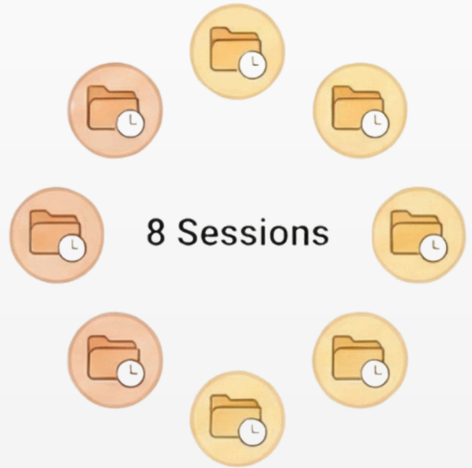
METHODOLOGY

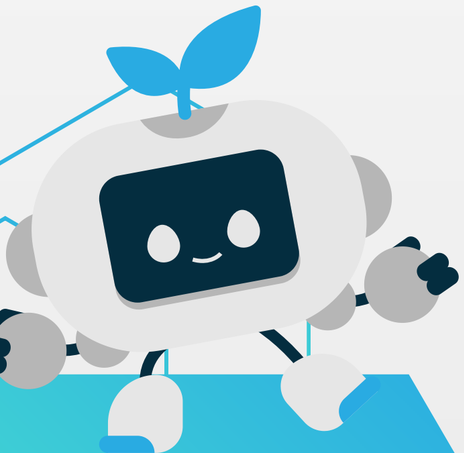
BEFORE IMPLEMENTATION



Statistical method used to compare the means of the two independent groups

AFTER IMPLEMENTATION





ASSESSMENT TIME PER PATIENT

Clinical time spent during the physical scollosis evaluation.

DOCUMENTATION TIME PER PATIENT

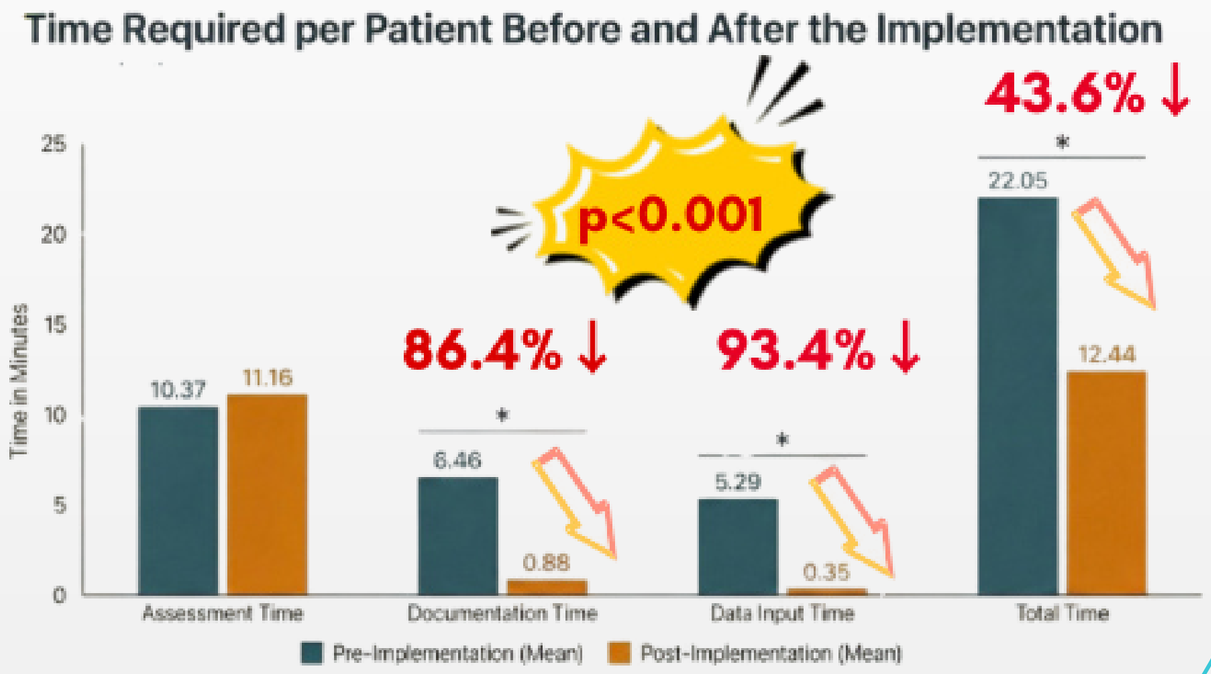
Time spent generating progress notes for the Clinical Management System.

DATA INPUT TIME PER PATIENT

Time spent entering quantitative parameters into Excel for analysis.

