

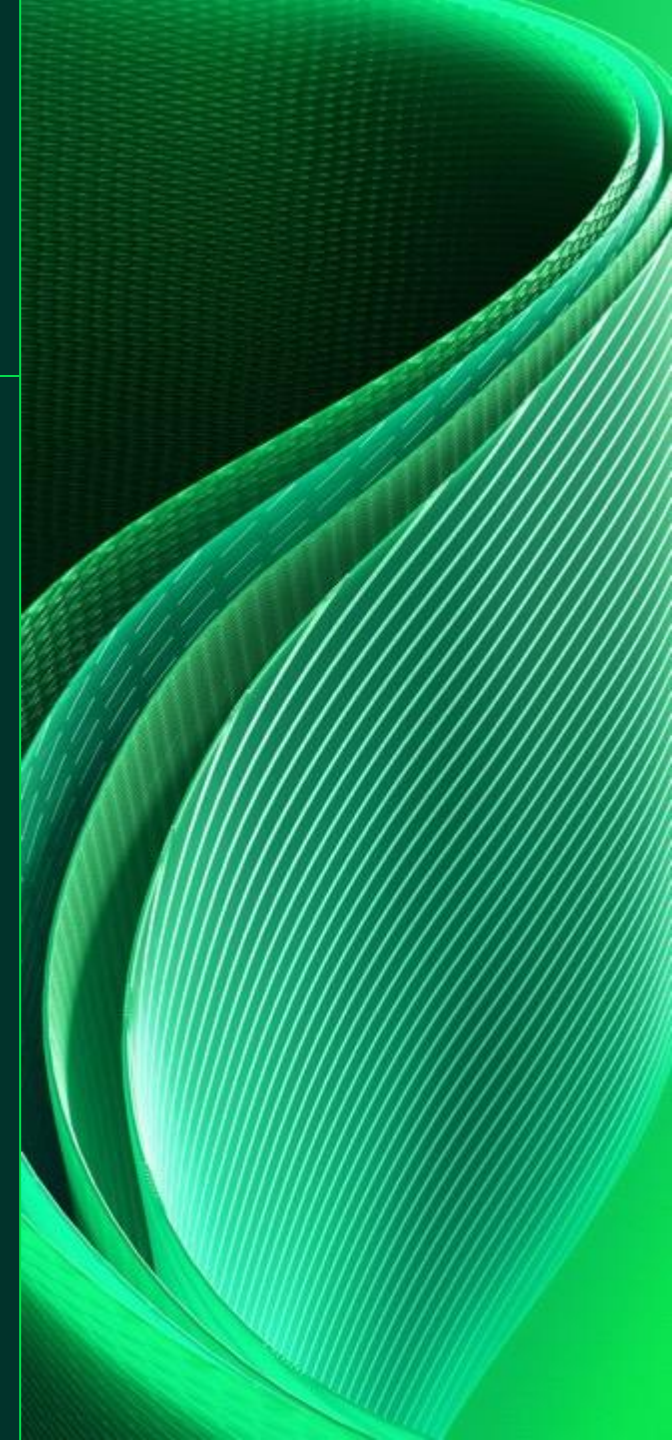


Preparing Coders and Leadership for AI-Driven Medical Coding

Maarten Lambrecht, MD

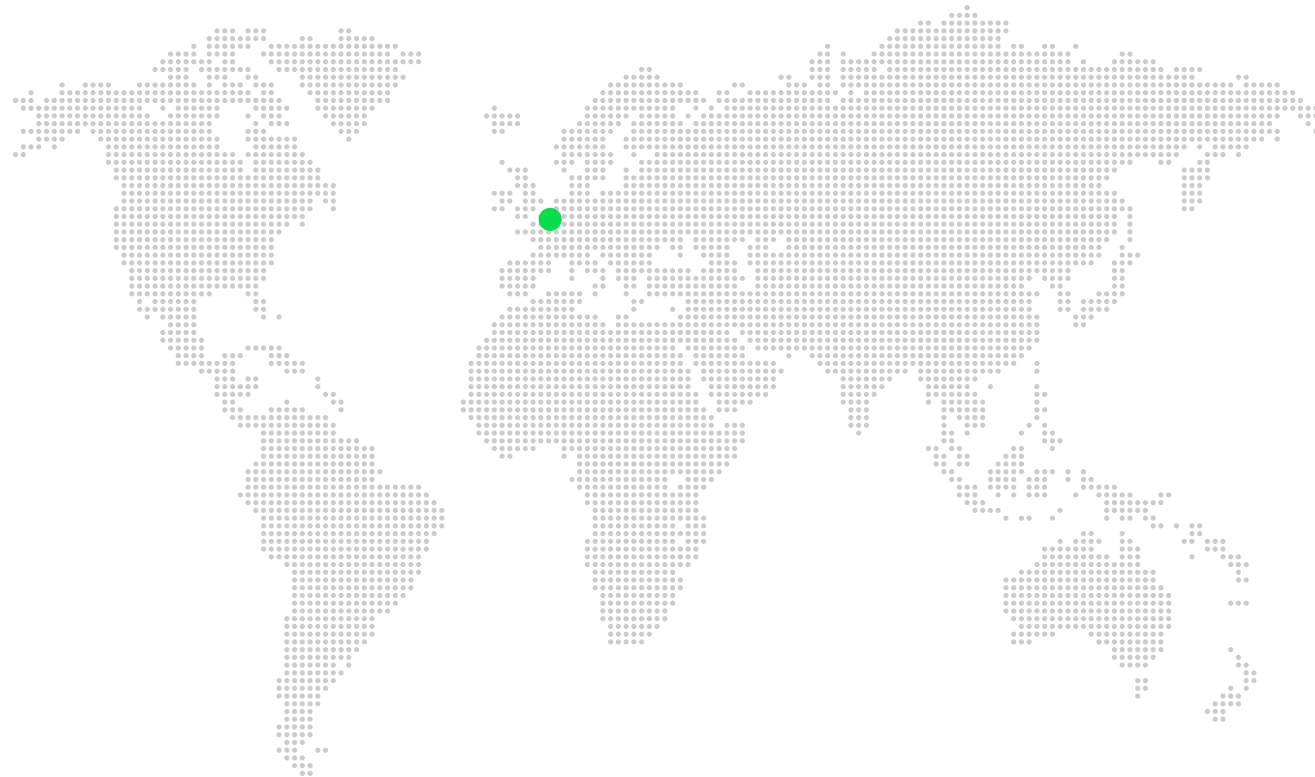
Karen Pien, MD

September 11th, 2025



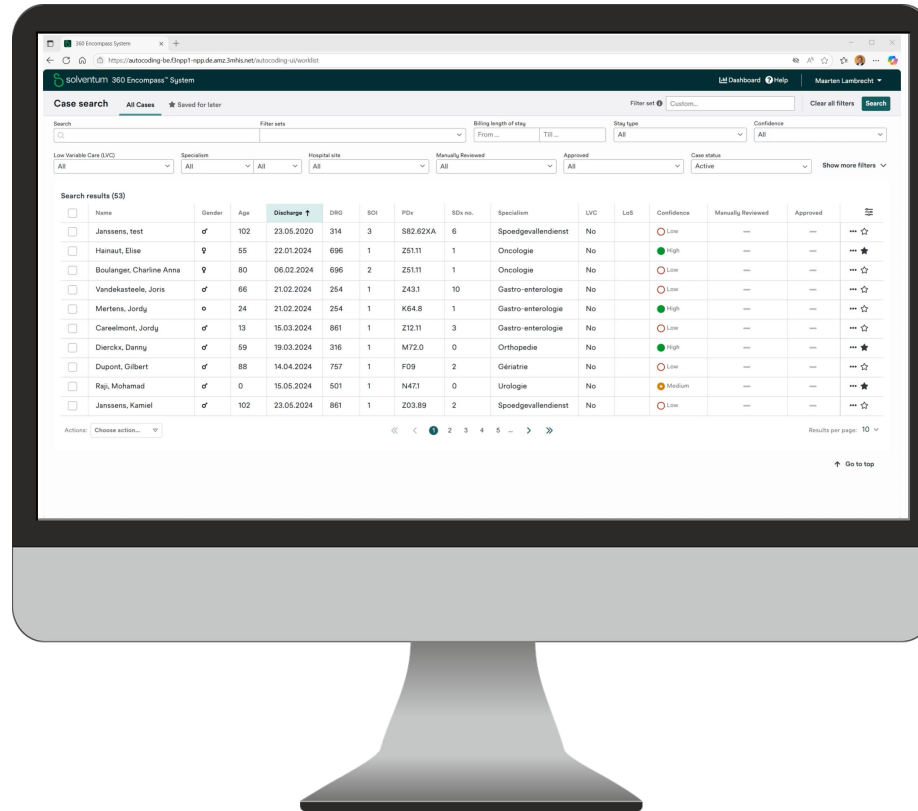
Agenda

- 1 Technical solution
- 2 Adaptation process in UZ Brussels
- 3 Outcome



1. Technical Solution - demo

- Solventum™ 360 Encompass™
- Custom solution for Belgium
 - Dutch and French
 - ICD10 CM and PCS



Case search All Cases ★ Saved for later Filter set: Custom... Clear all filters Search

Search Filter sets Billing length of stay From ... Till ... Stay type Confidence

Low Variable Care (LVC) Specialism Hospital site Manually Reviewed Approved Case status Show more filters

