

ICD-11 implementation in Kuwait

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Ministry of Health, Kuwait

Kuwait profile



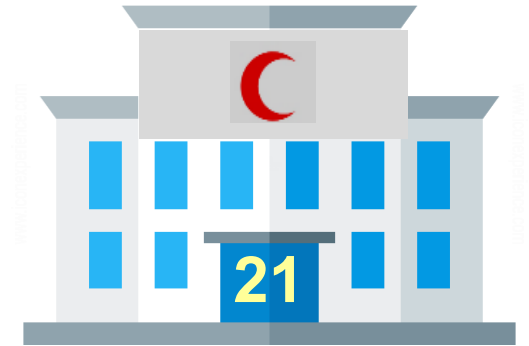
MOH

main funder,
provider &
only regulator of
healthcare



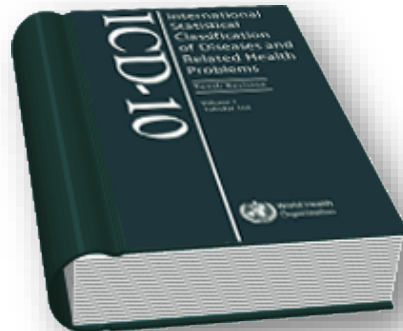
Funding

Annual budgets
(No DRG system)



Hospitals

21 public hospitals,
average 200,000
inpatients/year



ICD-10

Since 1996 - coding
discharge diagnoses,
basis of national
morbidity health
statistics



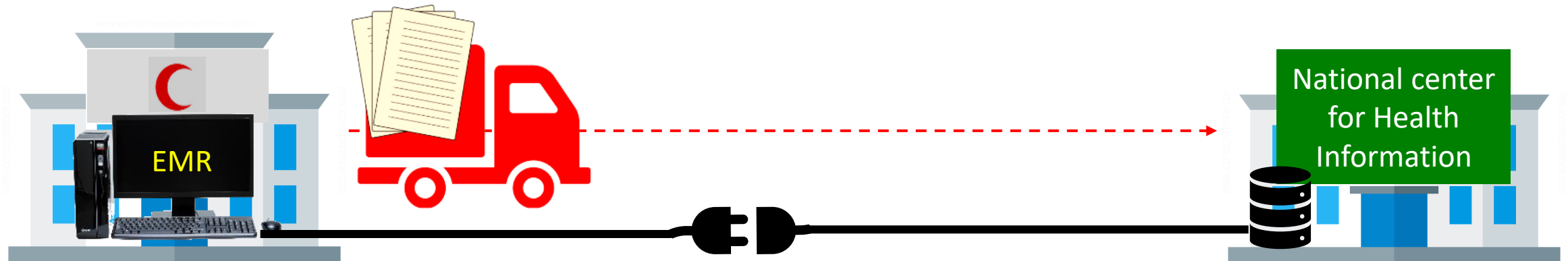
Why ICD-11?

Why ICD-11?

National automation project

Moving from paper-based system for national statistical reporting to an **electronic** one

Since 1980's



MDS
Data dictionary
API

In progress....

UPDATE

Why ICD-11?

National automation project

Moving from paper-based system for national statistical reporting to an **electronic** one



