Health Information & Interoperability in the Netherlands

from EXCHANGE to AVAILABILITY

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Chair HL7 Netherlands

Welcome

50 yrs in Healthcare
40 yrs in Healthcare IT
  - SMS, Digital Equipment, HL7
20 yrs as CIO/ CMIO
  - Amsterdam UMC
  - Bernhoven Hospital
CEO SNOMED International
Boardmember CHIME & HIMSS Europe
VBHC at National Institute of Health
& Dutch Ministry of Health
Supervisory Board PALGA
Chair HL7 Netherlands

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Principal advisor
Outcome Measures (VBHC)
Health Information Exchange

VWS Ministry of Health
the Netherlands

World Map

Conflict of Interest

Jan-Eric SLOT MB MSc MBA CHCIO CDH-E

Has no real or apparent conflicts of interest to report, but loves standards....

Agenda

- Introduction Dutch Healthcare

- IZA & National Vision for Healthcare

- Introduction of the National Program WEGIZ, from Idea to Legislation

- Development of the DIMM, Dutch Interoperability Maturity Model

- Program on Outcomes and Shared Decision Making

- Q&A

Healthcare in the Netherlands...

Main principles
• Access to healthcare for all • Solidarity through medical insurance   High quality healthcare services

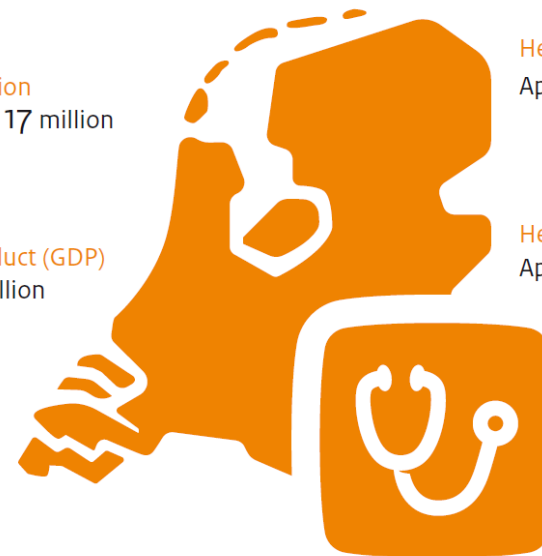| Public requirements |
|---|
| • Private individuals are required to purchase basic health insurance
• Insurers have to accept all clients
• Price is equal to all insured individuals
• Insurers have duty of care
• The contents of the insures basic health coverage is provided for under law. |

Population
Approx. 17 million

Healthcare expenditure in EUR
Approx. EUR 70 billion

Gross Domestic Product (GDP)
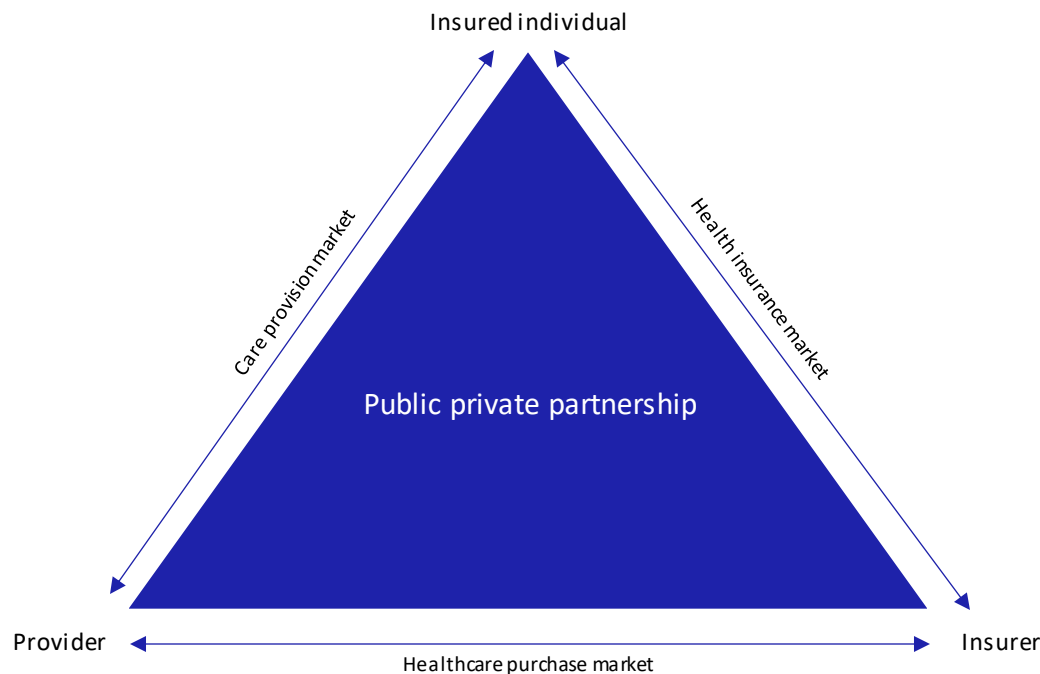Approx. EUR 700 billion

