

109/11/3

病歷書寫品質宣導

-ICD10 AI 智慧預測編碼系統

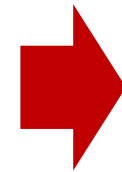
醫事室 褚惠瑛專員

AI可以幫忙什麼事?

時效 提升病歷書寫時效

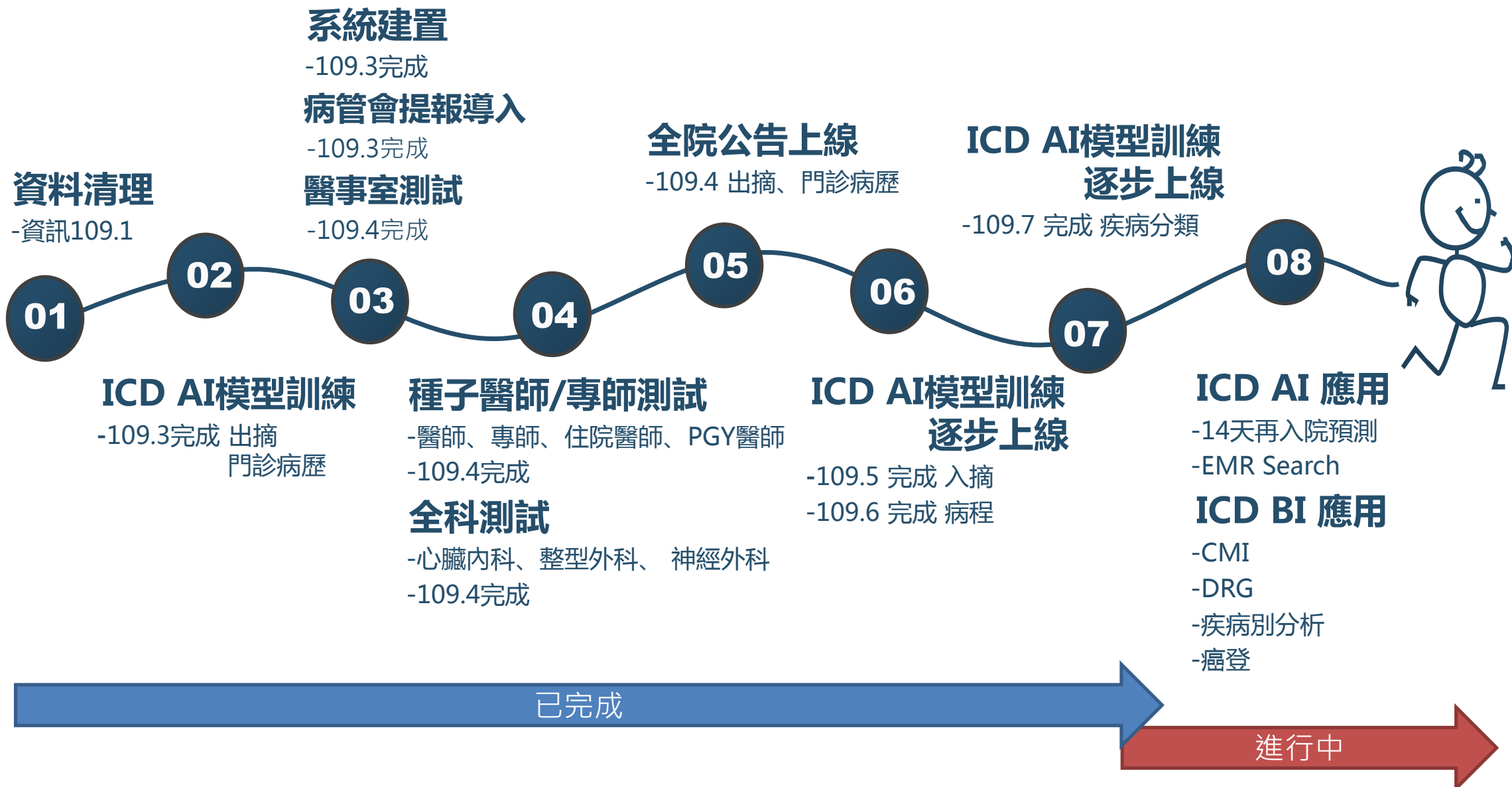
品質 診斷正確

收入 CMI提升，DRG損益(益↑)