Search results (53)

<input type="checkbox"/>	Name	Gender	Age	Discharge ↑	DRG	SOI	PDx	SDx no.	Specialism	LVC	LoS	Confidence	Manually Reviewed	Approved	
<input type="checkbox"/>	Janssens, test	♂	102	23.05.2020	314	3	S82.62XA	6	Spoeedgevallendienst	No		Low	—	—	... ☆
<input type="checkbox"/>	Hainaut, Elise	♀	55	22.01.2024	696	1	Z51.11	1	Oncologie	No		High	—	—	... ★
<input type="checkbox"/>	Boulangier, Charline Anna	♀	80	06.02.2024	696	2	Z51.11	1	Oncologie	No		Low	—	—	... ☆
<input type="checkbox"/>	Vandekastele, Joris	♂	66	21.02.2024	254	1	Z43.1	10	Gastro-enterologie	No		Low	—	—	... ☆
<input type="checkbox"/>	Mertens, Jordy	♂	24	21.02.2024	254	1	K64.8	1	Gastro-enterologie	No		High	—	—	... ☆
<input type="checkbox"/>	Careelmont, Jordy	♂	13	15.03.2024	861	1	Z12.11	3	Gastro-enterologie	No		Low	—	—	... ☆
<input type="checkbox"/>	Dierckx, Danny	♂	59	19.03.2024	316	1	M72.0	0	Orthopedie	No		High	—	—	... ★
<input type="checkbox"/>	Dupont, Gilbert	♂	88	14.04.2024	757	1	F09	2	Gériatrie	No		Low	—	—	... ☆
<input type="checkbox"/>	Raji, Mohamad	♂	0	15.05.2024	501	1	N47.1	0	Urologie	No		Medium	—	—	... ★
<input type="checkbox"/>	Janssens, Kamiel	♂	102	23.05.2024	861	1	Z03.89	2	Spoeedgevallendienst	No		Low	—	—	... ☆

Case Confidence

- 3 confidence levels
 - High – 48% of cases
 - Medium – 26% of cases
 - Low – 26% of cases
- Definition of “autocodable”
 - Different per hospital
 - Strict due to secondary use
 - F_1 -score: 96%
- Feedback loop