Healthcare expenditure
Approx. 10% of GDP

Total number of people employed in the healthcare field
Roughly 1,1 million

...is a system of managed competition

Insured individual

Care provision market

Health insurance market

Public private partnership

Provider

Healthcare purchase market

Insurer

Government is responsible for organising accessibility, defining basic package and supervising market and quality

Insured individuals are free in their choice of insurer; possibility to change every year

Providers compete for contracts with insurers on price & quality of care

Insurers compete for insured on premium, quality, service level

The Dutch Healthcare System

The Dutch healthcare system is mainly governed by four basic healthcare-related acts (besides the Competition Act):

- **Responsibility of National government:**
  - The Health Insurance Act (Zorgverzekeringswet) – Hospital Care
  - The Long-Term Care Act (Wet Langdurige zorg) – Other types of care, f.e. when people develop mobility issues due to chronic conditions or disabilities and need 24/7 specialized care

- **Responsibility of Local Government (342 municipalities):**
  - The Social Support Act (Wet Maatschappelijke ondersteuning) – Support at home
  - The Youth Act (Jeugdwet)

LOCAL AUTHORITY

Prevention
Youth support services
Child protection services
Youth rehabilitation services
Hotline for reporting incidents and cases of
domestic violence and child abuse

SOCIAL NETWORK YOUTH AND FAMILY

HEALTHCARE PROVIDERS

Basic health insurance package

So what is included in the Dutch basic health insurance package? The central government is in charge of the contents and size of the statutory health insurance package, which is available to all residents of the Netherlands. The government is advised on these issues by the independent authority responsible for the basic health insurance package, the Zorginstituut Nederland (National Health Care Institute). The government, then, determines which types of care are included in the package and when this care should be provided.

The basic health insurance package includes the following types of care:

- medical care provided by GPs, medical specialists (consultant physicians) and obstetricians;
- district nursing;
- hospitalisation;
- mental health services, including hospital care (mental health-related) up to a maximum of three years;
- medications;
- dental care up to age 18;
- services provided by various types of therapists, including physical therapists, remedial therapists, speech therapists and occupational therapists;
- nutritional/dietary care;
- medical aids;
- ambulance support/sedentary medical transport;
- physiotherapy for people with chronic illnesses.

Healthcare Authorities of the Ministry of Health (VWS)

1. **Improving quality and accessibility of insured healthcare and determination of insured care**

   → **Dutch Healthcare Institute (ZIN)**

2. **Supervision:**

- Ensures the implementation of the Health Insurance Act and acts as market regulator in healthcare markets, incl. insurers

  → **Dutch Healthcare Authority (NZA)**

- Oversees and enforces the quality and safety of healthcare

  → **Dutch Healthcare Inspectorate (IGJ)**

- Ensures fair competition between businesses, and protects the interests of consumers (patients and insured parties), including in healthcare.

  → **In collaboration with the Netherlands Authority for Consumers and Markets (ACM) and the Ministry of Economy (EZK)**

Healthcare Insurers (Private and Not-for-Profit)

The Health Insurance Act has transformed the Dutch healthcare system from a supply-driven to a demand-driven system. Private health insurance companies are improving the healthcare system in a number of ways: shorter waiting lists and less red tape in conjunction with a greater focus on effectiveness and quality, in the interest of patients and policyholders. A process of selective contracting enables health insurance companies to control the effectiveness and quality of the care provided by healthcare providers. Members of the public, in turn, also have some degree of control over this process, since they are given the opportunity every year to switch healthcare providers and can influence the policies of health insurers and health institutions. While the healthcare system is essentially a private system, the government plays a controlling role in order to protect the public interest.

Typically Dutch: Smart, very innovation minded Healthcare Insurance Coops!