ICD10 AI
智慧預測編碼系統

ICD AI導入時程



ICD10 AI 智慧預測編碼系統入口-門診醫囑

ASUS | AICS | ICD-10 Coding Assistant

Clinical Notes EXPAND SPELLCHECK

Subjective Notes

檢傷評估(2級): A01呼吸系統, A0101呼吸短促, 血行動力循環不足。
lung edema refer, 血氧濃度:96%
dyspnea exacerbated today.
ESRD under HD QW2,4.
no chest/abd pain. no fever.
pulmonary edema diagnosed in other hospital.

Objective Notes

Conscious: alert and coherent
HEENT: no other remarkable finding.
Chest: sym expansion. BS rates
Abdomen: tenderness (-)
Back: no tenderness.
Extremity: no asym limb weakness.

Search by ICD-10 CM or keyword

Selected ICD-10 CM REORDER

- R06.00 Dyspnea 呼吸困難 Ditto
- J81.1 pulmonary congestion 慢性肺水腫 Ditto

ICD-10 CM recommendation

Based on medical records

- N18.6 End stage renal disease 末期腎疾病 90%
- I50.9 Heart failure, unspecified 心臟衰竭 23%
- J81.0 Acute pulmonary edema 急性肺水腫 22%

GENERATE ICD-10 儲存回HIS系統

ICD10 AI 智慧預測編碼系統入口-住院醫囑

出院摘要

姓名:潘 病歷號:V1

Discharge Summary

入院基本資料

轉科(床)

診斷

基本資料

姓名:潘

7.11姓名潘 床位號:21 病歷號:V1

指導教學

電子簽章

ICD AI

圖文版

入院摘要

VS指導修改(轉電子病歷用)先點選

轉電子病歷

VS指導修改(教學用)先點選

電子簽章

ICD AI

入院日期: 109/09/01 指導修改醫師(VS): 陳那志

Source of history :

Admission Note

Chief complaint

Present illness

Diagnosis

Source of history

Chief complaint

Present illness

Personal, past and travel...

Allergy

Family history

Social and Psychosocial...

Review of System

Physical Examination

Laboratory

Problem List

Assessment

Plan

Summary

1 STEMI aVL I, high lateral , RCA PL 95 s/p pri

1 STEMI aVL I, high lateral , RCA PL 95 s/p primary PCI

2 Anemia, microcytic, IDA , UGI bleeding suspe

2 Anemia, microcytic, IDA , UGI bleeding suspected

3 Unspecified adrenocortical insufficiency

4 Enlarged prostate with lower urinary tract sy

5 Retention of urine, unspecified

+ ADD DIAGNOSIS

+ ADD DIAGNOSIS

Search by ICD-10 CM or keyword

Selected ICD-10 CM

I21.02 ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery
ST段上升之心肌梗塞 (STEMI) 涉及左前降支冠狀動脈

ICD-10 CM recommendation

Based on diagnosis

I21.3 ST elevation (STEMI) myocardial infarction of unspecified site
未明示部位ST段上升之心肌梗塞 (STEMI) 41%

I21.09 ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall
ST段上升之前壁心肌梗塞 (STEMI) 涉及其他冠狀動脈 20%

Based on medical records

D50.9 Iron deficiency anemia, unspecified
缺鐵性貧血 63%

I25.10 Atherosclerotic heart disease of native coronary artery without angina pectoris
自體的冠狀動脈粥樣硬化心臟病未伴有心絞痛 40%

