



醫院管理局  
HOSPITAL  
AUTHORITY



新界東醫院聯網  
NEW TERRITORIES  
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# CLICK MORE, TYPE LESS

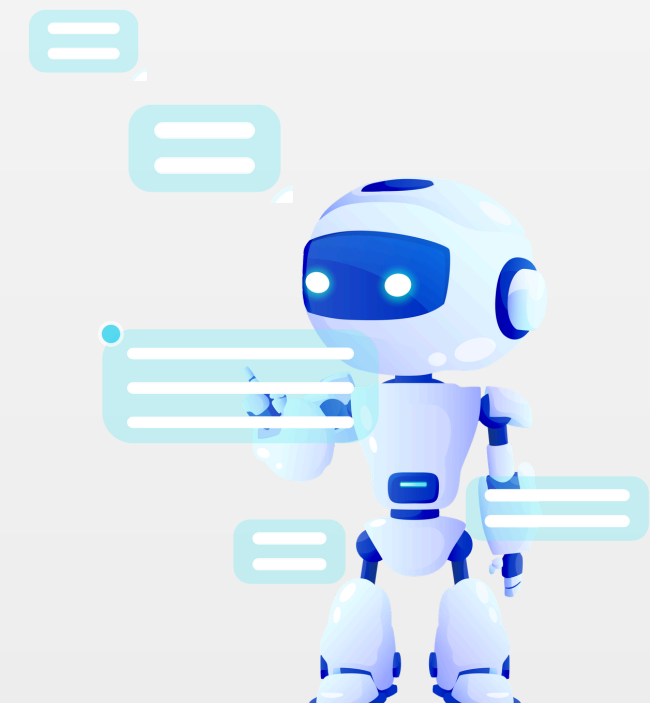
## AI ASSISTED TOOL FOR SCOLIOSIS PHYSIOTHERAPY DOCUMENTATION

Presented by See Ka Hin

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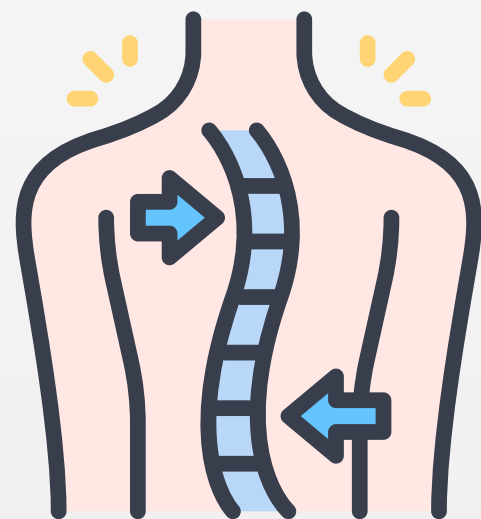
# GROWING DEMANDS