Ministry of Health, Welfare and Sport

Further digitalization in the Netherlands was needed, History:

-2011 Nat. Exchange Infrastructrure failed in Senate
-2018 Preparation of WEGIZ
-2023 Unanimously approved in Parliament and Senate

2019 Dutch news item:
nurses are tired of faxing and retyping information

Verpleegkundigen zijn faxen en overtikken van patiëntgegevens zat

Medewerkers in de zorg zijn veel tijd kwijt aan het overtikken, printen en faxen van gegevens van patiënten. Dat blijkt uit een rondgang van de NOS onder ruim 700 zorgmedewerkers, onder wie 500 verpleegkundigen.

Honderden zorgverleners klagen dat ze veel tijd kwijt zijn aan het overtikken, vaak tot een uur per dag. "Beschamend", noemt Sonja Kersten de situatie. Zij is directeur van V&VN, de beroepsvereniging van verpleegkundigen.

Wat haar betreft moeten zorginstellingen een vuist maken tegen de ict-leveranciers en eisen dat de software beter gaat samenwerken. "Ict moet de zorg helpen, niet ingewikkelder maken", zegt Kersten.

GESCHREVEN DOOR
Joost Schellevis en Rinke van den Brink

Integraal Zorg Akkoord

Samen werken aan gezonde zorg

HL7 FHIR

Uitvoering thema digitalisering & gegevensuitwisseling

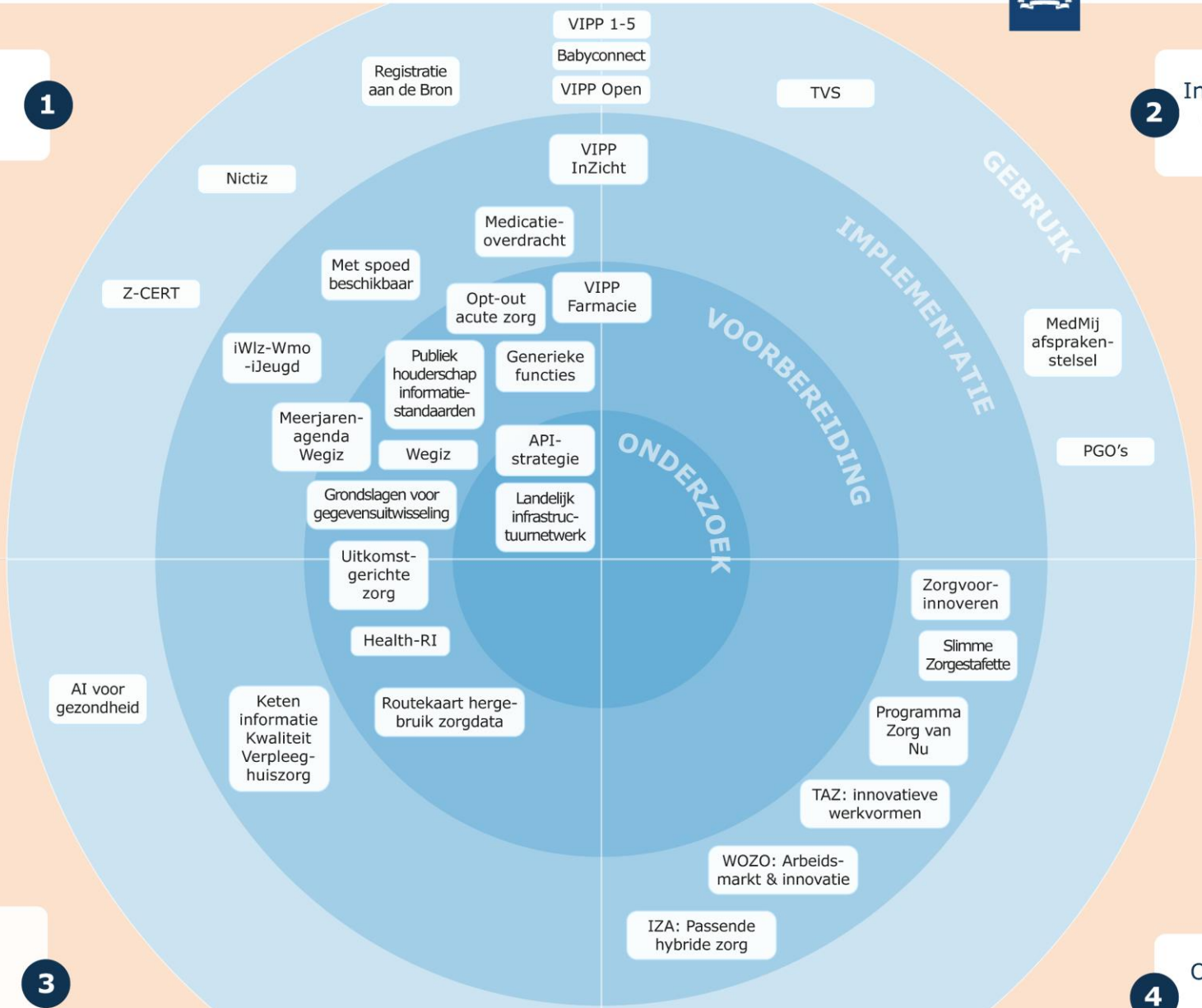# VWS-initiatieven digitalisering in de zorg: IZA indeling