E11.9 Type 2 diabetes mellitus without complications
第二型糖尿病, 未伴有併發症 35%

Z95.5 Presence of coronary angioplasty implant and graft
存有冠狀動脈血管成形術植入物及移植物 23%

I50.9 Heart failure, unspecified
心臟衰竭 20%

GENERATE ICD

GENERATE ICD-10

儲存回HIS系統

系統特色1-自動預測編碼(品質及收入提升)

AI預測結果，顏色越深代表與診斷相關性越高

透過AI insight(眼睛圖示)，您可以了解AI系統從過去病歷的大數據中發現的模式，AI會將內文中跟此疾病相關的關鍵字，標記顏色，顏色越深，標示相關性越高。

The screenshot displays a clinical coding interface with two main panels: Clinical Notes and ICD-10 Coding Recommendations.

Clinical Notes (EXPAND):

- Subjective Notes:**
 - S: 1. A 53-year-old woman with PTC s/p near **total thyroidectomy** (2019-6-5; 2019-7-3) is referred here for one course of I-131 treatment.
 - 2. **Hx** of Right parotid ca. s/p OP and CCRT (RT*6000cGy) at NTUH, in MK95.
 - 3. Right hearing loss for yrs
 - Hearing loss and **Tinnitus**, Rt/Lt,
- Objective Notes:**
 - A healing surgical scar over Left thyroid lobectomy+CND+ right subtotal lobectomy
 - Pathology:** p-T1a(2)N1a.M0 stage I
 - 20190703: completion of right lobectomy+CND (preserve the nerve but IONM loss of signal)
 - 20190712 right vocal palsy
 - Arrange I-131 treatment.

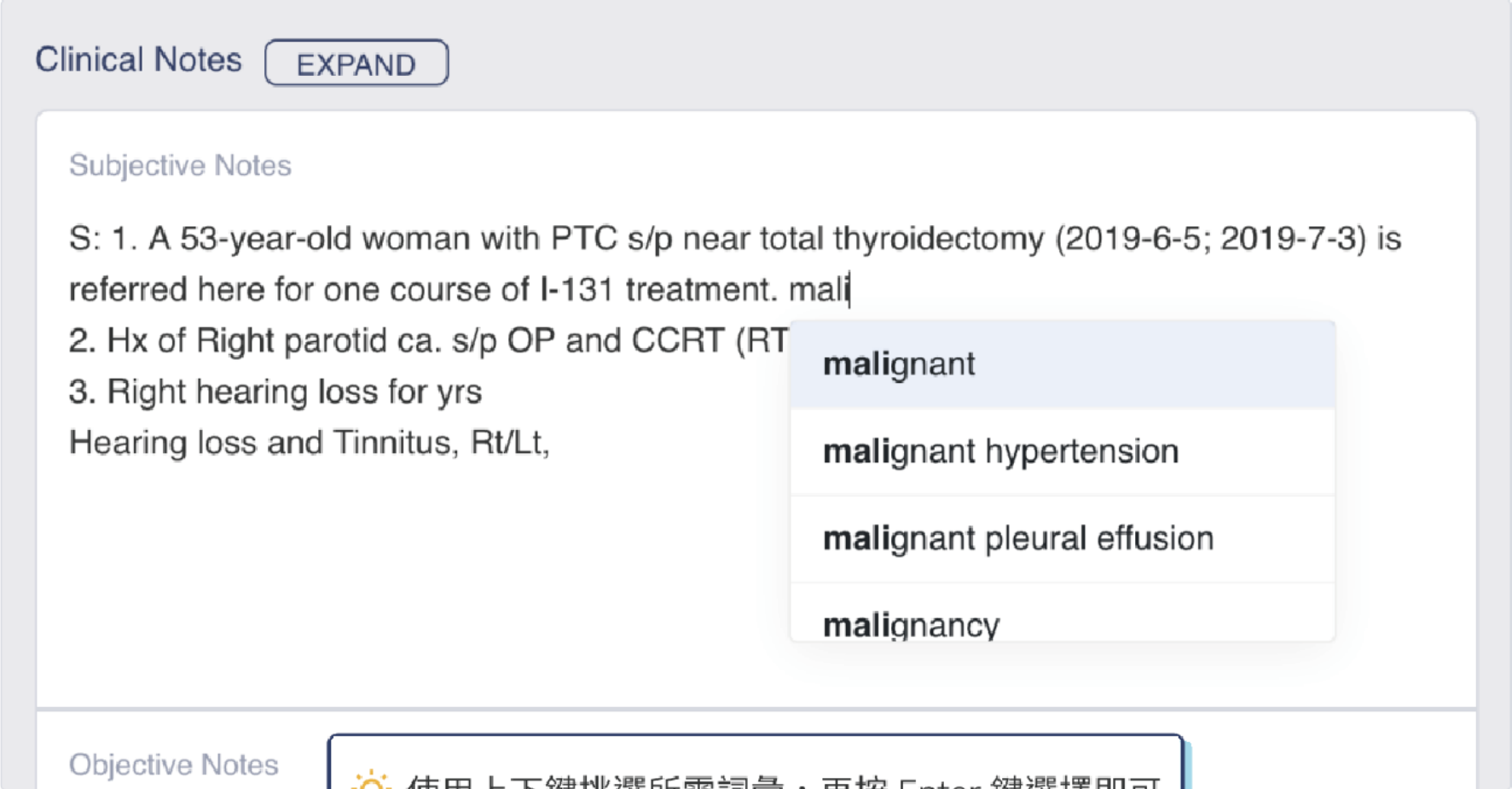
ICD-10 Coding Recommendations:

- Search by ICD-10 code or keyword**
- Selected ICD-10 code:**
 - C73** Malignant neoplasm of thyroid gland 甲狀腺惡性腫瘤
 - J38.00** Paralysis of vocal cords and larynx, unspecified 未明示單雙側聲帶或喉部之麻痺
- Recommended ICD-10 code:**
 - Z51.0** Encounter for antineoplastic radiation therapy 抗腫瘤放射線治療 (50% relevance)
 - H93.13** Tinnitus, bilateral 雙側耳鳴 (45% relevance)
 - C07** Malignant neoplasm of parotid gland 腮腺惡性腫瘤 (35% relevance)
 - H91.93** Unspecified hearing loss, bilateral 雙側聽障 (26% relevance)
 - H93.12** Tinnitus, left ear 左側耳耳鳴 (21% relevance)

At the bottom, there are two buttons: "GENERATE ICD-10" and "儲存回 HIS 系統".

系統特色 2 - 書寫引導(完整性)

輸入字詞前3碼，列出相關字詞提供醫師選擇



The screenshot shows a software interface for writing clinical notes. At the top left, there is a tab labeled "Clinical Notes" and a button labeled "EXPAND". Below this, the "Subjective Notes" section is active, containing a list of patient history items. The third item, "3. Right hearing loss for yrs", is currently selected. A dropdown menu is open to the right of this item, displaying four suggestions: "malignant", "malignant hypertension", "malignant pleural effusion", and "malignancy". The first suggestion, "malignant", is highlighted with a light blue background. At the bottom of the interface, there is a section for "Objective Notes" and a callout box with a lightbulb icon and text explaining the selection process.