OUTCOMES

- NO Significant change in Assessment Time
- Significant decrease in
  - Documentation time (↓86.4%)
  - Data input time (↓93.4%)



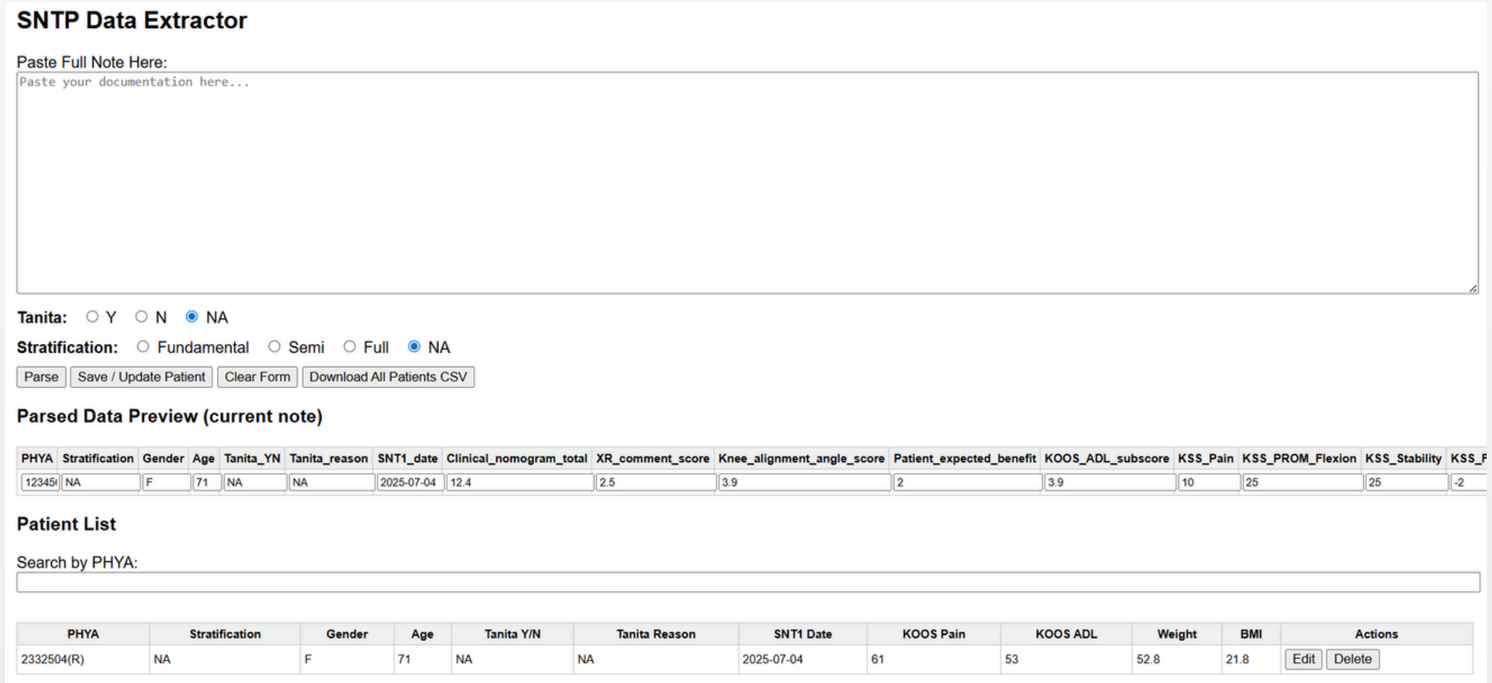
43.58%

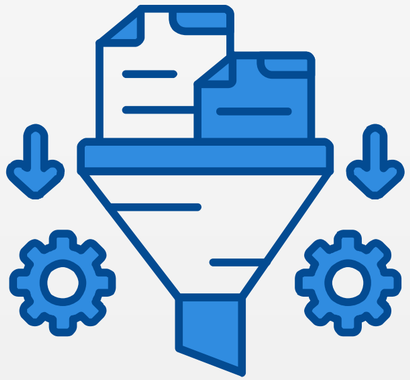
TIME SAVED

ROAD AHEAD

Data extractor for Structured Non-surgical Treatment Program

- Direct data extraction of free text data
  - Multi-therapist data extraction
  - Simple data extraction by clerk
  - Reduced 80% of data input time
- Automated detection of PHYA number & others information