1 Elektronische gegevensuitwisseling is de standaard in de zorg.

2 Inwoners van Nederland hebben in 2025 digitaal toegang tot en de beschikking over hun eigen zorggegevens.
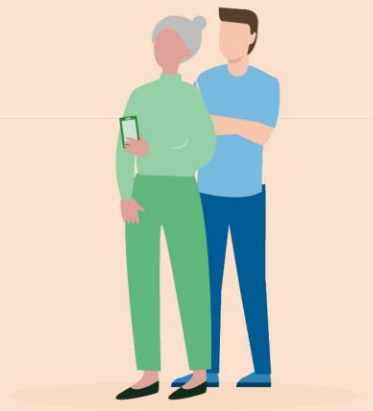
3 Data wordt digitaal, eenduidig en gestandaardiseerd geregistreerd in het zorgproces en beschikbaar gesteld voor diverse secundaire doelen.

4 Om de zorg toegankelijk, kwalitatief en betaalbaar te houden is transformatie nodig naar hybride zorg.

GEBRUIK

IMPLEMENTATIE

VOORBEREIDING

ONDERZOEK

- VIPP 1-5
- Babyconnect
- VIPP Open
- TVS
- Registratie aan de Bron
- VIPP InZicht
- Nictiz
- Medicatie-overdracht
- Met spoed beschikbaar
- Opt-out acute zorg
- VIPP Farmacie
- Z-CERT
- iWlz-Wmo-iJeugd
- Publiek houderschap informatie-standaarden
- Generieke functies
- MedMij afspraken-stelsel
- Meerjaren-agenda Wegiz
- Wegiz
- API-strategie
- Grondslagen voor gegevensuitwisseling
- Landelijk infrastruc-tuurnetwerk
- PGO's
- Uitkomst-gerichte zorg
- Zorgvoor-innoveren
- Health-RI
- Slimme Zorgestafette
- AI voor gezondheid
- Keten informatie Kwaliteit Verpleeg-huiszorg
- Routekaart herge-bruik zorgdata
- Programma Zorg van Nu
- TAZ: innovatieve werkvormen
- WOZO: Arbeids-markt & innovatie
- IZA: Passende hybride zorg

1. Werkagenda Q1 2023

| IZA-afspraak	Actiehouder
Nationale visie gezondheidsinformatiestelsel FHIR mandatoy	VWS
Visie PGO's	MedMij/MedElkaar
Consultatie wetswijziging opt-out gegevensuitwisseling acute zorg	VWS
Opleveren onderzoek naar verplicht gebruik landelijke infrastructuurnetwerken etc. door zorgaanbieders en ICT-leveranciers,	VWS
Vanaf 2023 maken VWS, systeem- en veldpartijen jaarlijkse afspraken over transformatie van zorgprocessen die daarvoor geschikt zijn waarbij hybride zorg het uitgangspunt is.	ntb
Partijen ontwikkelen en gebruiken vanaf 2023 een gezamenlijke ondersteuningsstructuur aanvullend op het zorgtransformatiemodel (VWS, systeem- en veldpartijen).	VWS (incl. concern)

WEGIZ

Ministry of Health, Welfare and Sport

National program for Health Information Exchange (WEGIZ)

- Framework law to make Health Information Exchange mandatory

- Legislation for data exchange per use case

  - **Digital Prescription**
  - **Patient Summary**
  - **Image Transfer**
  - **Nursing Transfer**

- Setting up an approach for next use cases

Framework Law WEGIZ
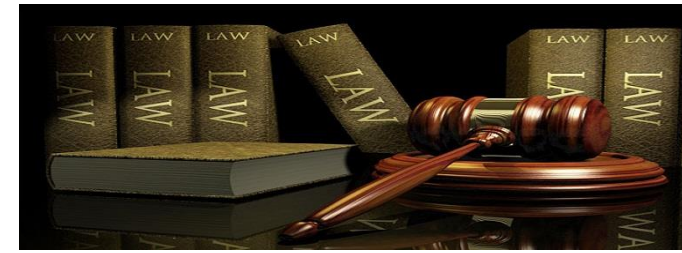
- If Health Care Providers are exchanging information about a patient, the legislation is prescribing how data will be exchanged by semantical en syntactical demands