Clinical Notes EXPAND

Subjective Notes

S: 1. A 53-year-old woman with PTC s/p near total thyroidectomy (2019-6-5; 2019-7-3) is referred here for one course of I-131 treatment. mali


2. Hx of Right parotid ca. s/p OP and CCRT (RT

3. Right hearing loss for yrs

Hearing loss and Tinnitus, Rt/Lt,

- malignant
- malignant hypertension
- malignant pleural effusion
- malignancy

Objective Notes

 使用上下鍵挑選所需詞彙，再按 Enter 鍵選擇即可

系統特色 3 - 縮寫搜尋(便利性)

ASUS | FAICS | ICD-10 Coding Assistant

Clinical Notes **EXPAND**

Subjective Notes

檢傷評估(2 級): A03腸胃系統, A0309吐血, 急性或明顯吐血。外院診斷GI Bleeding, 血氧濃度:97%
請 一般隔離 防護
請使用 外科口罩 防護
請使用 手套 防護

Referred from 玉里慈濟醫院 for UGI bleeding.

Objective Notes

【1090511】血壓:117/81 mmHg;脈搏:52 次/分;體溫:36.4 C;

ALLERGY : nil,
MEDICATION :
★ NOVOMIX 30 FlexPen 300IU/3ml/vial (藍) 12
QDAC

ICD-10 Coding Recommendations

Q HFPEF

I50.3 Diastolic (congestive) heart failure
舒張性(充血性)心臟衰竭

K25.9 Gastric ulcer, unspecified as to whether acute or chronic, not bleeding
胃潰瘍, 未明示急性或慢性, 未出血

I85.00 Esophageal varices without hemorrhage
食道靜脈曲張未伴有出血

K92.2 Gastrointestinal hemorrhage, upper GI
胃腸道出血

Recommended ICD-10 code

K74.69 Other cirrhosis of liver
其他的肝硬化

I85.11 Secondary esophageal varices with hemorrhage
繼發性食道靜脈曲張伴有出血

GENERATE ICD-10 儲存回HIS系統

縮寫搜尋

EX: 心臟衰竭縮寫HFpEF(HFPEF、hfpef)

於搜尋處輸入縮寫字詞, 都可以找得到

ASUS | FAICS | ICD-10 Coding Assistant

Clinical Notes **EXPAND**

Subjective Notes

檢傷評估(2 級): A03腸胃系統, A0309吐血, 急性或明顯吐血。外院診斷GI Bleeding, 血氧濃度:97%
請 一般隔離 防護
請使用 外科口罩 防護
請使用 手套 防護

Referred from 玉里慈濟醫院 for UGI bleeding.

Objective Notes

【1090511】血壓:117/81 mmHg;脈搏:52 次/分;體溫:36.4 C;

ALLERGY : nil,
MEDICATION :
★ NOVOMIX 30 FlexPen 300IU/3ml/vial (藍) 12
QDAC

ICD-10 Coding Recommendations

Q I50.3

I50.3 Diastolic (congestive) heart failure
舒張性(充血性)心臟衰竭

I50.30 Unspecified diastolic (congestive) heart failure
未明乎舒張性(充血性)心臟衰竭

I50.31 Acute diastolic (congestive) heart failure
急性舒張性(充血性)心臟衰竭

I50.32 Chronic diastolic (congestive) heart failure
慢性舒張性(充血性)心臟衰竭

I50.33 Acute on chronic diastolic (congestive) heart failure
急性慢性舒張性(充血性)心臟衰竭

Recommended ICD-10 code

K74.69 Other cirrhosis of liver 35%
其他的肝硬化

I85.11 Secondary esophageal varices with hemorrhage 25%
繼發性食道靜脈曲張伴有出血


GENERATE ICD-10 儲存回HIS系統

系統特色4-關鍵字詞提示 (完整性)

ICD-10 Coding Recommendations


Search by ICD-10 code or keyword

Selected ICD-10 code REORDER

Z51.0 Encounter for antineoplastic radiation therapy
抗腫瘤放射線治療  ^

Other related tags

odynophagia + cancer + neck + dysuria + diarrhea + GS + hoarseness + fever +
oral ulcer + ENT + cough + anal pain + itching + scaling + Anorexia +