Specialism	LVC	LoS	Confidence	Manually Reviewed	Ap
Spoedgevallendienst	No		○ Low	—	
Oncologie	No		● High	—	
Oncologie	No		○ Low	—	
Gastro-enterologie	No		○ Low	—	
Gastro-enterologie	No		● High	—	
Gastro-enterologie	No		○ Low	—	
Orthopedie	No		● High	—	
Gériatrie	No		○ Low	—	
Urologie	No		● Medium	—	
Spoedgevallendienst	No		○ Low	—	

Case search All Cases ★ Saved for later Filter set: Custom... Clear all filters Search

Search Filter sets Billing length of stay From ... Till ... Stay type Classic acute care stay Confidence All

Low Variable Care (LVC) All Specialism All Hospital site All Manually Reviewed All Approved All Case status Active Show more filters

Search results (4)

<input type="checkbox"/>	Name	Gender	Age	Discharge ↑	DRG	SOI	PDx	SDx no.	Specialism	LVC	LoS ↑	Confidence	Manually Reviewed	Approved	<input type="checkbox"/>
<input type="checkbox"/>	Detollenaere, Georges	♂	63	14.05.2025	850	1	Z79.02	2	Chirurgie	No		Low		—	... ☆
<input type="checkbox"/>	Martin, Louis	♂	63	14.05.2025	680	2	Q85.89	5	Chirurgie	No		Low	—	—	... ☆
<input type="checkbox"/>	Chevalier, Thérèse Franc...	♀	38	10.08.2025	233	2	K35.20	5	Chirurgie	No		Low	—	—	... ☆
<input type="checkbox"/>	Teerlinck, Amelie	♀	38	20.09.2025	861	1	Z68.28	0	Chirurgie	No		Low	—	—	... ☆

Actions: Choose action... « < 1 > » Results per page: 10

[↑ Go to top](#)

Length of Stay

- Billed LoS
- Justified LoS
- Outliers


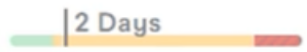




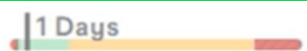



- Directly related to financing in Belgium
 - Closed envelope
 - Based on ALOS

- Focus:
 - Optimizing casemix

Filter set **i** Custom...

Billing length of stay: From ... Till ... Stay type: Classic acute care stay

Reviewed: Approved: All Case status: Active

Specialism	LVC	LoS 	Confidence	Manually Review
Chirurgie	No	 2 Days	 Low	
Chirurgie	No	 2 Days	 Low	—
Chirurgie	No	 1 Days	 Low	—
Chirurgie	No	 1 Days	 Low	—

1 > >>

Danny Dierckx
Male, 59 years old 5000019

Confidence: High
Admission - Discharge: 19.03.2024 - 19.03.2024
Group: APR v38 <=74 (BE)
DRG: 316
SOI: 1
ROM: 1
LVC: no
Specialism: Orthopedie
Discard Save

Documents (1)
Sorting and grouping: Chronologically asc
Mar 19, 2024 (1)
Onslagbrief

✓ Ernstige graad van Dupuytren Links. Vnl thv 4e en 5e straal. Rechts aanwezig in mindere mate.

Behandeling:

Op 19-03-2021 werd uw patiënt onder locoregionale anaesthesie geopereerd. ✓ Het betrof een Dupuytren release LINKSZIJDIG. De procedure verliep vlot en ongecompliceerd.

Postoperatief verloop:

Uw patiënt kende een ongecompliceerd herstel.

Uw patiënt was op 19-03-2021 in die mate hersteld dat hij het ziekenhuis kon verlaten.

Wij stellen volgende behandeling voor:

- Dagelijks thuisverpleging: Wondzorg dmv Isobetadine vetverband.
- De hechtingen zullen verwijderd worden op de controle raadpleging.
- Relatieve rust
- Analgesie volgens noodzaak
- Thuismedicatie verder

Bespreking en besluit:

✓ Uw patiënt werd opgenomen op het dagziekenhuis van de dienst orthopedie ikv Dupuytren LINKS. Postoperatief ongecompliceerd verloop.