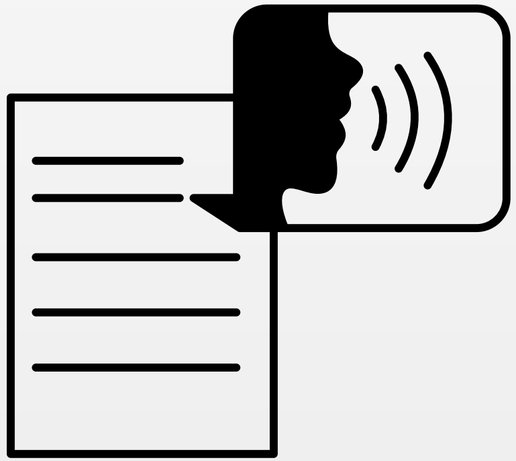


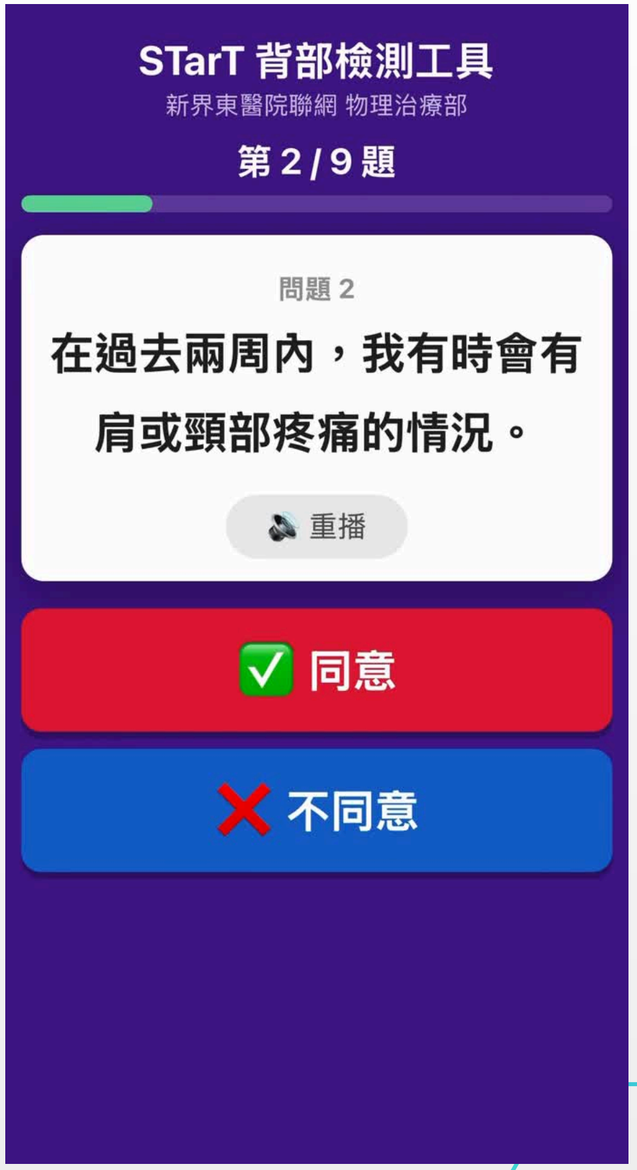


ROAD AHEAD

Voiceover Questionnaire Administration

- HTML-based questionnaire for illiterate patients
- Saved time for assisting patient in filling questionnaires





CONCLUSION

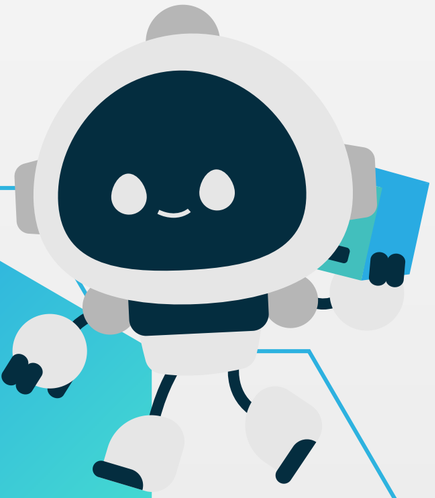
OF PRESENTATION

AI-assisted documentation tool

- **Markedly reduces documentation & Data input Time per patient**
- Provide similar quality assessment time

AI provide possibility in reducing administrative cost

- **Enhance non-clinical efficiency**
- **Provide more therapist-to-patient time**



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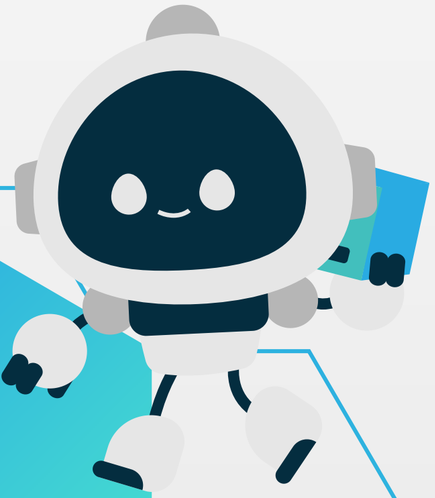
REFERENCE

Morino, T., Murakami, Y., Kinoshita, T., Hino, M., Misaki, H., Yamaoka, S., ... & Takao, M. (2026). Trends in the Prevalence of Adolescent Idiopathic Scoliosis in a Japanese Prefecture: A 25-Year Population-Based School Screening Study Using Moiré Topography. Global Spine Journal, 21925682261417283.

Wang, S., Li, M., Ren, J., Tao, J., Fang, M., & Kong, L. (2025). Global prevalence and associated risk factors of scoliosis in children and adolescents: a systematic review and meta-analysis. BMC Public Health, 25(1), 3640.



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THANK YOU!