H93.13 Tinnitus, bilateral
雙側耳鳴  ^

Other related tags

tinnitus + anxiety + insomnia + dizziness + headache + high pitch + visual aura +
severe headache + head heaviness + photophobia + motion sickness + TV + depression +
frequent headache + tired + purulent nasal discharge + LMD +

系統特色5-錯字偵測(正確性)

- 透過偵錯矯正功能，AI會自動判斷出有可能的錯字，並將其以紅色底線標注
- 點選標註錯字啟動AI智能辭典，AI會自動推薦正確率最高單字
- 當您點選符合需求的正確單字後，系統會將其回填至病歷內文

The screenshot shows a clinical notes interface with a spelling correction pop-up. The pop-up displays the word 'insignificant' with a red underline. Below the word are three buttons: 'insignificant', 'insignificant', and 'unsignficant'. At the bottom of the pop-up are three icons: a plus sign in a circle, a trash can in a circle, and a book in a circle. Arrows point from these icons to three callout boxes below the screenshot.

Clinical Notes EXPAND

Subjective Notes

doing well. bw:80 kg
COPD just discharged from our clinic ,CAG : insignificant CAD
Thallium scan: anterior wall
, smoking about 2 pack
per day,patient used aspirin 100 mg
, zestril 10 mg, s/p laminectomy of spine
location: substeranl
nature expression-like