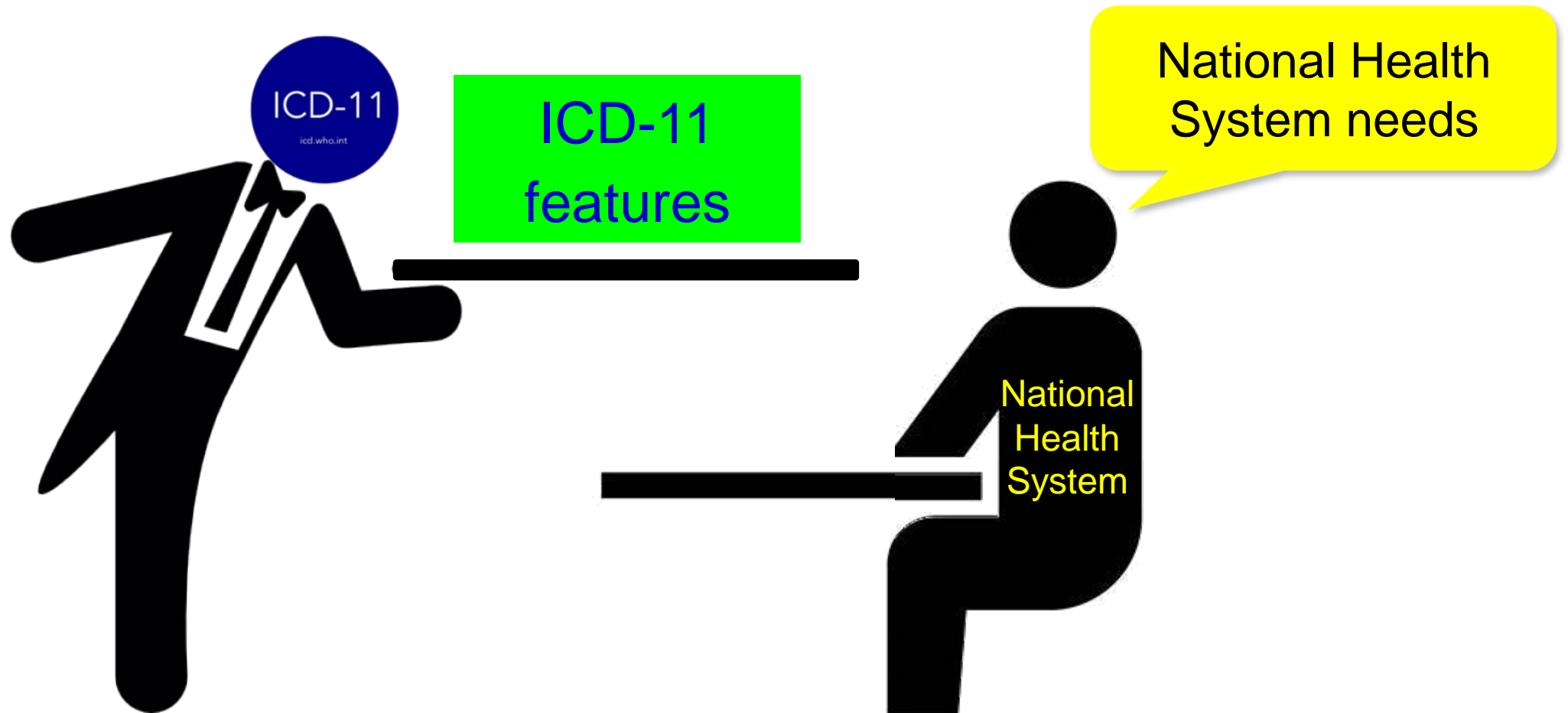
**Data dictionary for
National MDS**



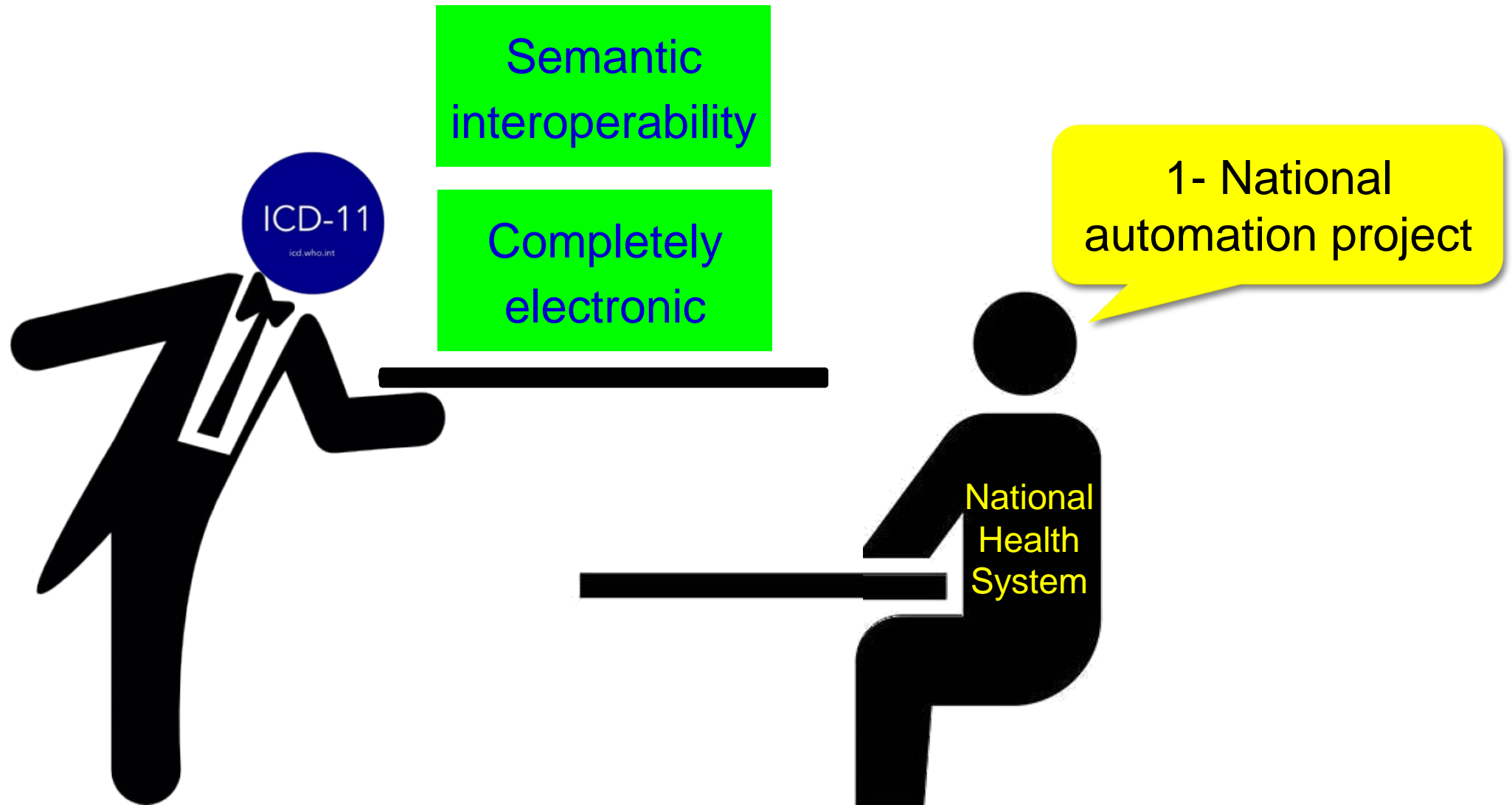
ICD-11

icd.who.int

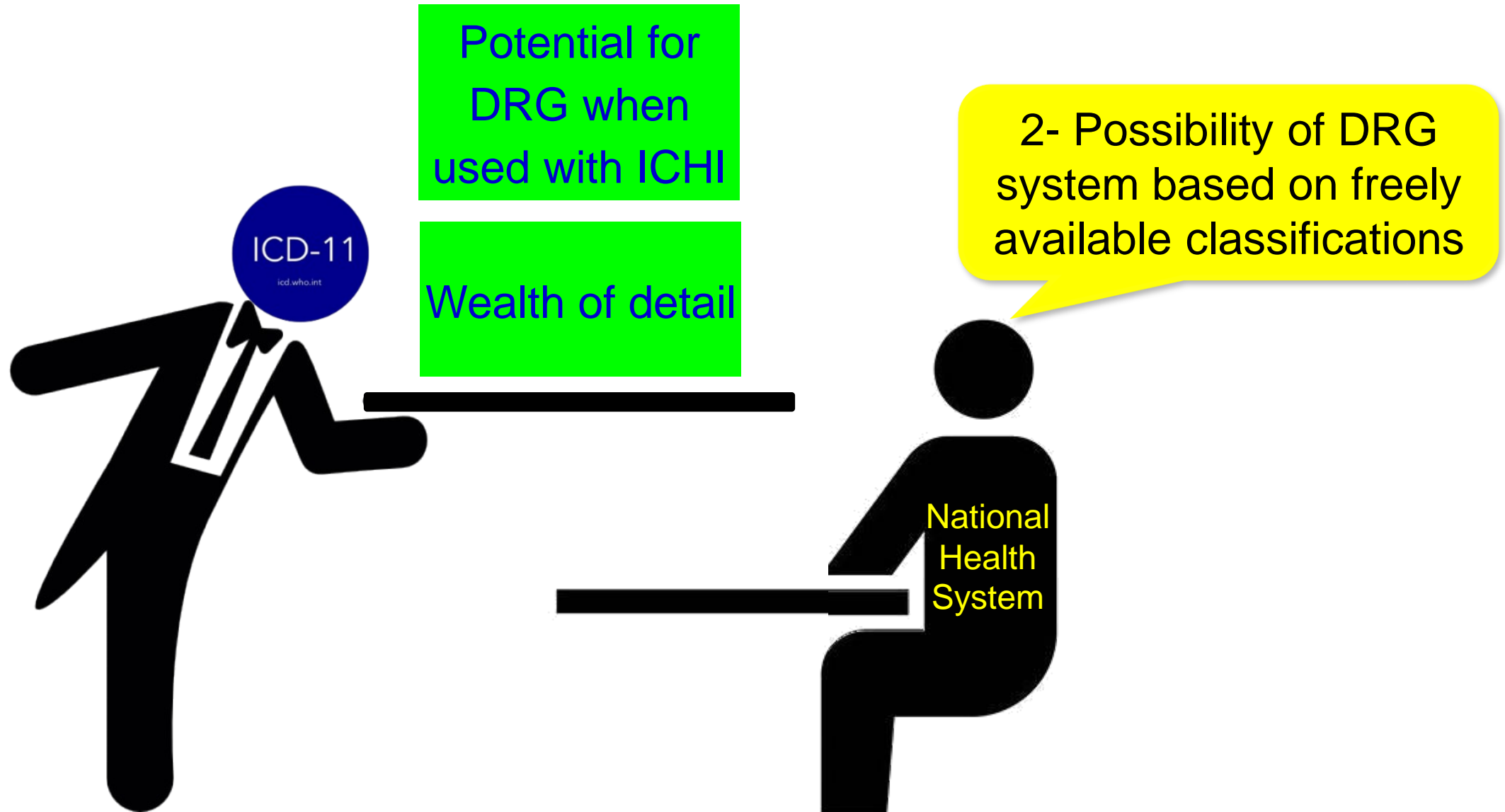
Why ICD-11?



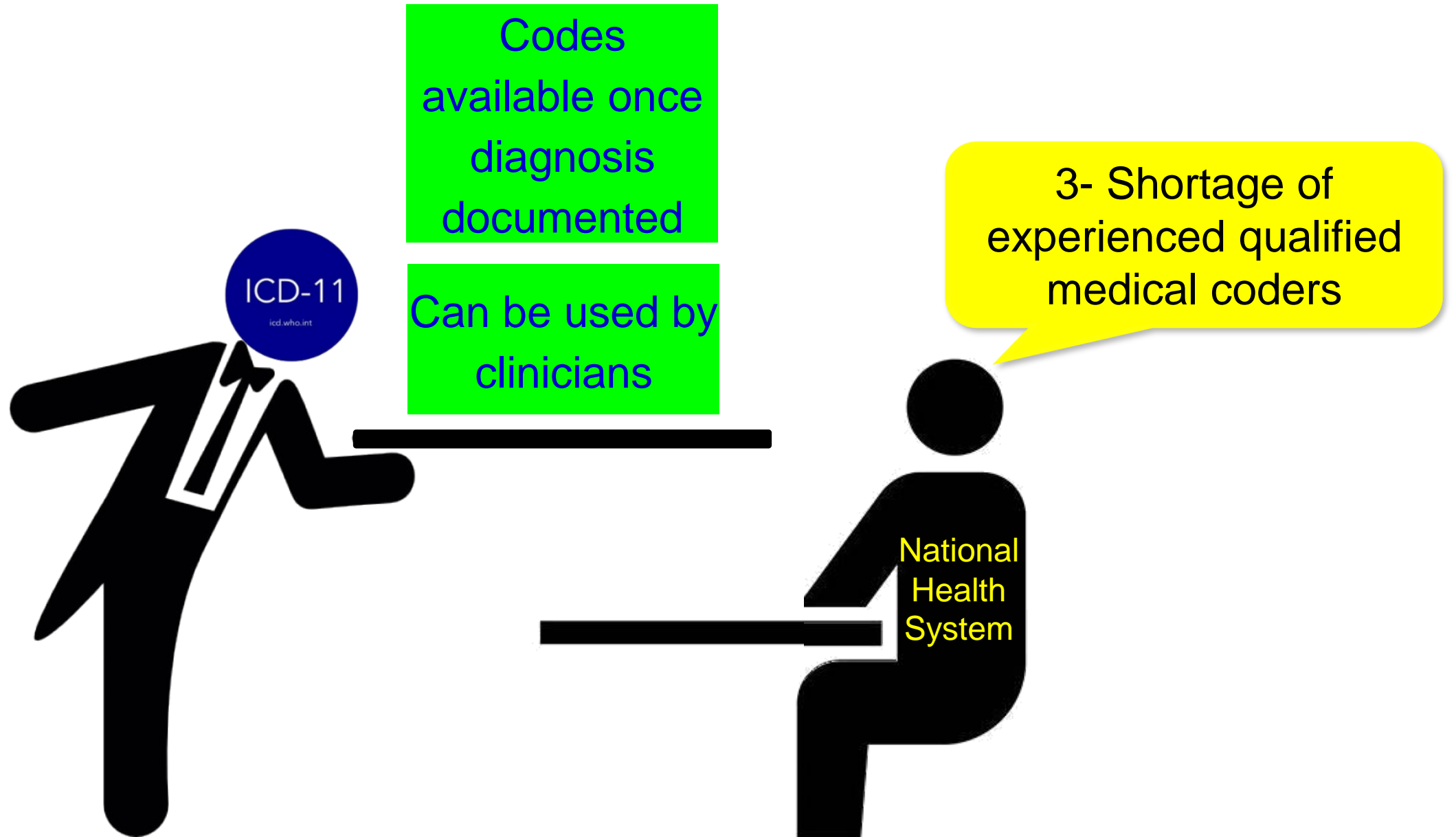
Why ICD-11?



Why ICD-11?



Why ICD-11?



What did we do?

Inpatient ward



Diagnosis
ICD-11



Outpatient clinic



Diagnosis
ICD-11



**Biggest
public
hospital**



*848 beds, 27,700 inpatients/year

On the HIS user interface

ICD-11

Principal Diagnosis **STEMI**

Other Diagnosis

Dis. Unit

.. c

Discharge Doctor

His Administrator

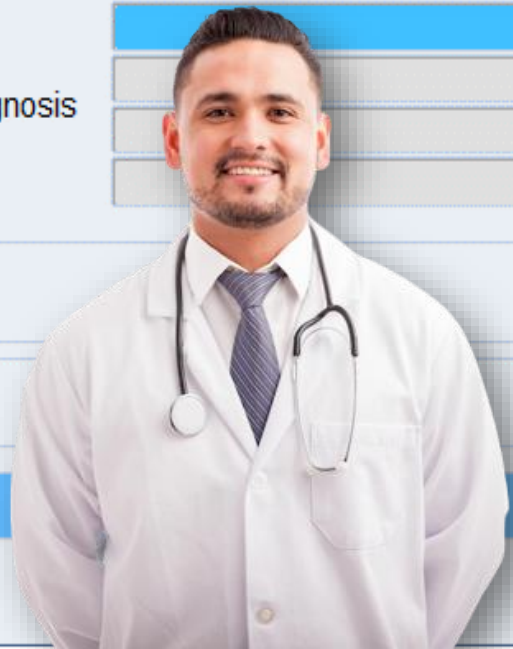
Print Discharge Report

Discharge Summary

Exit

STEMI

LEAD 69
11



On the HIS user interface

Apps Bookmarks iGoogle Unwrap It! Unwrap...

Searchbox:

BA41.0 Acute ST elevation myocardial infarction

Guessing the word being typed...

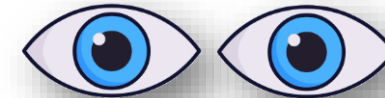
Word list

sort:

stemi

Destination Entities

- BA42.0** Subsequent myocardial infarction, **STEMI**
- BA41.0** Acute ST elevation myocardial infarction
STEMI - [ST elevation myocardial infarction]
- BA41.1** Acute non-ST elevation myocardial infarction
non **STEMI** - [non ST elevation myocardial infarction]




sort:

Filter



On the HIS user interface



Notes

Final Diagnosis


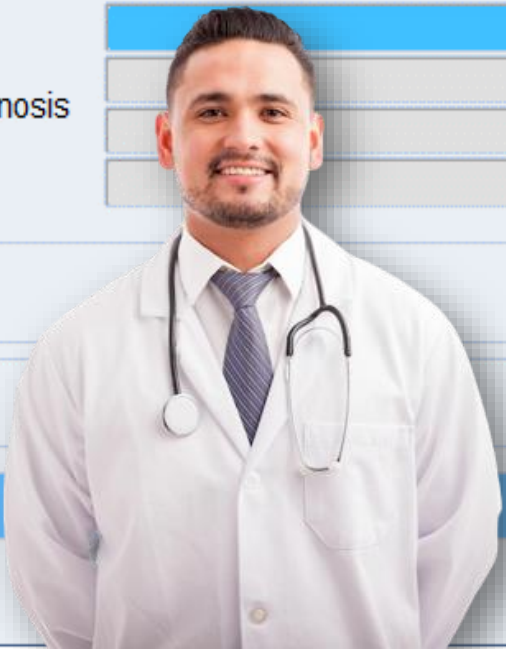
Principal Diagnosis **STEMI** X **Acute ST elevation myocardial infarction** X

Other Diagnosis

Dis. Unit .. c Discharge Doctor His Administrator

Print Discharge Report Discharge Summary

Exit



In the database

Free text
diagnosis by Dr.

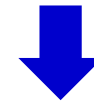


Automatically captured

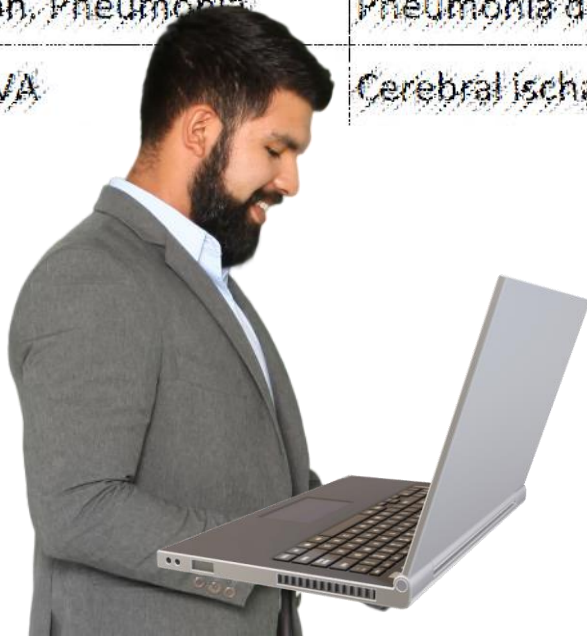
ICD-11
code



ICD-11
URI

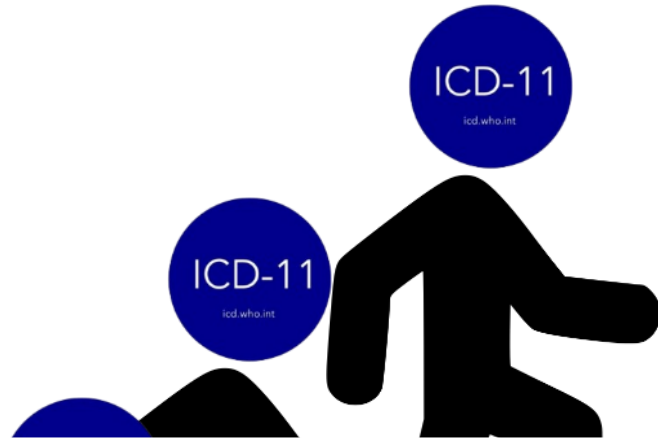


Principal diagnosis free text	Principal diagnosis ICD-11 entity title	Principal diagnosis ICD-11 code	Principal diagnosis ICD-11 URI
STEMI	Acute ST elevation myocardial infarction	BA41.0	http://id.who.int/icd/entity/39138
Strep pn, Pneumonia	Pneumonia due to Streptococcus pneum	CA40.07	http://id.who.int/icd/entity/14806
isch, CVA	Cerebral ischaemic stroke	8B11	http://id.who.int/icd/entity/63627