  - **Exchanging electronically via an electronic infrastructure (track 1)**
  - **Striving to a data exchange that is normalized and certified (track 2)**

- Scope of the Law: only data exchange between care providers, not with patients (when passed in parliament the patients were added)

- Rules about consent for the exchange are contained in other laws

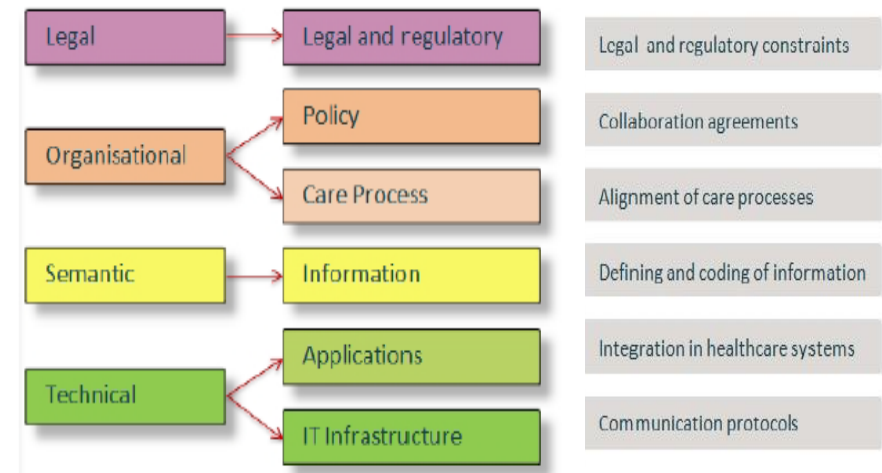# *Approach 'from Idea to legislation'*

- If Umbrella Healthcare Organizations have an Idea for a mandatory data exchange:

- The use case is being investigated before the MoH actually makes legislation:

  - **Is there a support base for legislation?**
    - Are there sufficient umbrella organizations who want this?

  - **What is the Added Value for the Society in the next 15 years**
    - Executing a social-cultural business case

  - **What is the implementation readiness of Healthcare providers at the moment?**
    - Executing a Maturity Scan (DIMM- Dutch Interoperability Maturity Model)

Maturity Scan for HIE use cases

- A generic scan that can be repeated for every HIE that the government wants to make mandatory by legislation

- The scan must give insight into the extent that care institutes and caregivers are ready for the different aspects of the use case (score)

- The scan must give insight into what care institutes and caregivers need to do before they can electronically exchange the specific data (gap)

Dutch Interoperability Maturity Model

- Developed together with HIMSS and Nictiz

- Based on the ReEIF

- Goal per layer

- Every question has a maturity structure in the answers

DIMM

Dutch Interoperability Maturity Model

Legal	→	Legal and regulatory		Legal and regulatory constraints
Organisational	→	Policy		Collaboration agreements
	→	Care Process		Alignment of care processes
Semantic	→	Information		Defining and coding of information
Technical	→	Applications		Integration in healthcare systems
	→	IT Infrastructure		Communication protocols

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Versnellingsimpuls digitale zorg

Regelingen voor extra stimulering van digitale zorg

VIPP InZicht	VIPP Geboortezorg	Pré-SET	Innovatie impuls gehandicaptenzorg	Subsidieregeling JZOJP
VIPP Huisartsen	VIPP MSZ	SET-up	Challenge verpleeg-huizen van de toekomst	Transitiemiddelen verpleeghuiszorg
VIPP GGZ	VIPP GGZ Vrijgevestigden	SET	Kwaliteitsbudget verpleeghuiszorg	Transformatiegelden MSZ

Subsidieregeling veelbelovende zorg	Investeringsfondsen Seed capital e-Health SU	SET-COVID-19 1.0 en 2.0	Gebruikersregeling PGO

Vraagstuk

De laatste mijl

Zorg ZandBak

Verbeteren van randvoorwaarden inzet van digitale zorg

Vergroten van digitale vaardigheden: digivaardigindezorg.nl, Alliantie Digitaal Samenleven, subsidieregeling digicoaches

e-Health Monitor: Meten stand van zaken en formuleren van nieuwe doelstellingen

Herijking toetsingskader e-Health: Helderheid over wanneer e-Health voldoet aan goede zorg (IGJ)