Afspraak:

Graag zien wij uw patiënt terug op de raadpleging orthopedie op 05-04-2021 om 09:00u.

In tussentijd vertrouwen wij de patiënt toe aan uw goede zorgen.
Met collegiale hoogachting,

Codes (2)
 Accepted (2) Rejected (0) + Add Code

Diagnoses (1)

	Confidence	SOI	Source	Chronical	POA	
✓ M72.0	<input type="range"/>	P		<input type="checkbox"/>	Y	Reject
Principal	Palmar fascial fibromatosis [Dupuytren]					

Procedures (1)

	Confidence	Source	Date	Location	Anesthesia	
✓ OJNK0ZZ	<input type="range"/>		19.03.2024	1	3	Reject
Release Left Hand Subcutaneous Tissue and Fascia, Open Approach						

2. Adaptation process in UZ Brussels

7 highly skilled coders (6,6 FTE's)

- >40K daycare admissions
- >30K classical hospitalisations

Change in Mindset and Workflow



I don't understand why it makes specific errors
Why doesn't it learn from my habits
Reviewing is more tiring

2. Adaptation process in UZ Brussels

Four stages to “Lean coding” - MIT Sloan Management Review

Beginner

- Startup phase
- Resistance by coders
 - “We are different”
 - Tool fatigue
- Modest improvements
- Actively promote new way of working

1

In Transition

- Low-hanging fruit
 - Better workflow
 - Fast coding of simple cases
- Fast improvements
- Set higher targets
- Boost morale
- Worst case: layoff

2

Advanced

- High experience
- High performance
- Center of excellence
- Slow improvements
- Lower expectations
- More resources for improvement projects

3

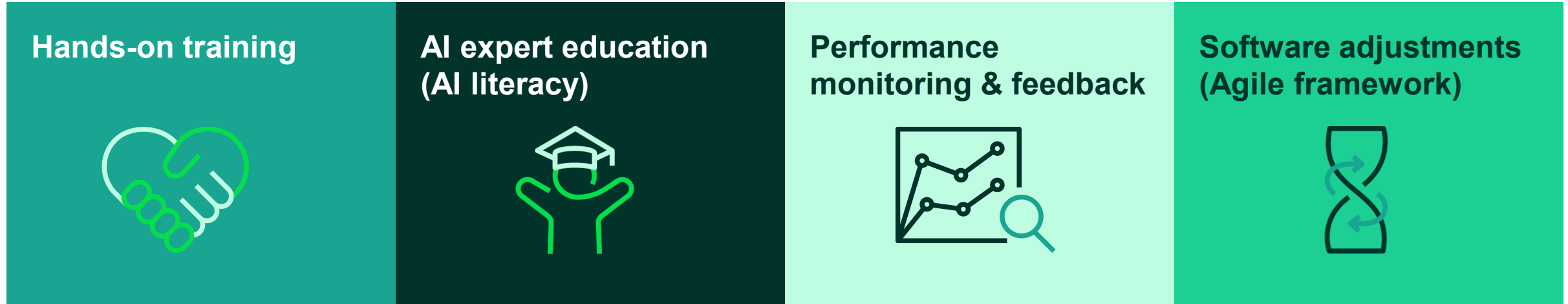
Cutting Edge

- Adaptation to AI coding completed
- Move beyond current frontiers
- Benefits not only for the hospital, but also outside the hospital