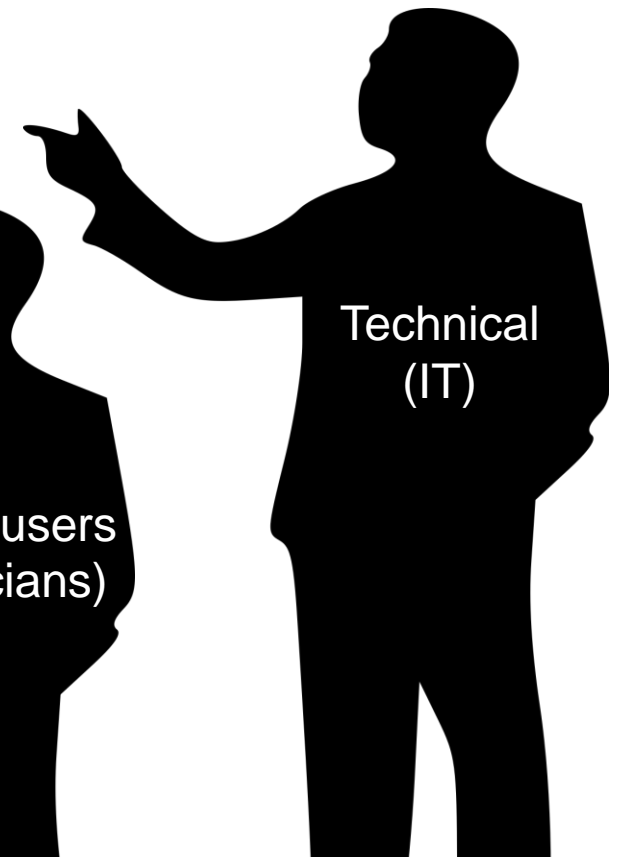
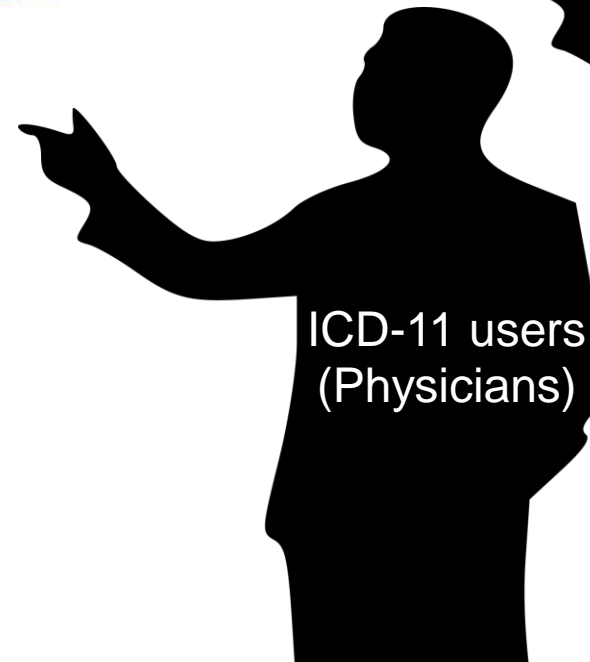
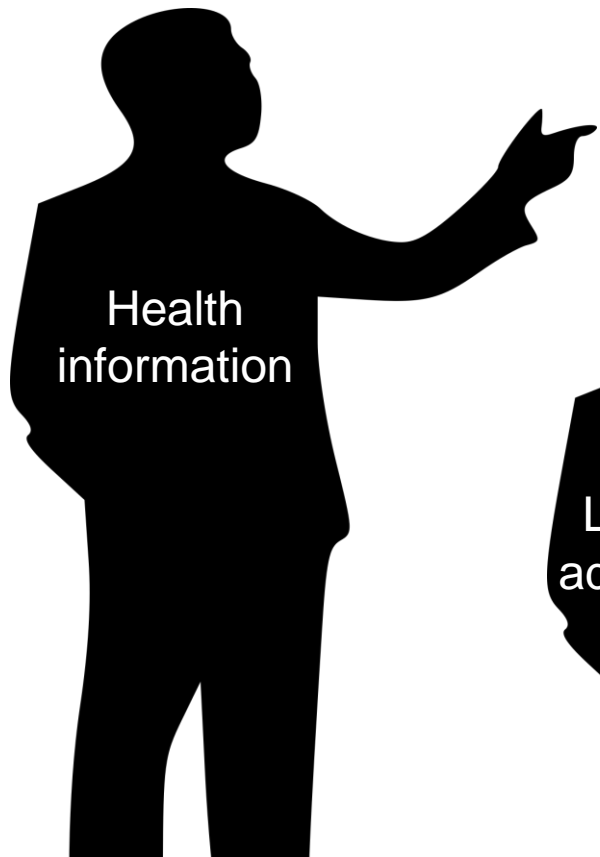
How did we do it?

How did we do it?



Stakeholder engagement

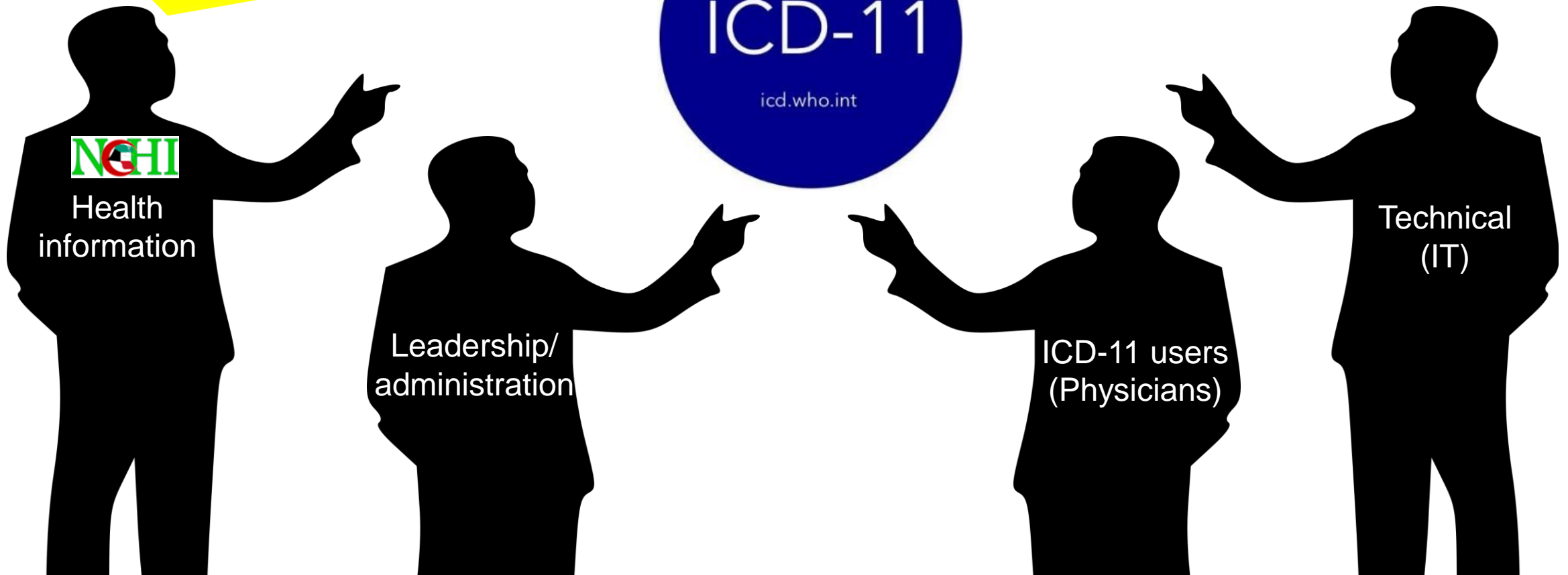
ICD-11 stakeholders



ICD-11 stakeholders

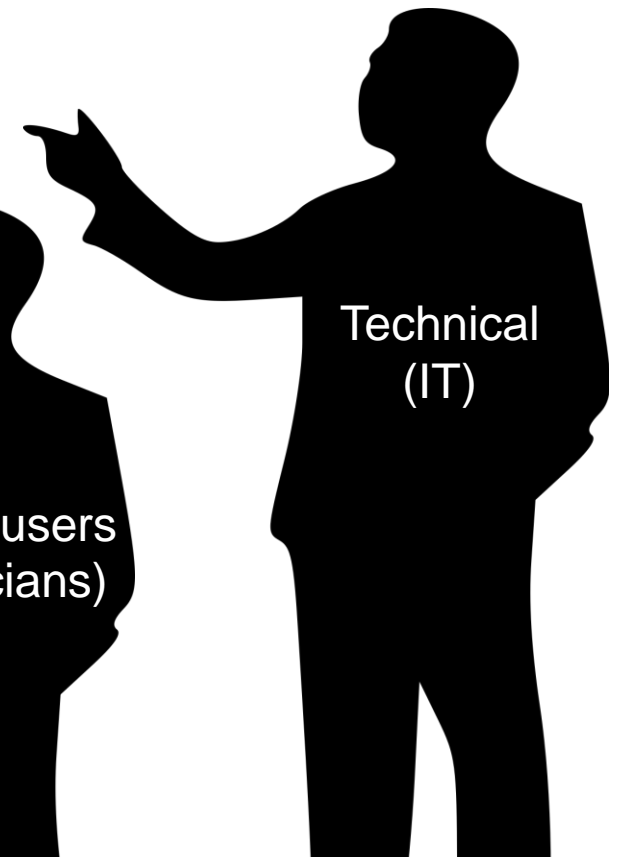
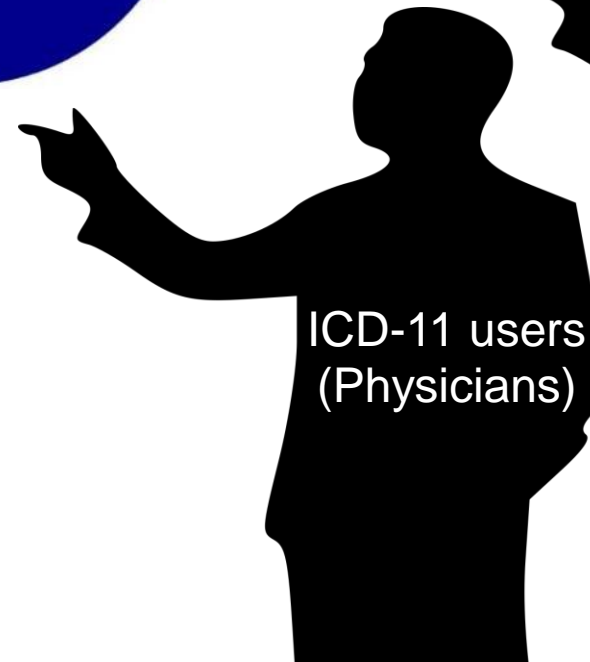
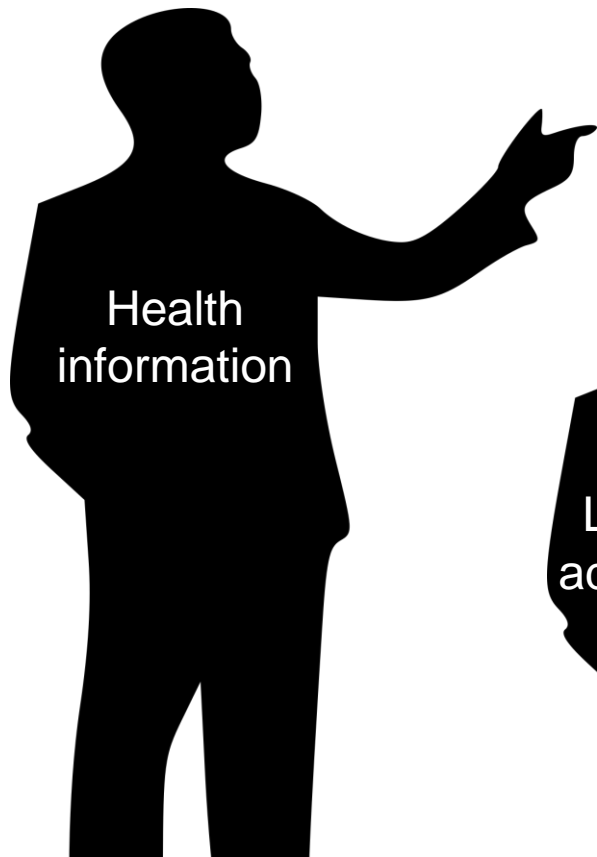
We:

- Set **national standards** for health classifications & coding
- Manage national **health data**
- Lead the transition to ICD-11

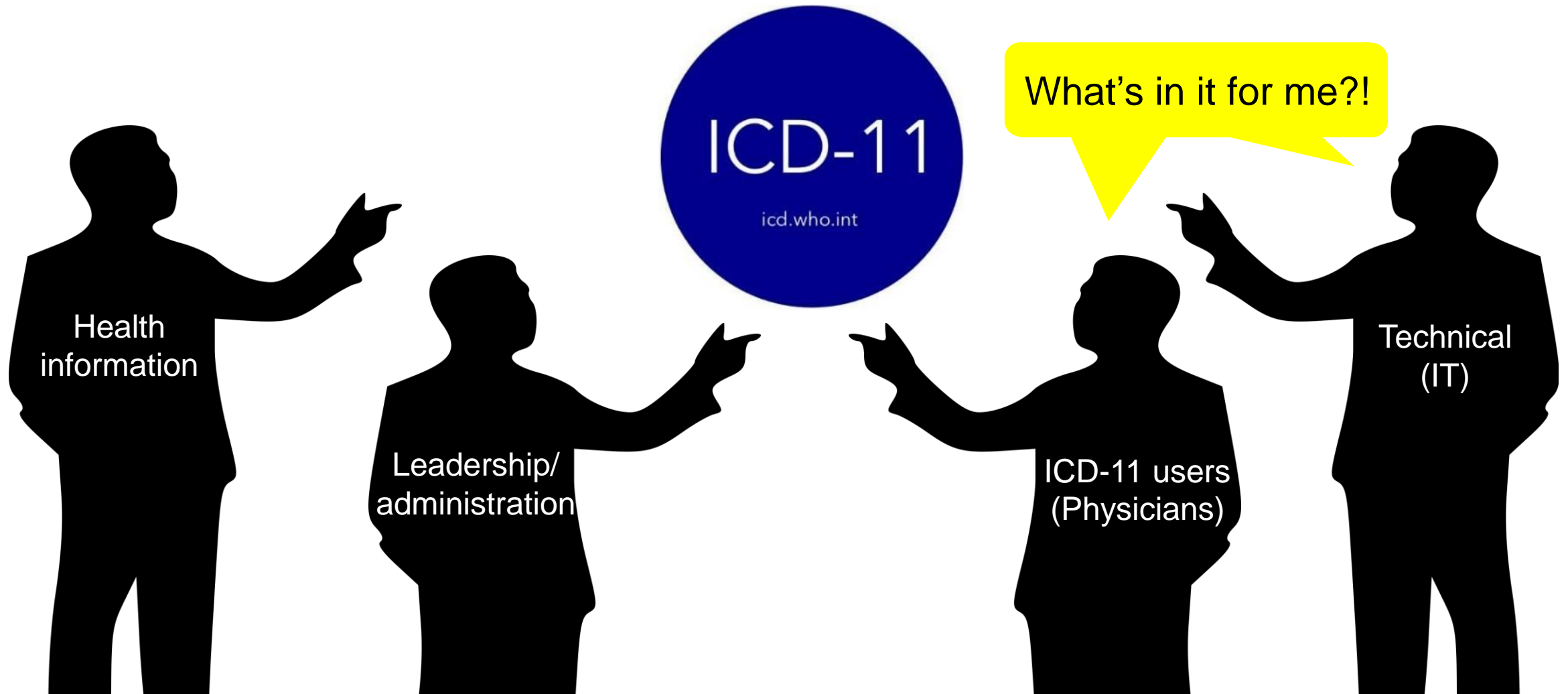


ICD-11 stakeholders

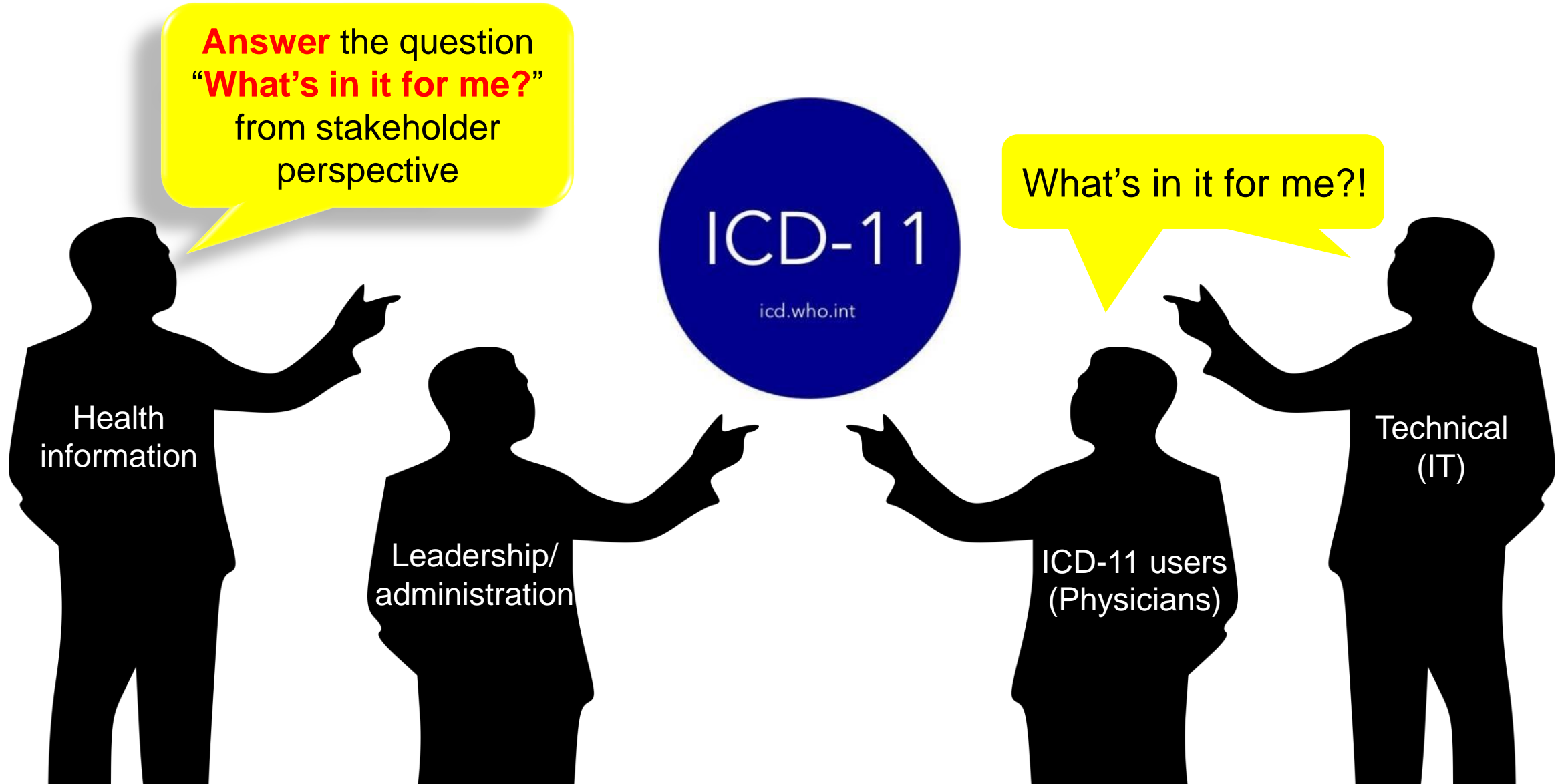
We guarantee formal **approvals, resources** & effective **communication** between different stakeholders