Project XIS: Basiseisen voor HISsen gericht op stimuleren van doorontwikkeling

Bekostigingswijzer Digitale Zorg: Geeft aan waar ruimte is voor inzet Digitale zorg. Verruimingen vanwege COVID-19 (NZa)

Toetsingskader Gezondheidsapps Eisen waaraan applicaties dienen te voldoen wil er sprake zijn van goede apps

Stimuleren van implementatie en opschaling van digitale zorg

ROAZ – acute zorgketen – inzetten digitale zorg

Versnellings impuls – bewezen effectieve nieuwe vormen van zorg opschalen

Effectiviteitsonderzoek e-Health – onderzoek effectiviteit en toepasbaarheid HA praktijk e-Health

Hoofdlijnenakkoord MSZ

Zorg voor innoveren – advies op maat en vouchers voor implementatie en opschalingscoaching

Vliegwielcoalitie – katalysator voor opschalen van bewezen effectieve digitale zorginnovaties

Actieonderzoek Innovatieve zorg – oplossingen voor uitdagingen op vlak van organisatie van zorg

Zorg van Nu - inspireren en motiveren om e-health en innovaties in de zorg te gebruiken.

Actieprogramma Werken in de Zorg – aanpak personeelstekort met behulp van technologische innovatie

Digitaal ouder worden – met inzet van digitale middelen zorg voor kwetsbare ouderen verder bestendigen

Versnelling digitalisering vanuit Hoofdlijnenakkoord Huisartsenzorg

Citrienfonds – bevorderen van duurzame gezondheidszorg

Meenemen en enthousiasmeren van patiënten en cliënten voor digitale zorg

Campagne Thuis kan het ook – Patiëntenfederatie

Kennis en communicatiecampagnes zorgverzekeraars – digitale zorgtoepassingen

E-Health week opvolging in vorm van Slimme Zorg Estafette: www.slimmezorgestafette.nl

Campagne Samen Beslissen: Betere zorg begint met een goed gesprek


RESEARCH + IMPROVEMENT OF ENABLING CONDITIONS

IMPLEMENTATION AND SCALE UP

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CITIZEN AWARENESS CAMPAIGNS

National program for Health Information Exchange

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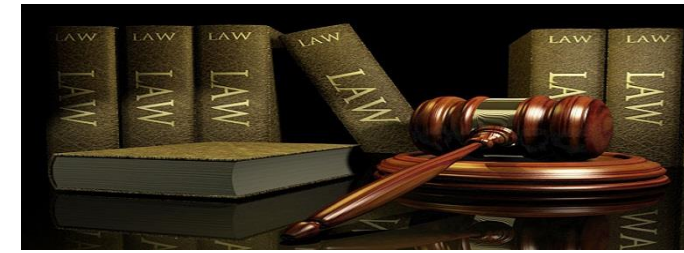
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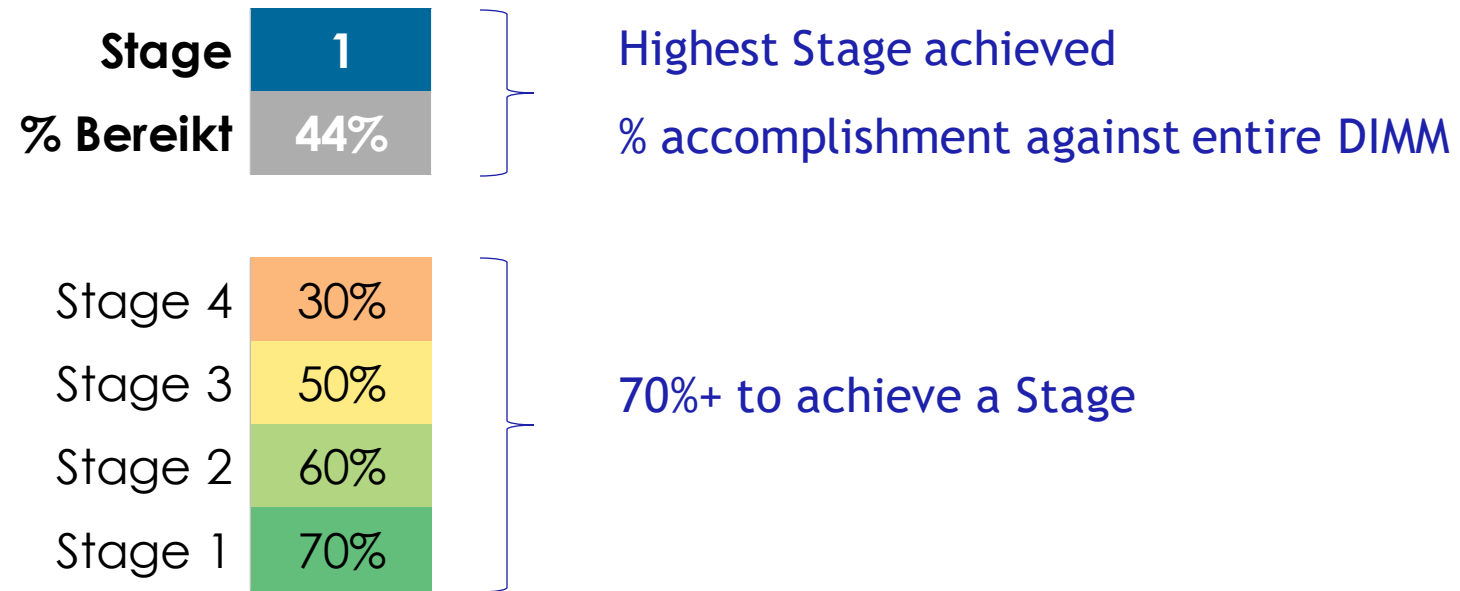# *Dutch Interoperability Maturity Model*