4

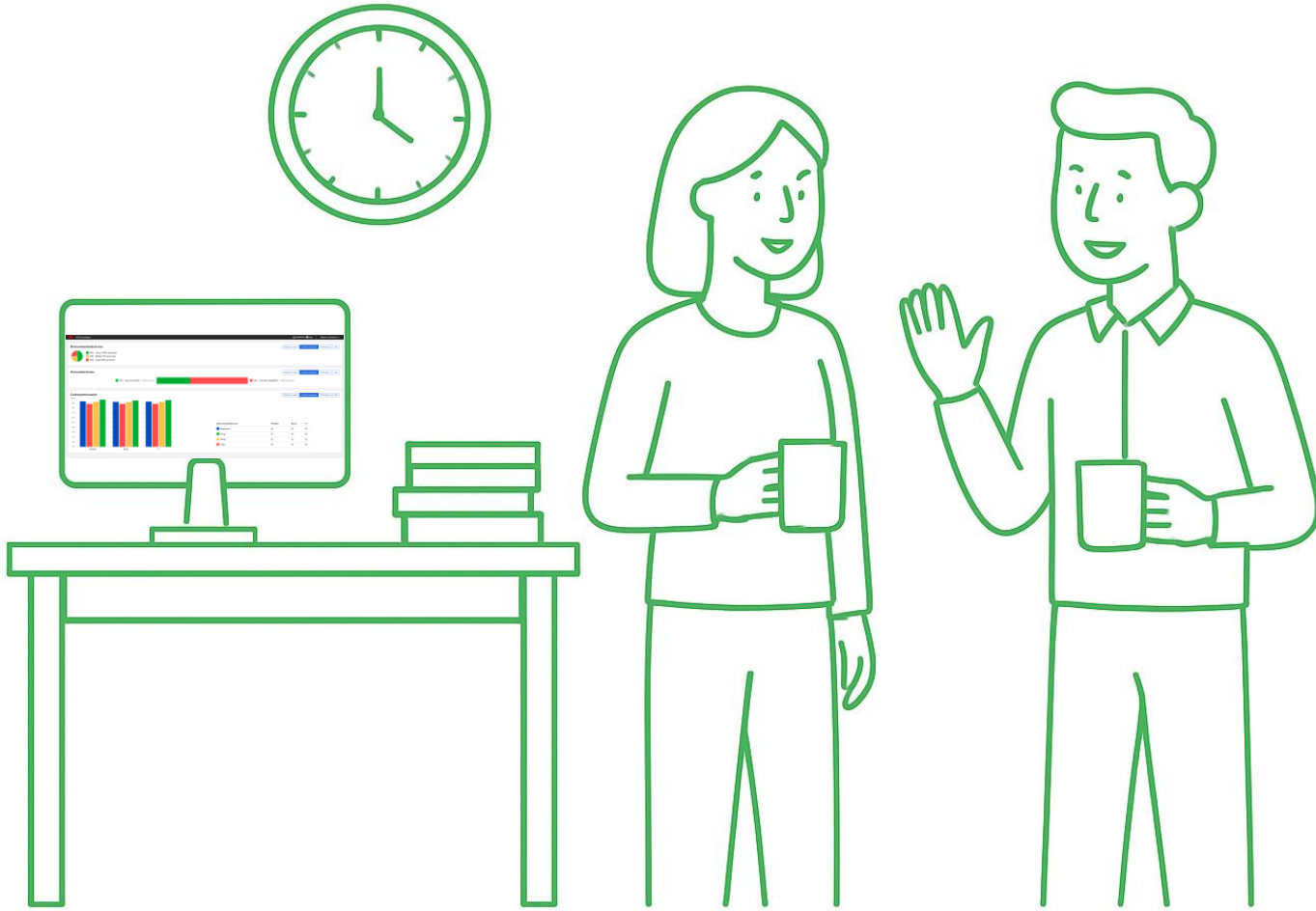
2. Adaptation process in UZ Brussels

- Driving the transition



- Impact of these actions
 - Better knowledge about technology – less frustrations
 - Increasing efficiency – saving time
 - Happy with new features

3. Outcome



- **Time saving**
 - 24K cases coded
 - 45% accepted without review
 - Automated coding and CAC
 - One retirement not replaced
- **Happy coders**
 - 86% happy with software
- **Qualitative coding**
 - F_1 of high confidence: 96%
 - F_1 of medium confidence: 93%
 - High exhaustivity of coding
 - Less non-specific coding

AI-driven medical coding requires a holistic approach involving technology, coder engagement, and leadership support.



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