ICD-11 stakeholders



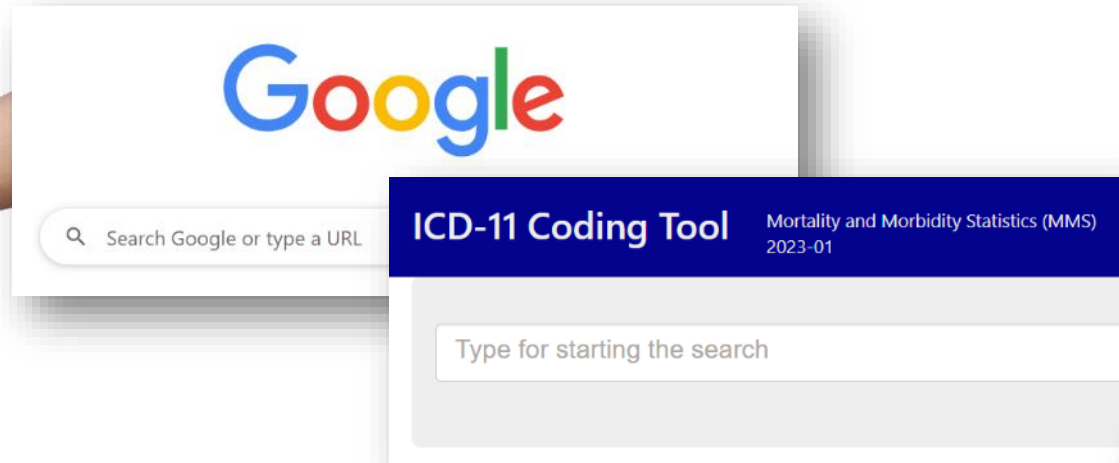
ICD-11 stakeholders



Engaging stakeholders & effective communication

Tailored **stakeholder-specific** messages for persuasion

User-friendly
Google-like search

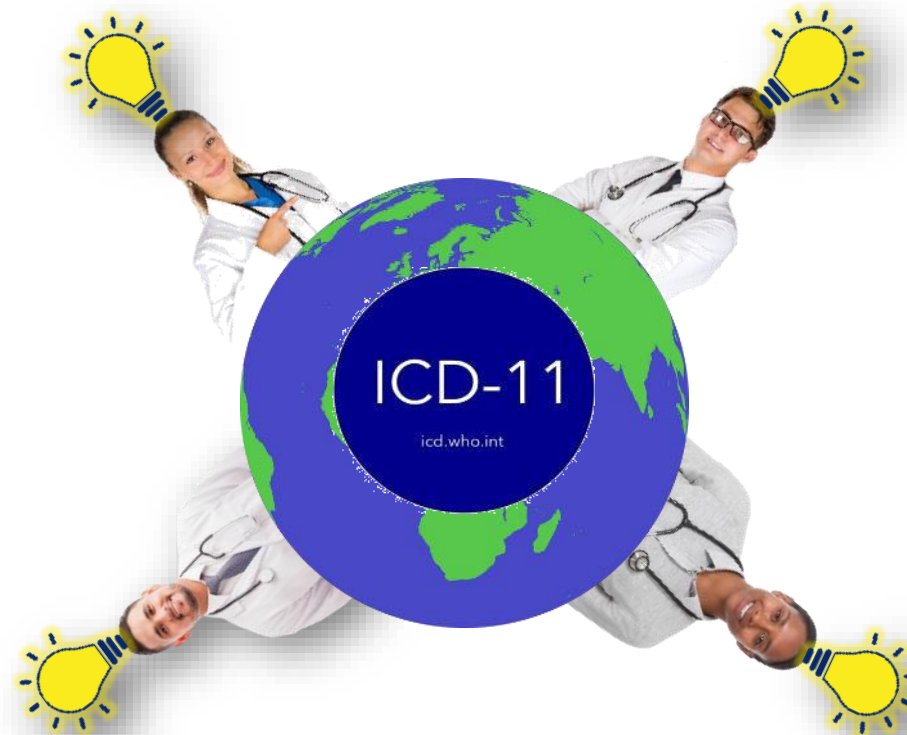


Engaging stakeholders & effective communication

Tailored **stakeholder-specific** messages for persuasion

User-friendly
Google-like search

Made with contribution
of **expert clinicians**



Engaging stakeholders & effective communication

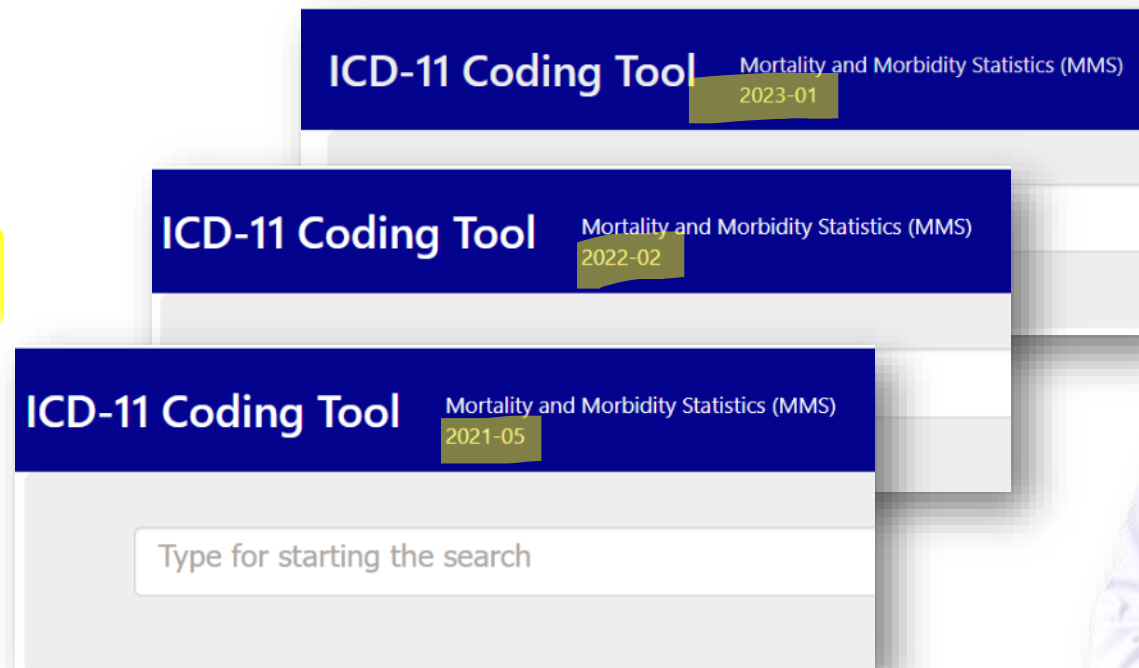
Tailored **stakeholder-specific** messages for persuasion

User-friendly
Google-like search

Made with contribution
of **expert clinicians**

Scientifically **up-to-date**

Update



Engaging stakeholders & effective communication

Tailored **stakeholder-specific** messages for persuasion

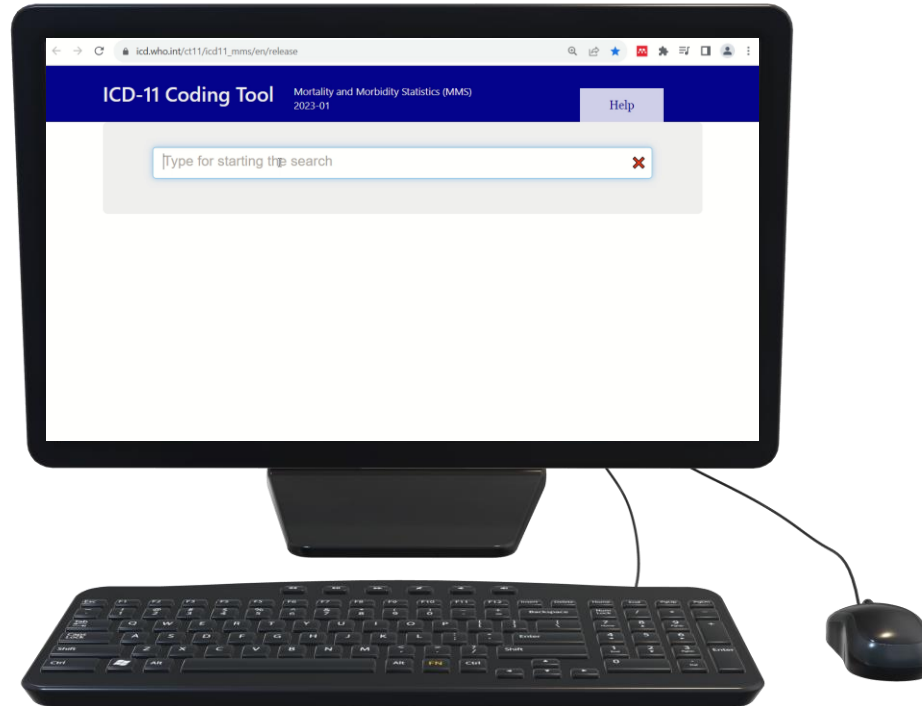
Fully **electronic**

Installed on **any HIS**

Achieves semantic **interoperability**

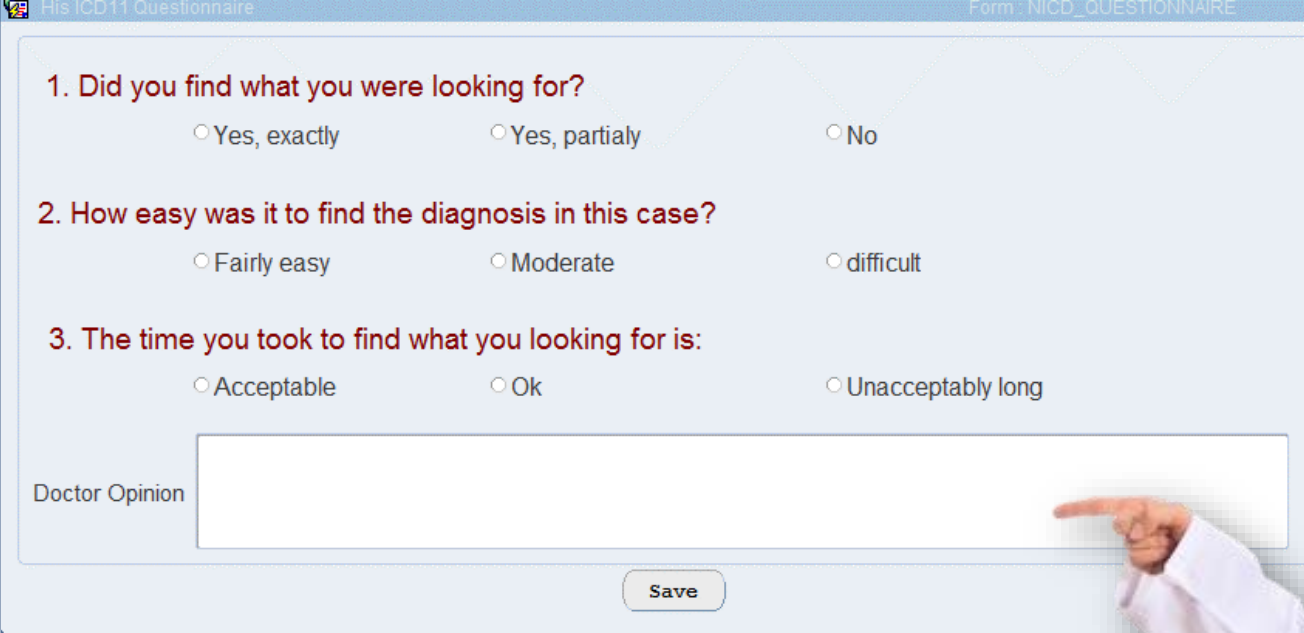
Both **online** or **offline**

Free



Engaging stakeholders & effective communication

Start with a pilot and capture the **voice of the users** (physicians) as they experiment with ICD-11



His ICD11 Questionnaire Form: NICD_QUESTIONNAIRE

1. Did you find what you were looking for?

Yes, exactly Yes, partialy No

2. How easy was it to find the diagnosis in this case?

Fairly easy Moderate difficult

3. The time you took to find what you looking for is:

Acceptable Ok Unacceptably long

Doctor Opinion

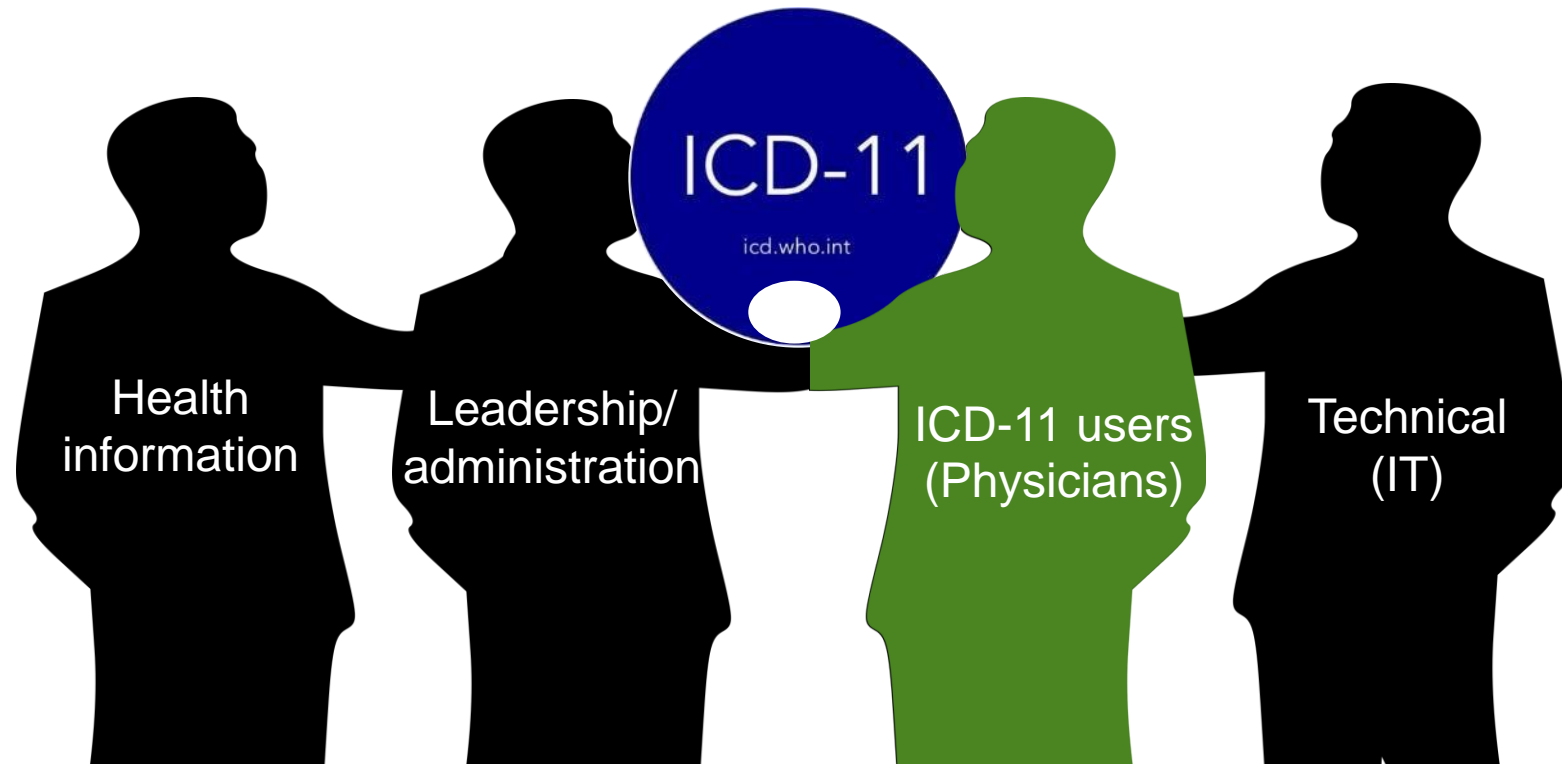
Save

Brief user-experience survey



Team approach

Multidisciplinary team involving representatives of all stakeholders
Users (physicians) **accept change** when involved in making decisions



ICD-11 pilot

ICD-11 pilot

To test the **real-life** implementation
of using the **ICD-11** coding tool integrated into HIS
for documenting **inpatient** discharge diagnoses
by **physicians**
at a public general hospital