- ◆ **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**

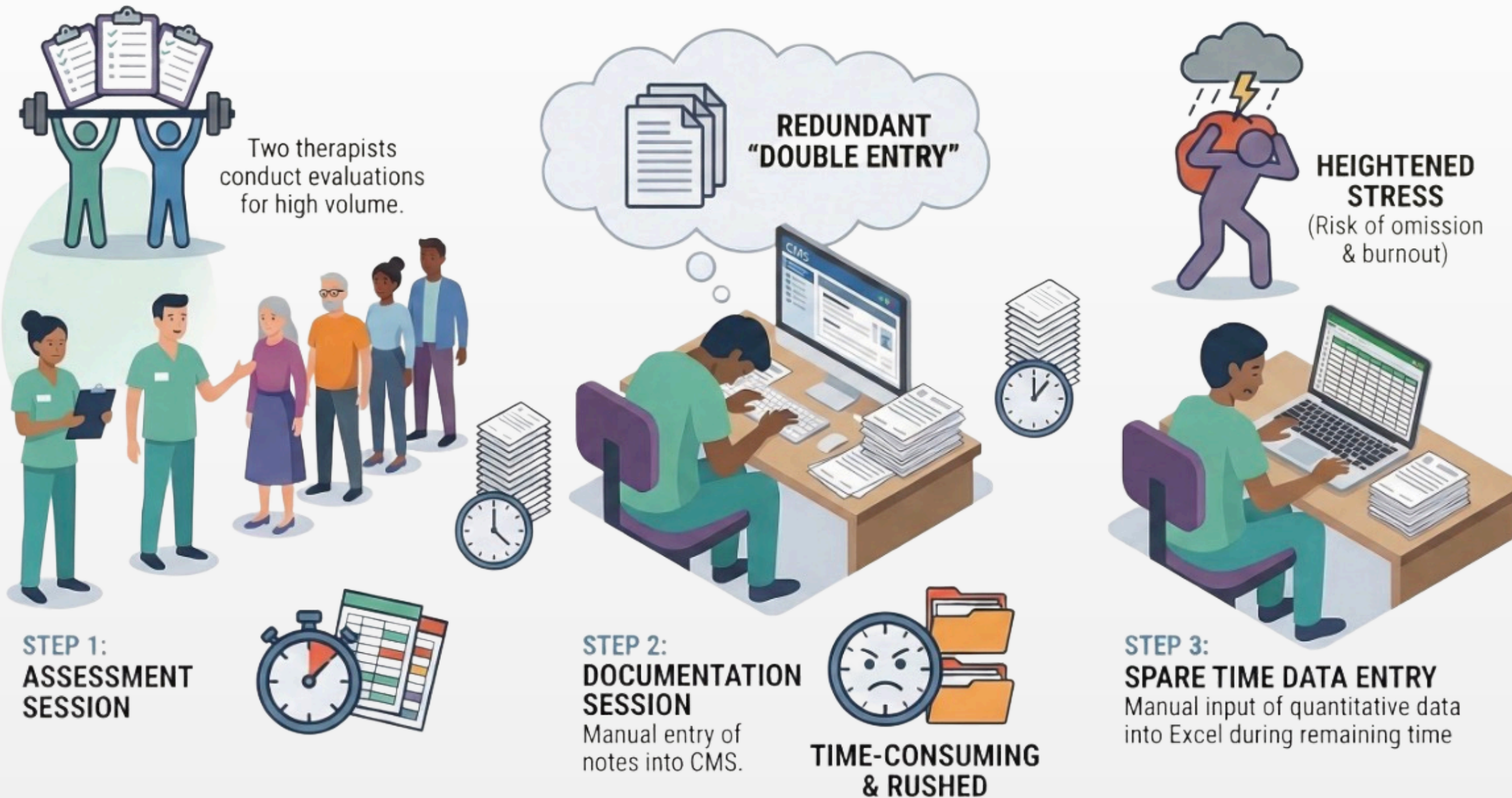
**Free Text Data**  
**Independent variables**  
**Height/Weight etc.**

**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**

**Scoliosis Progress Note Form**  
Physiotherapy Department, PWH

Admin PHYP no.: 1234567

Patients saved: 0 View patient list

Gender:  M  F Age:

**Referral**

Referral Date:  Referral Source:

Reasons for Referral:

Diagnosis:

Exercise Risk Stratification:  NA  Low  High

**Orthopaedic Management**

Management:  Observation  Brace pending  On brace since  Operation

**Subjective Examination**

Scoliosis first detected by:  SHS  Medical check up  Others in

First specialist clinic:  PWH  Others in

**Generated Progress Note**

Click "Generate Note" to preview...