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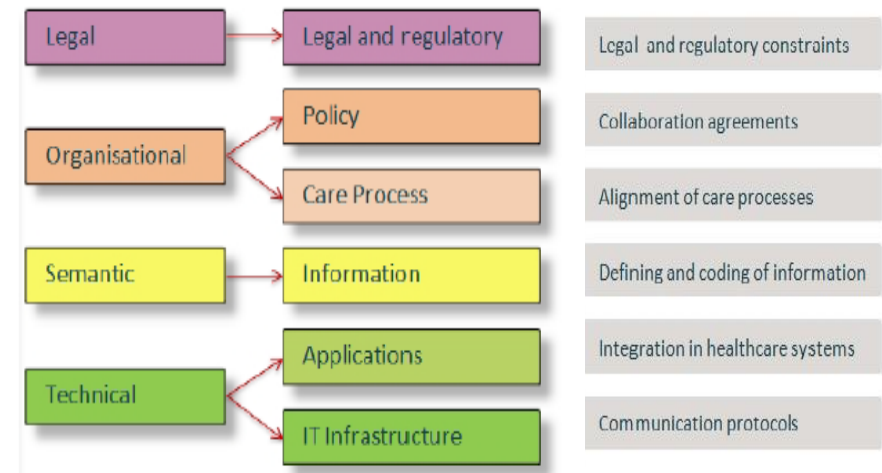
Methodology

- The questionnaire comprises 37 compliance statements

  - **Laws and regulation – 3 compliance statements**

  - **Organisation – 9 compliance statements**

  - **Care Processes – 7 compliance statements**

  - **Information – 4 compliance statements**

  - **Application – 10 compliance statements**

  - **Infrastructure – 4 compliance statements**

- Each compliance statement was rated on a 5-point scale

- Each option of the 5-point scale corresponds to a DIMM Stage (from Stage 0 to Stage 4)

- Each compliance statement has the same weight in both evaluation pilots

- In a workshop setting, initial responses have been discussed with stakeholders from each healthcare provider

- The data were analyzed using the DIMM algorithm

- Final achievements have been calculated and findings have been prepared and shared with the client

Score

Stage	1
% Bereikt	**44%**

Highest Stage achieved

% accomplishment against entire DIMM

Stage 4	30%
Stage 3	50%
Stage 2	60%
Stage 1	70%

70%+ to achieve a Stage

Pilot 1 - BgZ - Overall Results

Summary Pilot 1 (BgZ – Summary Care Record)

- With an average Score of 1.6 the 16 participants achieve DIMM Stage 1 with 53% compliance against the entire model criteria.

- The capabilities vary between healthcare organizations (minimum Stage 0, maximum Stage 4) and sub-domains (minimum Care Process, maximum IT-Infrastructure).

Conformiteit per Sub-Domein

- Health information sharing processes and capabilities covered in sub-domains "Zorgproces" and "Informatie" are on average the weakest sub-domains

- Sub domains "IT Infrastructuur" and "Wet- & Regelgeving" score highest and on DIMM Stage 2

- With regards to sub-domains "Organisatiebeleid" and "Applicatie", the care organizations are close to DIMM Stage 2 with 69% compliance.