ICD-11 pilot

Preparation

Implementation

Learning for the future

ICD-11 pilot

Preparation

Implementation

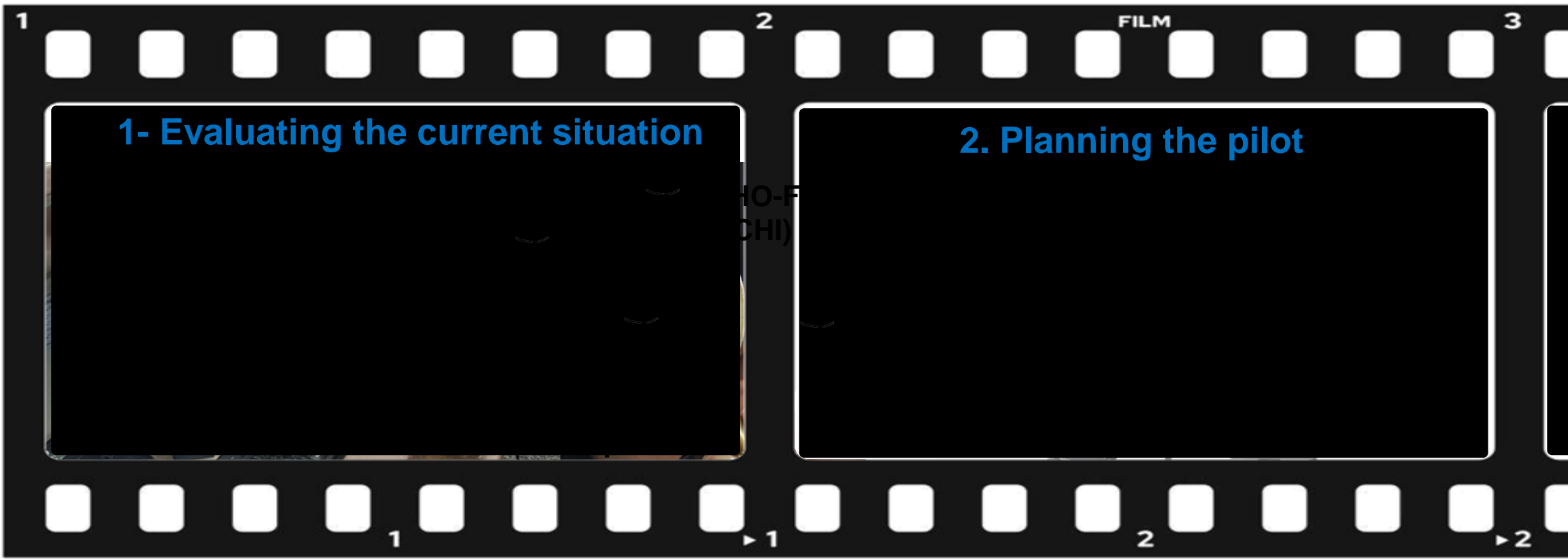
Learning for the future

ICD-11 pilot

Preparation

Implementation

Learning for the future



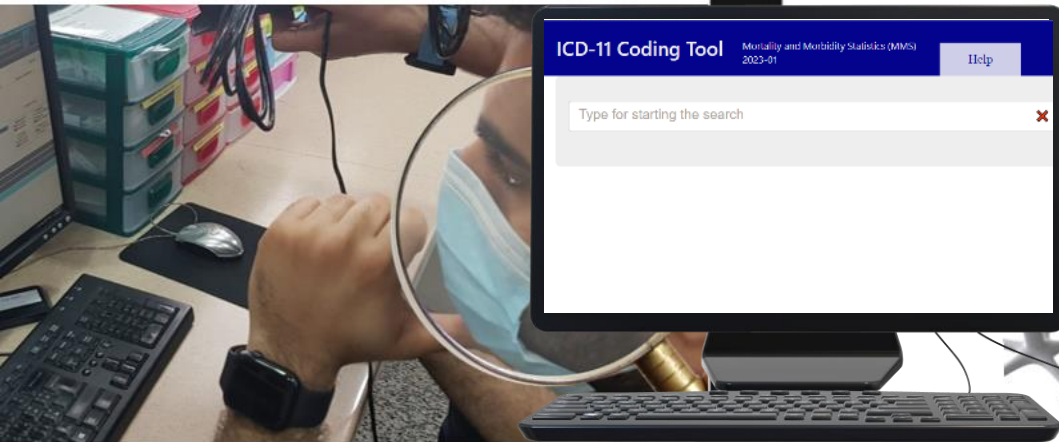
ICD-11 pilot

Preparation

Implementation

Learning for the future

1. Assessing the current situation



2. Planning the pilot



WHO-F
(NCHI)

Health IT

3. Preparing the H...



1

▶ 1

2

3

▶ 2

4

3

ICD-11 pilot

Preparation

Implementation

Learning for the future

IT department



Inpatient ward



Director's office

Just a new way for documenting diagnoses

National Center for Health Information
I need help

Hospital IT team

ICD-11 support

IT support

Discuss and resolve problems

Admin.

ICD-11 code	Description	ICD-10 code	Description
001	Admission to hospital	99.00	Admission to hospital
002	Discharge from hospital	99.01	Discharge from hospital
003	Transfer to another hospital	99.02	Transfer to another hospital
004	Transfer to a nursing home	99.03	Transfer to a nursing home
005	Transfer to a long-term care facility	99.04	Transfer to a long-term care facility
006	Transfer to a rehabilitation center	99.05	Transfer to a rehabilitation center
007	Transfer to a hospice	99.06	Transfer to a hospice
008	Transfer to a skilled nursing facility	99.07	Transfer to a skilled nursing facility
009	Transfer to a subacute care unit	99.08	Transfer to a subacute care unit
010	Transfer to a psychiatric hospital	99.09	Transfer to a psychiatric hospital



ICD-11 pilot

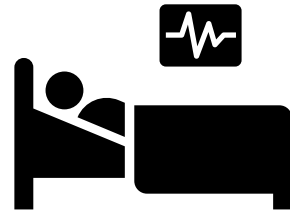
Preparation

Implementation

What did we learn?



241



3900

April						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

May						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

July						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

4 months

This pilot reflects the practical aspects of using ICD-11 in a dynamic environment, showing how it can become part of the routine documentation of discharge diagnoses on the HIS

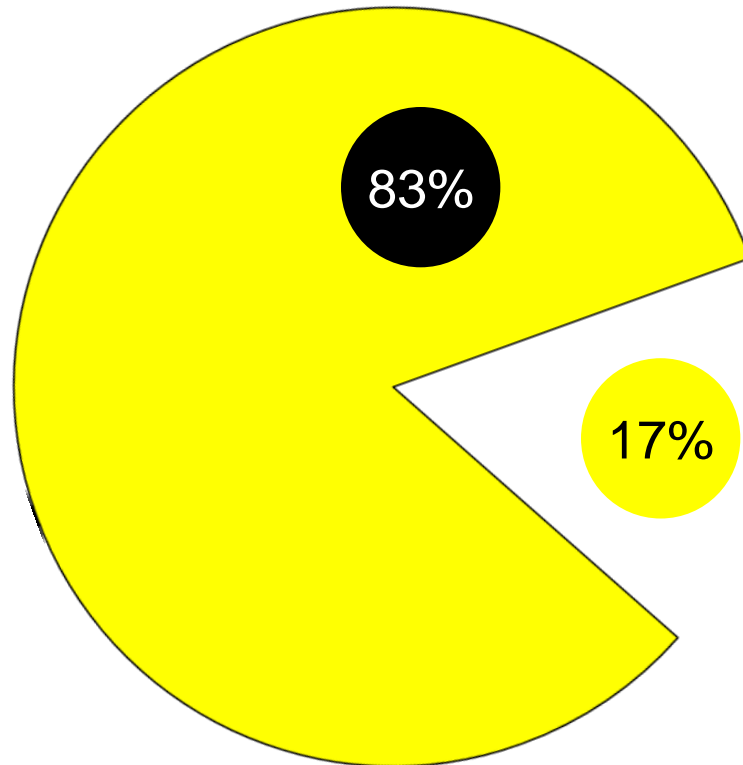
ICD-11 pilot

Preparation

Implementation

What did we learn?

Physicians like ICD-11!



We're satisfied
with ICD-11



ICD-11 pilot

Preparation

Implementation

What did we learn?

Physicians like ICD-11!



We're satisfied
with ICD-11



ICD-11 pilot

Preparation

Implementation

What did we learn?

The WHO is listening!



Our voice
is heard



ICD-11 pilot

Preparation

Implementation

What did we learn?

The WHO is listening!



I can't find this term in ICD-11



Synonyms
Abbreviations
New diagnoses

Proposal List - ICD

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Procedure not carried out because of contraindication

	Content Enhancement Proposal Adds: Synonym.	#2D6X	2021-May-20 - 09:13	me	Mixed Implementation
---	--	-------	---------------------	----	----------------------

Procedure not carried out because of patient's decision for reasons of belief or group pressure

	Content Enhancement Proposal Adds: Synonym.	#2D71	2021-May-20 - 09:13	me	Implemented
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Cholelithiasis with chronic cholecystitis

	Content Enhancement Proposal Adds: Synonym.	#2D6Y	2021-May-20 - 09:01	me	Implemented
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Cerebral ischaemic stroke

	Content Enhancement Proposal Adds: Synonym.	#2D6Z	2021-May-20 - 08:55	me	Mixed Implementation
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Intracerebral haemorrhage

	Content Enhancement Proposal Adds: Synonym.	#2D70	2021-May-20 - 08:54	me	Implemented
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Dilated cardiomyopathy due to spinal muscular atrophy

	Content Enhancement Proposal Adds: Synonym.	#2G2P	2021-Dec-08 - 06:05	me	Implemented
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Infantile spinal muscular atrophy, Type I

	Content Enhancement Proposal Adds: Synonym.	#2G2K	2021-Dec-08 - 06:02	me	Implemented
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	Content Enhancement Proposal Adds: Synonym.	#2G2Q	2021-Dec-06 - 10:50	me	Implemented
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Adult onset spinal muscular atrophy, Type IV

ICD-11 pilot

Preparation

Implementation

What did we learn?

All ICD-11 diagnosis details can be saved into the database automatically

ICD-11 **codes** including postcoordinated clusters, **URIs**, and entity **titles** as well specifically selected **index terms** by physicians are saved in full into the database



Database

	ICD-11 code	ICD-11 title	ICD-11 URI
Case 1 (Dr. A)	1B7Y	Other specified pyogenic bacterial infection of skin and subcutaneous tissue - Infection of finger	http://id.who.int/icd/entity/751603744
Case 2 (Dr. B)	1B7Y	Other specified pyogenic bacterial infection of skin and subcutaneous tissue - Infection of toe	http://id.who.int/icd/entity/2105325745

*Outpatient clinic example after full implementation

Database

	ICD-11 code	ICD-11 title	ICD-11 URI
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Case 2 (Dr. B)	1B7Y	Other specified pyogenic bacterial infection of skin and subcutaneous tissue - Infection of toe	http://id.who.int/icd/entity/2105325745



1B7Y Other specified pyogenic bacterial infection of skin and subcutaneous tissue

*Outpatient clinic example after full implementation

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Case 2 (Dr. B)	1B7Y	Other specified pyogenic bacterial infection of skin and subcutaneous tissue - Infection of toe	http://id.who.int/icd/entity/2105325745



Different index term selected by doctor in each case

ICD-11 Coding Tool Mortality and Morbidity Statistics (MMS) 2023-01

finger infection

Selected: 1B7Y

Word list: infection

Destination Entities:

- 1B7Y Other specified pyogenic bacterial **infection** of skin and subcutaneous tissue **Infection of finger** *
- FA10.0&XA5... Bacterial **infection** of joint, **fingers**
- FA10.1&XA5... Viral **infection** of joint, **fingers**
- FA10.2&XA5... Fungal **infection** of joint, **fingers**

ICD-11 Coding Tool Mortality and Morbidity Statistics (MMS) 2023-01

toe infection

Selected: 1B7Y

Word list: infection

Destination Entities:

- 1B7Y Other specified pyogenic bacterial **infection** of skin and subcutaneous tissue **Infection of toe** *
- EE13.11 Infected ingrowing **toenail**
- FA10.0&XA0... Bacterial **infection** of joint, **toes**
- FA10.1&XA0... Viral **infection** of joint, **toes**

HIS

Database

	ICD-11 code	ICD-11 title	ICD-11 URI
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Case 2 (Dr. B)	1B7Y	Other specified pyogenic bacterial infection of skin and subcutaneous tissue - Infection of toe	http://id.who.int/icd/entity/2105325745



Unique identifier URI means original diagnosis documented is not lost

ICD-11 Coding Tool

Mortality and Morbidity Statistics (MMS) 2023-01

finger infection

Selected: 1B7Y

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HIS

ICD-11 Coding Tool

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Something for everyone!