ICD-10 Coding Recommendations

Spell Check ×

insignificant

insignificant

unsignficant

+

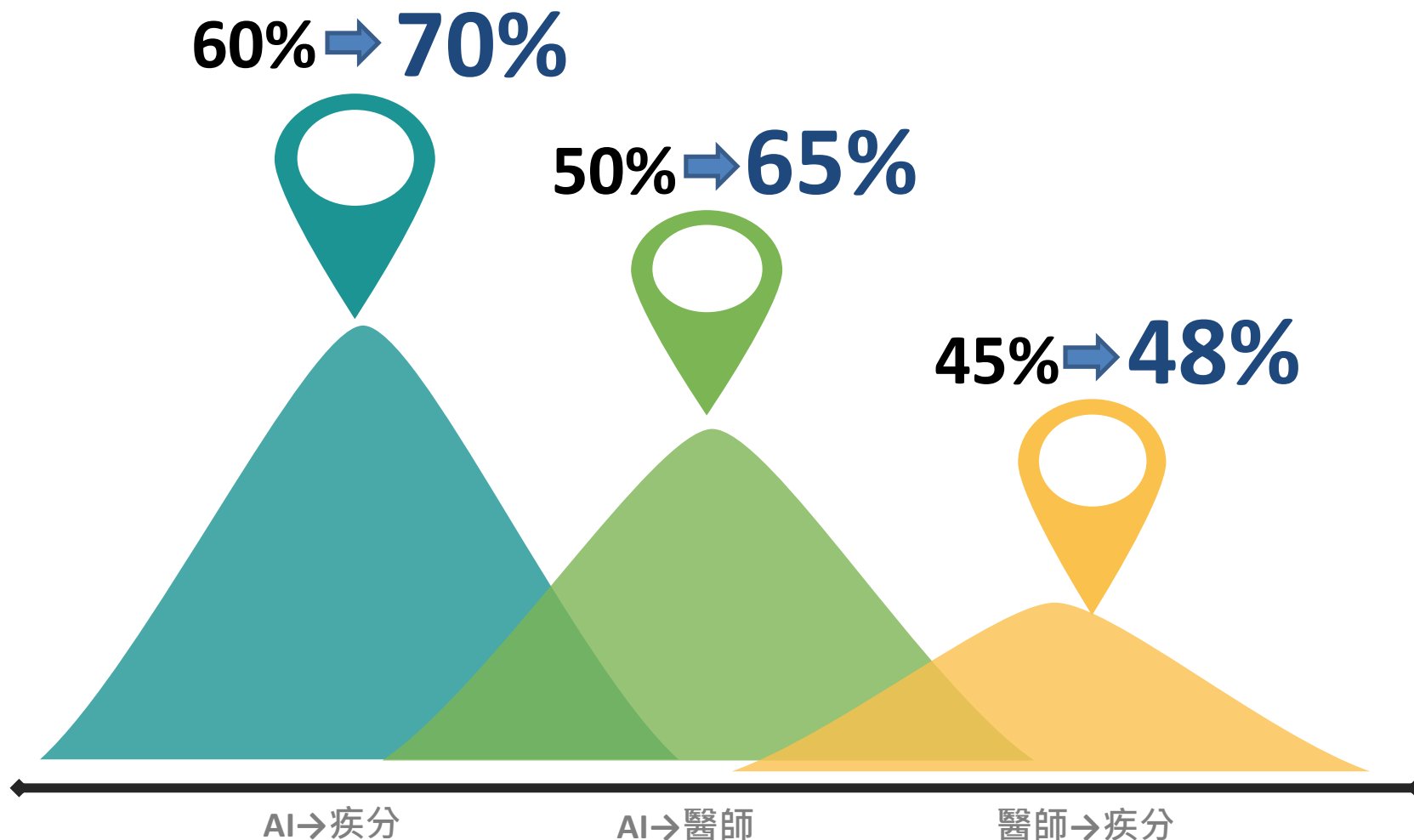
新增至 AI 智能辭典，不需修正

跳過此單字，不需修正

檢視及管理 AI 智能辭典

成效-ICD AI縮短的距離(7月→10月)

205 個案分析



成效-提升CMI權重案例

案例一：腎結石併腎水腫執行取石術
病史欄有提到HBV，但出摘診斷欄未描述

The screenshot shows the AICS Medical Coding Assistant interface. On the left, the 'Discharge Notes' section is expanded, showing a diagnosis of 'Hydronephrosis with renal and ureteral calculous obstruction' with code 'N13.2'. On the right, the 'ICD-10 CM' section shows a search for 'Hydronephrosis with renal and ureteral calculous obstruction' resulting in code 'N13.2'. Below this, the 'ICD-10 CM recommendation' section is based on medical records and lists two options: 'B19.10 Unspecified viral hepatitis B without ...' (highlighted in a red box) and 'N20.2 Calculus of kidney with calculus of ur...'. The interface also includes a 'SPELLCHECK' button and various navigation icons.



	權重
醫師-無HBV	1.0457
AI-推薦HBV	1.1954

成效-提升DRG損益案例(益↑)

案例二：人工髖關節感染執行髖關節再置換術,因術後血色素下降並且有輸血(現行DRG案例)

The screenshot shows the ICD-10 Coding Assistant interface. On the left, the 'Discharge Notes' panel shows a diagnosis of 'Pyogenic arthritis, unspecified' with the code 'T84.52XA'. On the right, the 'ICD-10 CM' panel shows a search for 'Pyogenic arthritis, unspecified' and a list of recommendations. The recommendation for 'Acute posthemorrhagic anemia' (D62) is highlighted with a red box. The recommendation includes a 'CC' (Comorbidity) icon and a '61%' probability.



	權重	申報費用
無Acute posthemorrhagic anemia次診斷	2.85	7,575
有Acute posthemorrhagic anemia次診斷	3.4016	34,936(↑27,361)

ICD10 AI 智慧預測編碼系統-建置進度

系統名稱	表單	建置進度
門急診醫囑系統	門診病歷(SOAP)	V
住院醫囑系統	入院摘要	V
	出院摘要	V
	住院中診斷	預計11/15
	Problem List	預計11/15



問題聯繫窗口

系統問題		
門急診醫囑系統	典穎/建泰	17639
住院醫囑系統	清孝	12275
AI系統操作/宣導		
病歷組	曉凡/淑芳	13178
	雨青/凡庭	13122、13103

讓醫師書寫病歷變得更方便、更省時、更準確

THE END