**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	6

**EXAMPLE**



# FROM ADMIN TO CARE



**C**apture structured assessment data



**A**utomate Documentation



**R**edesign For rising demand

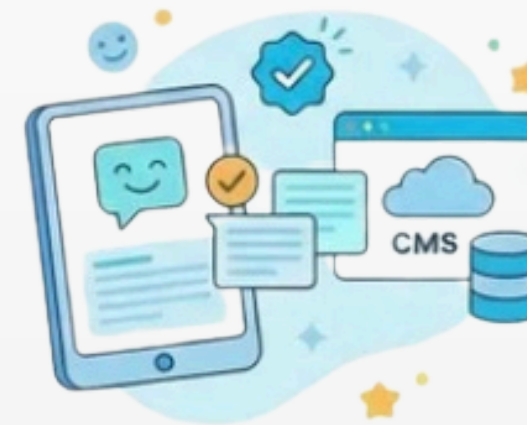


**E**nhance Patient care & Decision-making



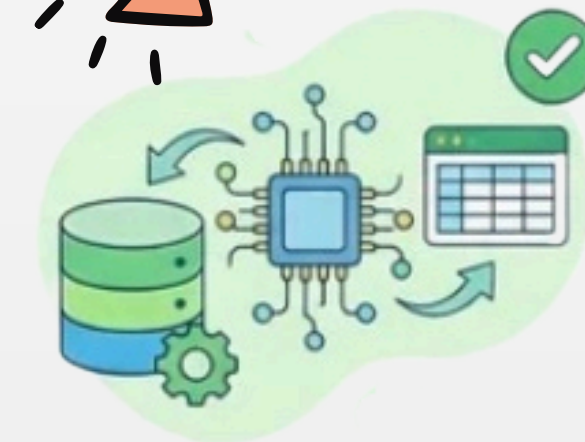
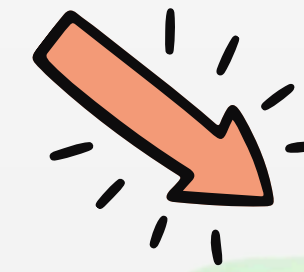
## Step 1: Joint Assessment Session

Two therapists conduct the assessment session together.



## Step 2: Real-Time Documentation

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



## Step 3: Direct Data Extraction

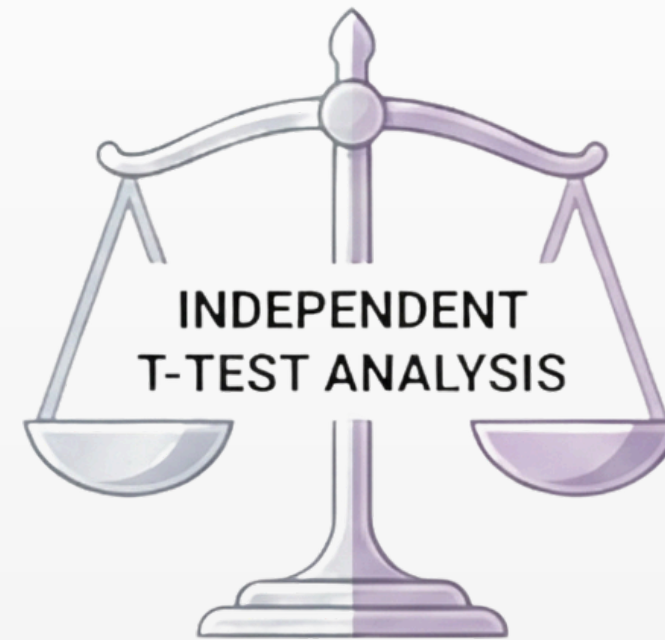
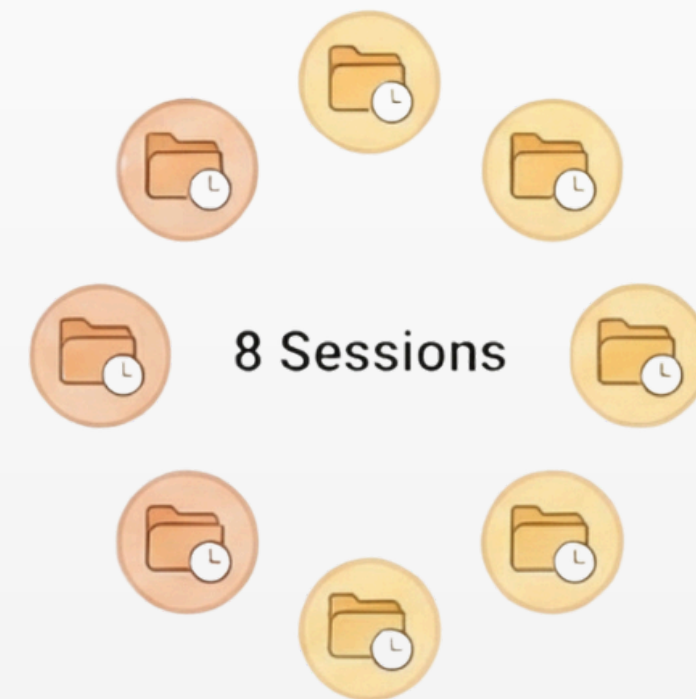
Export structured data directly to Excel for analysis.

# METHODOLOGY

BEFORE IMPLEMENTATION



AFTER IMPLEMENTATION



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



**ASSESSMENT TIME PER PATIENT**

Clinical time spent during the physical scoliosis evaluation.