Coders & HIM



Doctors



Informatics & IT





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> [Int J Environ Res Public Health](#). 2022 Mar 5;19(5):3057. doi: 10.3390/ijerph19053057.

ICD-11 Morbidity Pilot in Kuwait: Methodology and Lessons Learned for Future Implementation

Islam Ibrahim ¹, Mohammad Alrashidi ², Mustafa Al-Salamin ¹, Nenad Kostanjsek ³, Robert Jakob ³, Suhair Azam ¹, Naela Al-Mazeedi ², Fatima Al-Asoomi ¹

Affiliations + expand

PMID: 35270745 PMCID: [PMC8910646](#) DOI: [10.3390/ijerph19053057](#)

Free PMC article

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SCAN ME



ICD-11 training

In-person training

Videos

WhatsApp

Virtual simulation

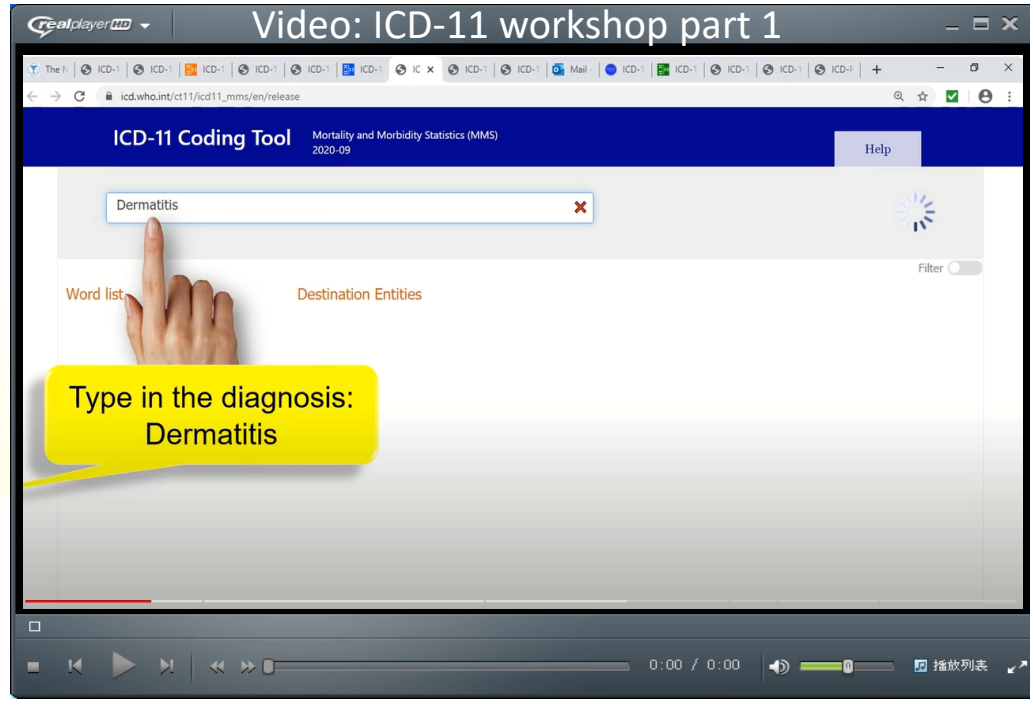
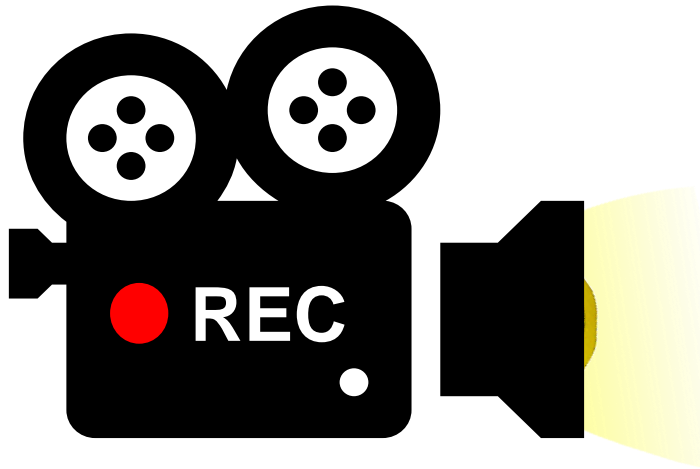
YouTube



Continuing medical education credit points



Including practical computer lab training



- Real ICD-11 screenshots
- Real HIS user interface
- Audience-tailored



Reality
Familiarity
Proximity



Persuasion
Acceptance of change

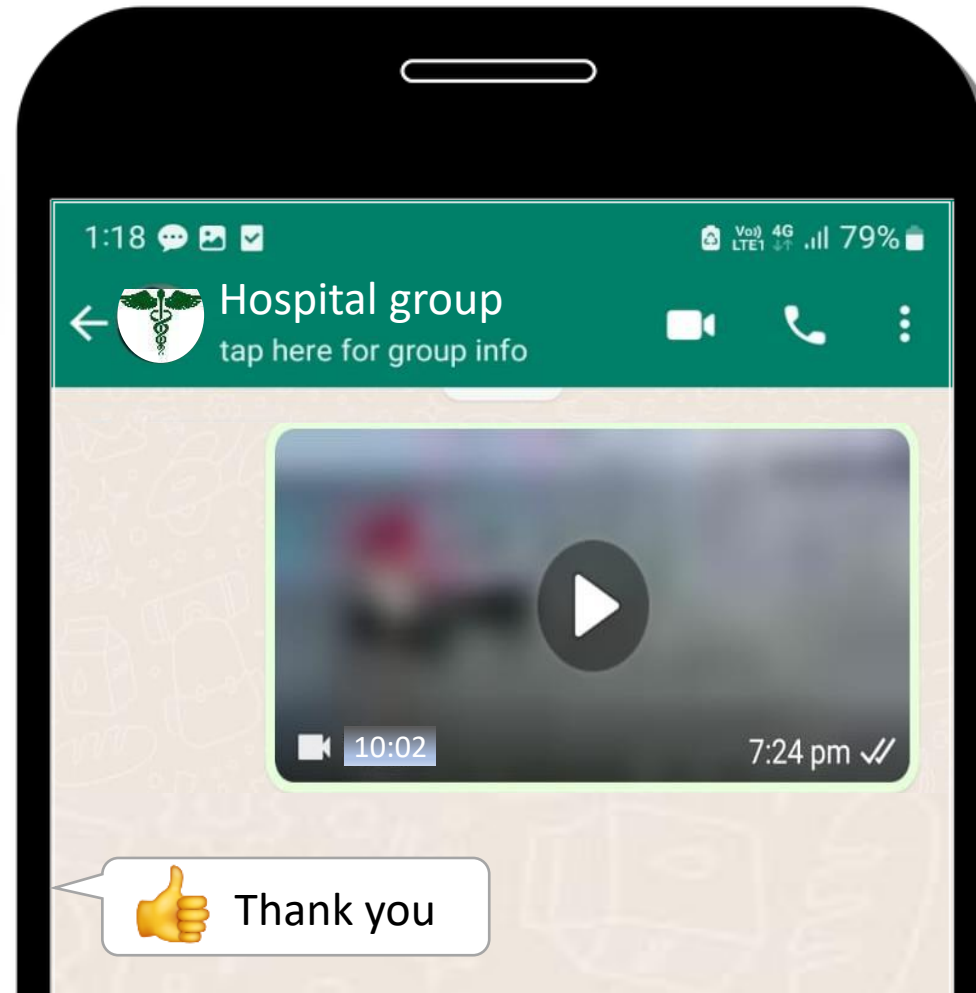
In-person training

Videos

WhatsApp

Virtual simulation

YouTube



In-person training

Videos

WhatsApp

Virtual simulation

YouTube

Virtual (exercise)
records

Access as usual
like real record



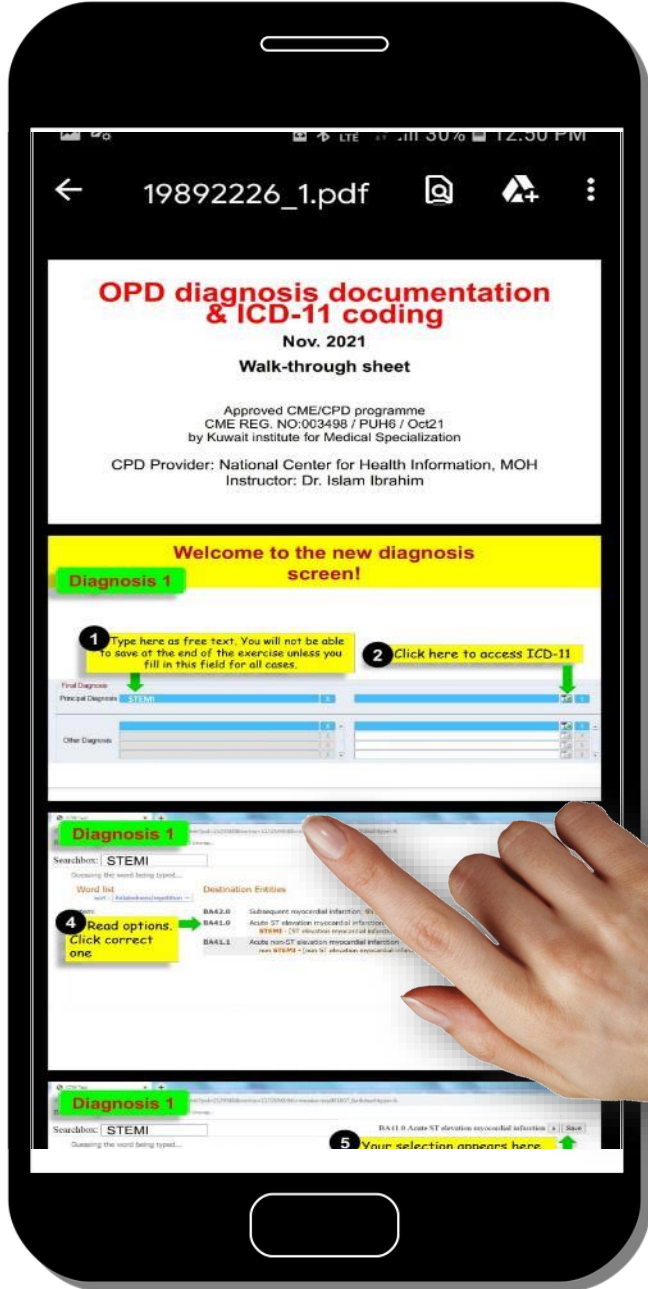
In-person training

Videos

WhatsApp

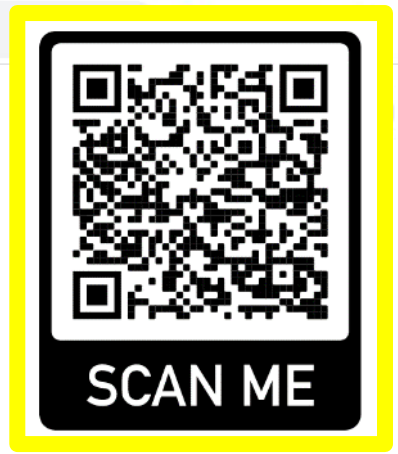
Virtual simulation

YouTube

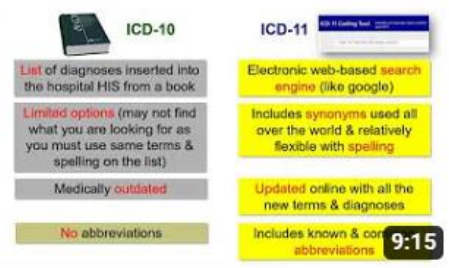




National Center for Health Information, Kuwait
 @nchi-who-fic-cc-kuwait 384 subscribers 11 videos
 Educational videos by the National Center for Health Information, MOH, Ku... >