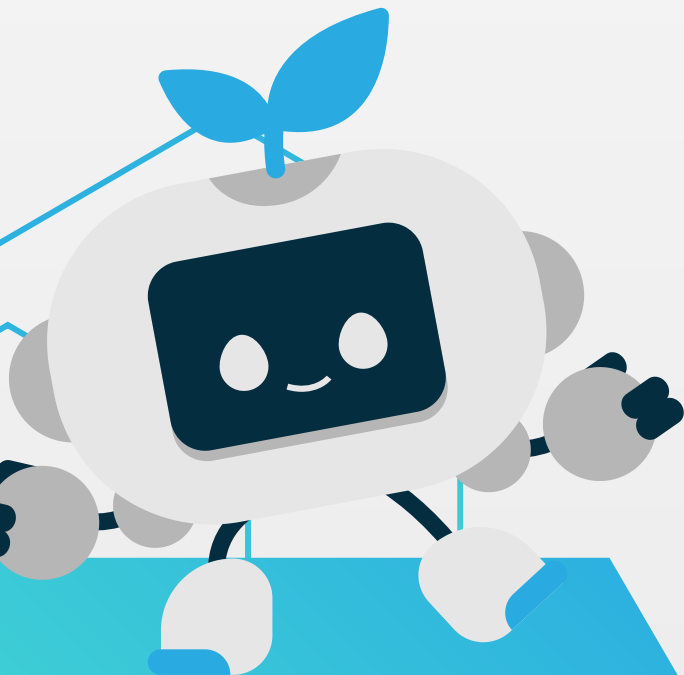
**DOCUMENTATION TIME PER PATIENT**

Time spent generating progress notes for the Clinical Management System.



**DATA INPUT TIME PER PATIENT**

Time spent entering quantitative parameters into Excel for analysis.

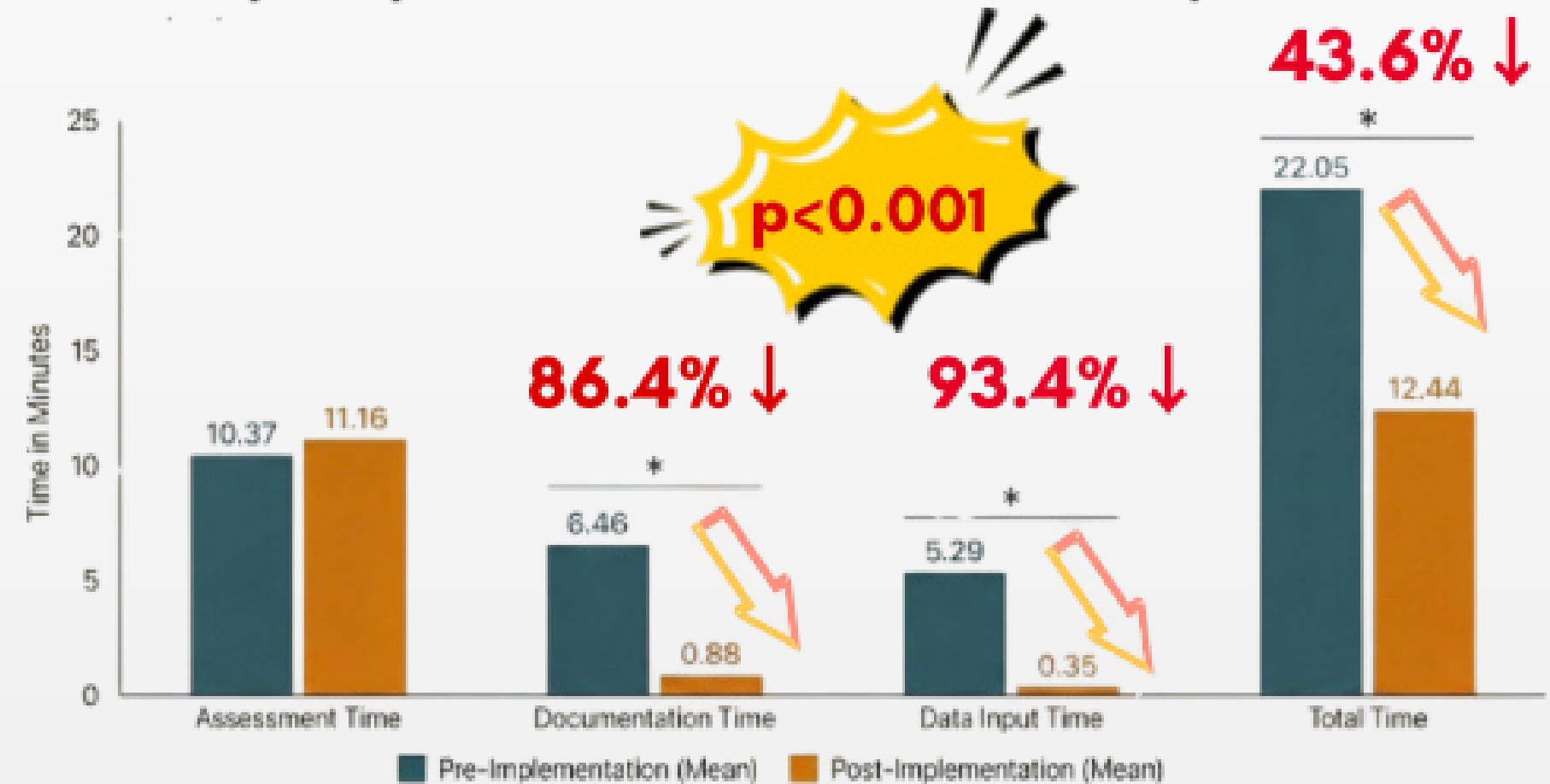


# OUTCOMES

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

**43.58%**  
**TIME SAVED**

Time Required per Patient Before and After the Implementation



# 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

**SNTTP Data Extractor**

Paste Full Note Here:  
Paste your documentation here...

Tanita:  Y  N  NA  
Stratification:  Fundamental  Semi  Full  NA

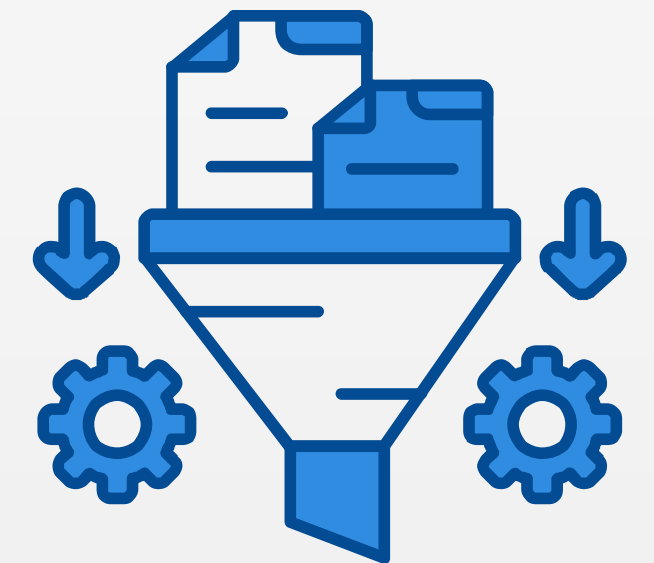
**Parsed Data Preview (current note)**

PHYA	Stratification	Gender	Age	Tanita_YN	Tanita_reason	SNT1_date	Clinical_nomogram_total	XR_comment_score	Knee_alignment_angle_score	Patient_expected_benefit	KOOS_ADL_subscore	KSS_Pain	KSS_PROM_Flexion	KSS_Stability	KSS_F
12345	NA	F	71	NA	NA	2025-07-04	12.4	2.5	3.9	2	3.9	10	25	25	-2

**Patient List**

Search by PHYA:

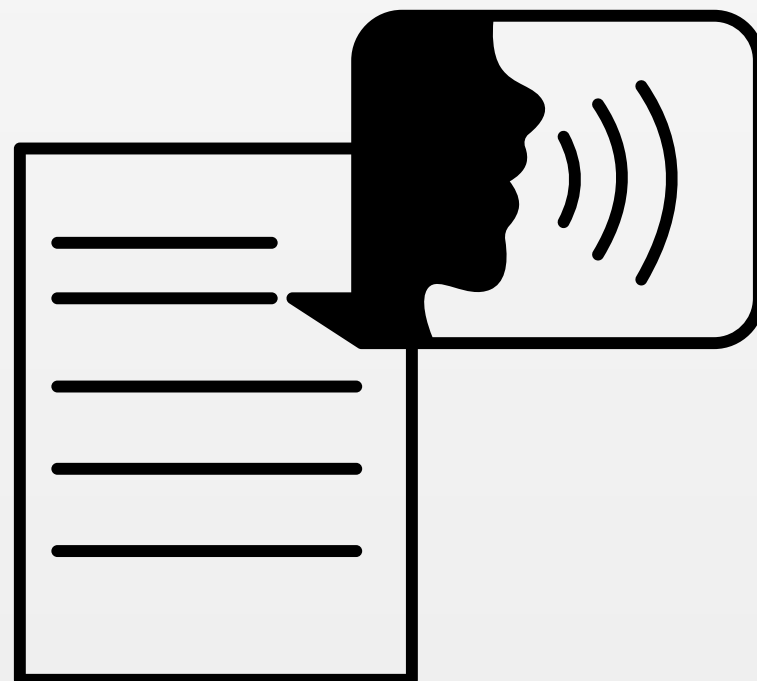
PHYA	Stratification	Gender	Age	Tanita Y/N	Tanita Reason	SNT1 Date	KOOS Pain	KOOS ADL	Weight	BMI	Actions
2332504(R)	NA	F	71	NA	NA	2025-07-04	61	53	52.8	21.8	<input type="button" value="Edit"/> <input type="button" value="Delete"/>