ICD-11 workshop (part 1): Introduction to ICD-11 coding
 8.1K views • 2 years ago



ICD-11 workshop for clinicians
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ICD-11 workshop (Part 2): Introduction to multiple parenting,...
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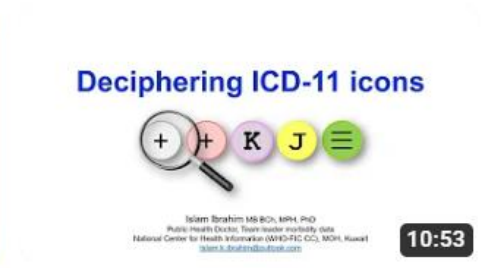
ICD-11 Pilot in Kuwait: The doctors' perspective (Farwaniya hospital,...
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Demystifying ICD-11 URIs
 681 views • 10 months ago



ICD-11 proposals
 500 views • 2 years ago



ICD-11 icons
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Pilot field testing of ICD-11 morbidity coding in Kuwait

Full hospital implementation



- Hospital serves 26% of the country population
- 848 beds, 27,700 inpatients/year

- Final diagnoses for inpatients – all departments
- Diagnoses for outpatient clinics – all departments

- 13 departments
- >1200 doctors

Challenges and future considerations

Challenges

Data considerations

Procedure coding and DRG systems

Doctors as ICD-11 users



All hospitals move to ICD-11

Challenges

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Morbidity	Name of the entity	Included entities	Excluded entities	Excluded morbidity	Expanded codes
1					
2					
3	Mb1 Cholera	1A00 - Cholera			1A00
4	Mb2 Intestinal infections due to Shigella	1A02 - Intestinal infections due to Shigella			1A02
5	Mb3 Intestinal infections due to Escherichia coli	1A03 - Intestinal infections due to Escherichia coli			1A03.0,1A03.1,1A0
6	Mb4 Intestinal infections due to Clostridioides difficile	1A04 - Intestinal infections due to Clostridioides difficile			1A04
7	Mb5 Typhoid and paratyphoid fever	1A07 - Typhoid fever 1A08 - Paratyphoid fever			1A08,1A07.0,1A07.
8	Mb6 Bacterial foodborne intoxications	1A10-1A1Z - Bacterial foodborne intoxications			1A10,1A11.0,1A11.
9	Mb7 Viral intestinal infections	1A20-1A2Z - Viral intestinal infections			1A20,1A21,1A22,1A
10	Mb8 Amoebiasis	1A36 - Amoebiasis			1A36.00,1A36.01,1.
11	Mb9 Other gastrointestinal infectious diseases	1A01 - Intestinal infection due to other Vibrio 1A05 - Intestinal infections due to Yersinia			1A01,1A05,1A06,1A
12	Mb10 Early syphilis	1A61 - Early syphilis			1A61.0,1A61.1,1A6
13	Mb11 Congenital syphilis	1A60 - Congenital syphilis			1A60.0,1A60.1,1A6
14	Mb12 Other syphilis	1A62 - Late syphilis 1A63 - Latent syphilis, unspecified as early or late 1A6Z - Syphilis, unspecified			1A63,1A6Z,1A62.0C
15	Mb13 Gonococcal infection	1A70-1A7Z - Gonococcal infection			1A70.00,1A70.0Y,1.
16	Mb14 Sexually transmissible infections due to chlamydia	1A80-1A8Z - Sexually transmissible infections due to chlamydia			1A80,1A81.0,1A81.
17	Mb15 Other predominantly sexually transmitted infections	1A90 - Chancroid 1A91 - Granuloma inguinale 1A92 - Trichomoniasis 1A93 - Sexually transmitted infections, unspecified			1A90,1A91,1A92,1A
18	Mb16 Tuberculosis of the respiratory system	1B10 - Tuberculosis of the respiratory system			1B10.0,1B10.1,1B1
19	Mb17 Tuberculosis of other organs and systems	1B11 - Tuberculosis of the nervous system 1B12 - Tuberculosis of other systems and organs			1B14,1B1Y,1B11.0,;
20	Mb18 Unspecified tuberculosis	1B1Z - Tuberculosis, unspecified			1B1Z

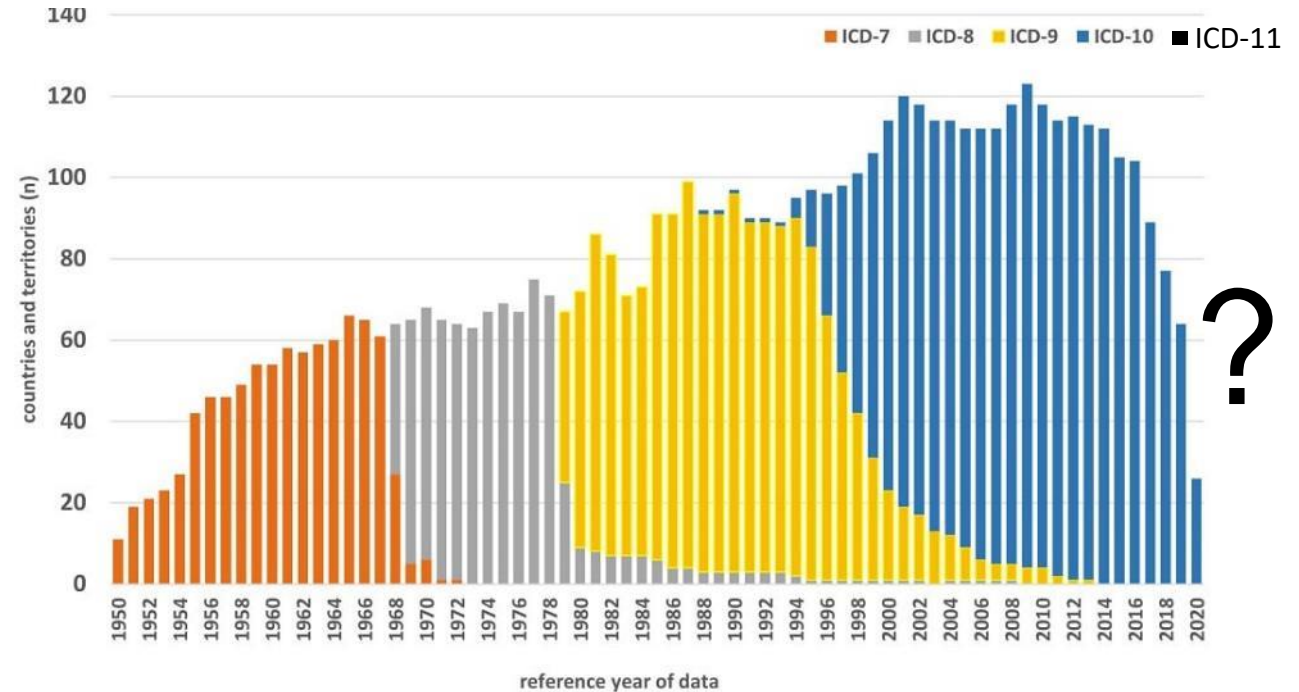
Challenges

Data considerations

Procedure coding and DRG systems

Doctors as ICD-11 users

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Challenges

Data
considerations

Procedure
coding and
DRG systems

Doctors as
ICD-11 users

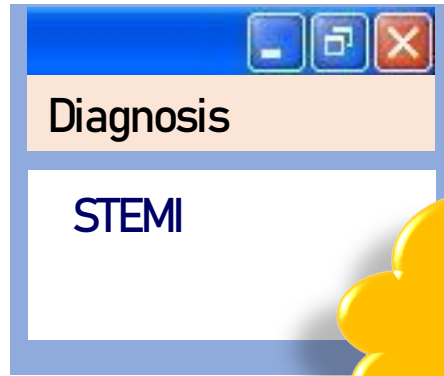


Challenges

Data considerations

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Diagnosis documentation



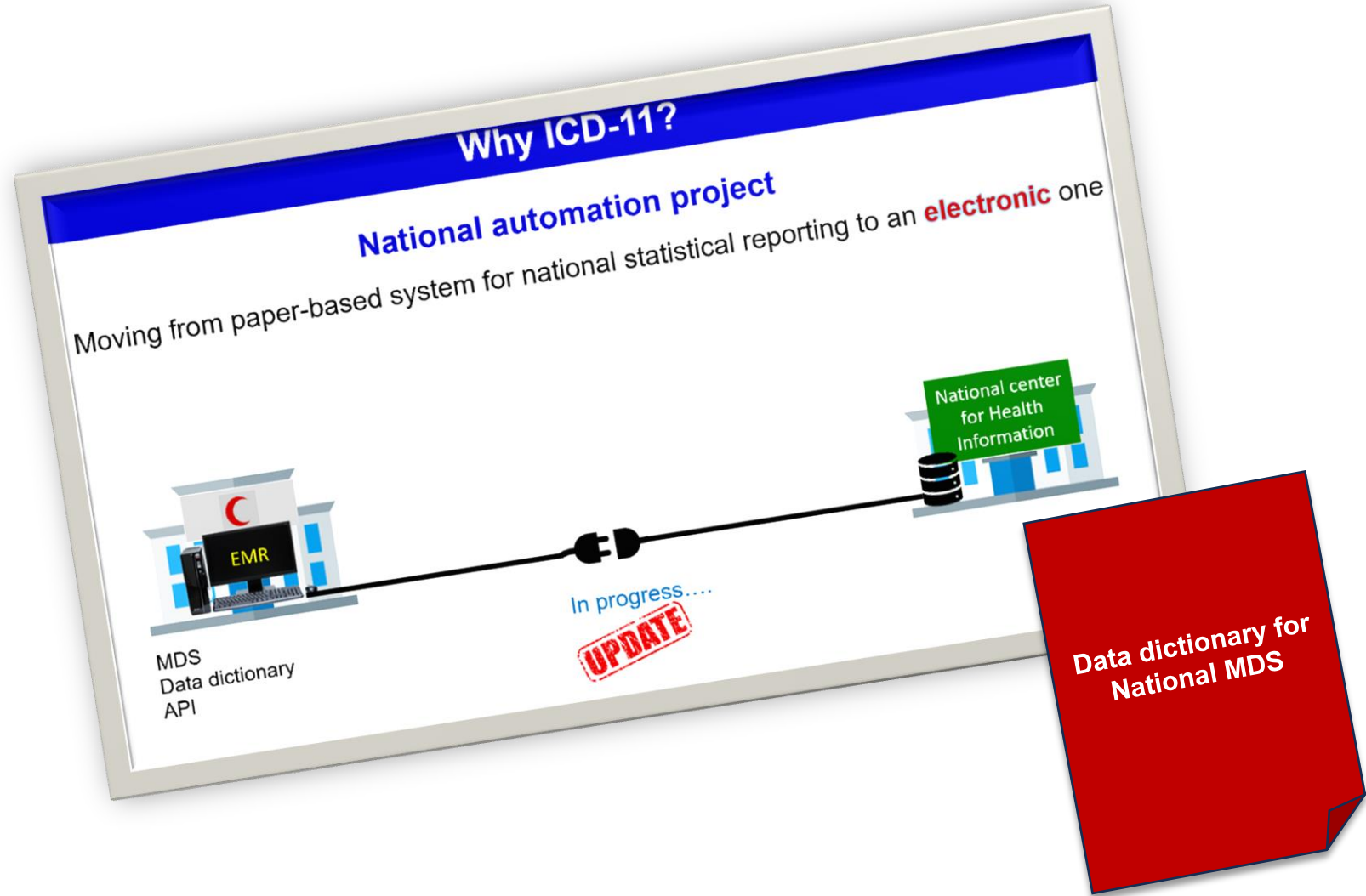
Guidelines for morbidity coding and reporting



What's next?

The original project!

Expand ICD-11 implementation



The future

The original project!



ICD-11
experience

Expand ICD-11
implementation

Other hospitals
PHC



ICD-11 Coding Tool

Mortality and Morbidity Statistics (MMS)
2023-01

Help

Type for starting the search



ICD-11 Coding Tool

Mortality and Morbidity Statistics (MMS)
2023-01

Help

Thank You|