# ROAD AHEAD

## Voiceover Questionnaire Administration

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



**STarT 背部檢測工具**  
新界東醫院聯網 物理治療部

第 2 / 9 題

問題 2

在過去兩周內，我有時會有  
肩或頸部疼痛的情況。

重播

✓ 同意

✗ 不同意

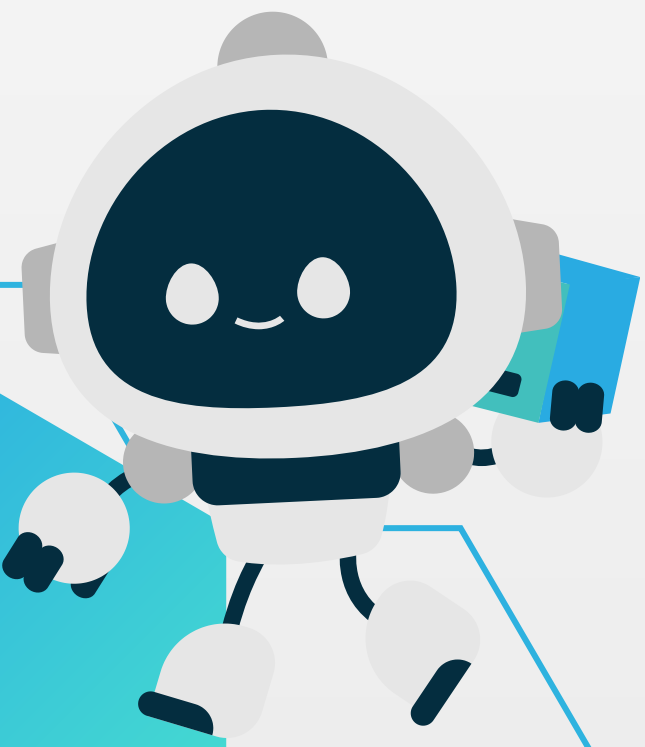
# CONCLUSION OF PRESENTATION

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**

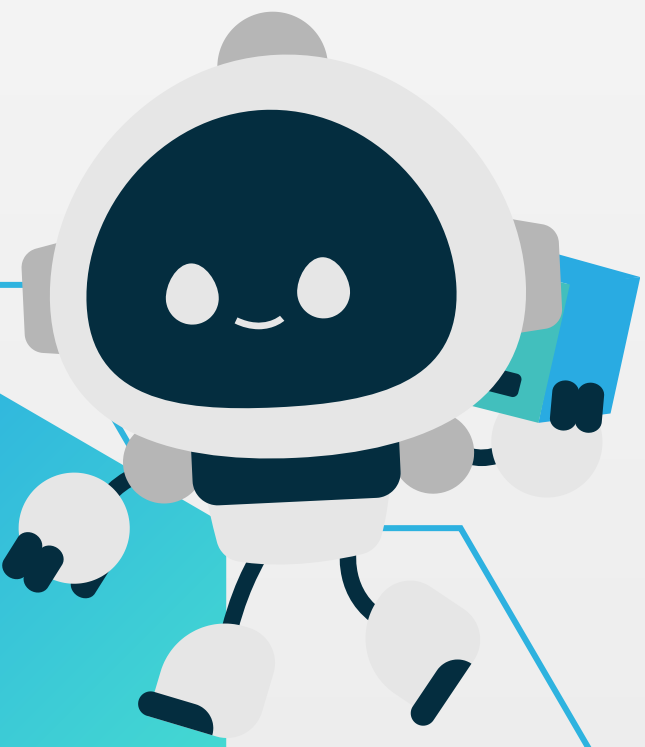


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CARE**

# 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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CARE**

# THANK YOU!