	Wet- & regelgeving	Organisatie-beleid	Zorgproces	Informatie	Applicatie	IT-Infrastructuur
Niveau	2	1	0	0	1	2
% Bereikt	54%	56%	38%	42%	58%	59%
Niveau 4	15%	28%	14%	16%	31%	31%
Niveau 3	38%	50%	35%	36%	49%	45%
Niveau 2	71%	69%	45%	52%	69%	73%
Niveau 1	94%	78%	60%	64%	83%	86%

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Pilot 2 – IMAGE Exchange – Overall Results

Summary Pilot 2 (Image Exchange)

- The capabilities vary between healthcare organizations (minimum Stage 0, maximum Stage 3) and sub-domains (minimum Information, maximum Application and IT-Infrastructure).

Outcomes and Shared Decision Making

Ministry of Health, Welfare and Sport

Context of the Outcome Program

Collaboration agreement (CA) specialist medical care

Letter to Parliament on Outcome transparency (minister Schippers)

Year of transparency

| 2015 | 2016 | 2017 | 2018 | 2019 | 2023 2024 |

Shared-decision making

Coalition agreement Rutte III

Outcome based healthcare 2018-2022

2023 ICT White Book PROMS
2024 Implementation Program on 4 conditions:
-knee arthrosis
-chronic renal failure
-IBD
- pancreatic ca
Generic PROMs

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Outcome based healthcare

- Improving patient quality of life.
- Increasing job satisfaction for healthcare providers.

Getting started locally

- 10% pioneers as leverage
- Dutch Health Care Institute (ZiNL) and Ministry of Health, Welfare and Sport (VWS) create room for pioneers
- Patients as driving force to activate demand

Master plan

Front runners

Goal

Step 2

Step 1

Show that it is possible!

Organise:
from 10% to 100%

Outcome based healthcare = the new norm(al)

No striving for 100% certainty

- No longer striving for removal of *all* barriers and 100% certainty, but to start quickly and develop while learning.

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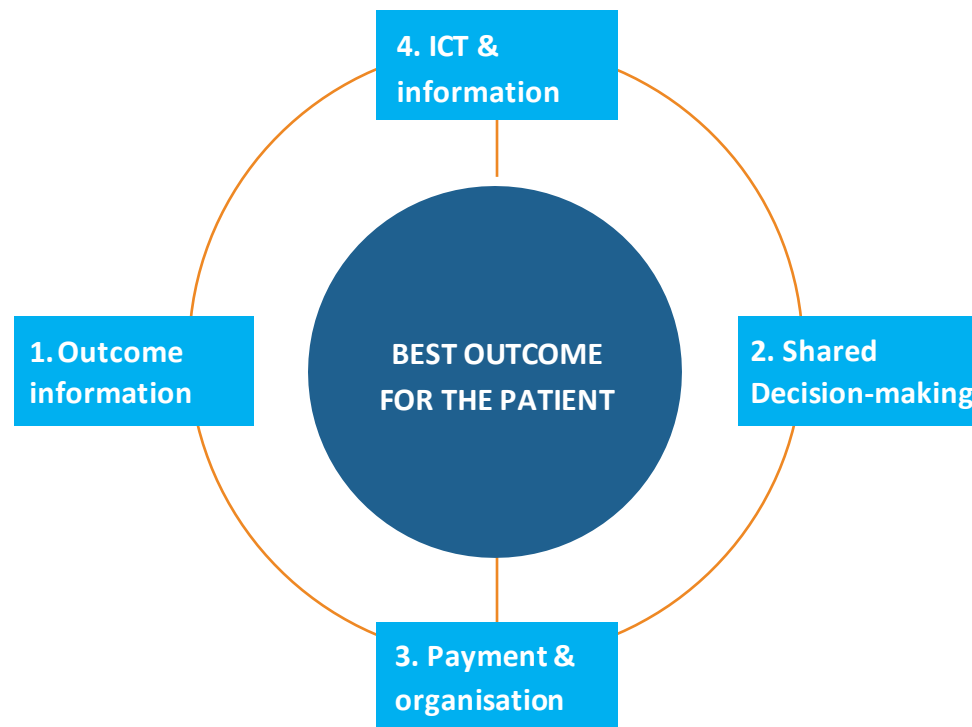
ICT
standards / € / privacy

STOP

Regulatory pressure
experienced difficulty

Rewards
finances / funding

How to prepare for a ride on a winding road?
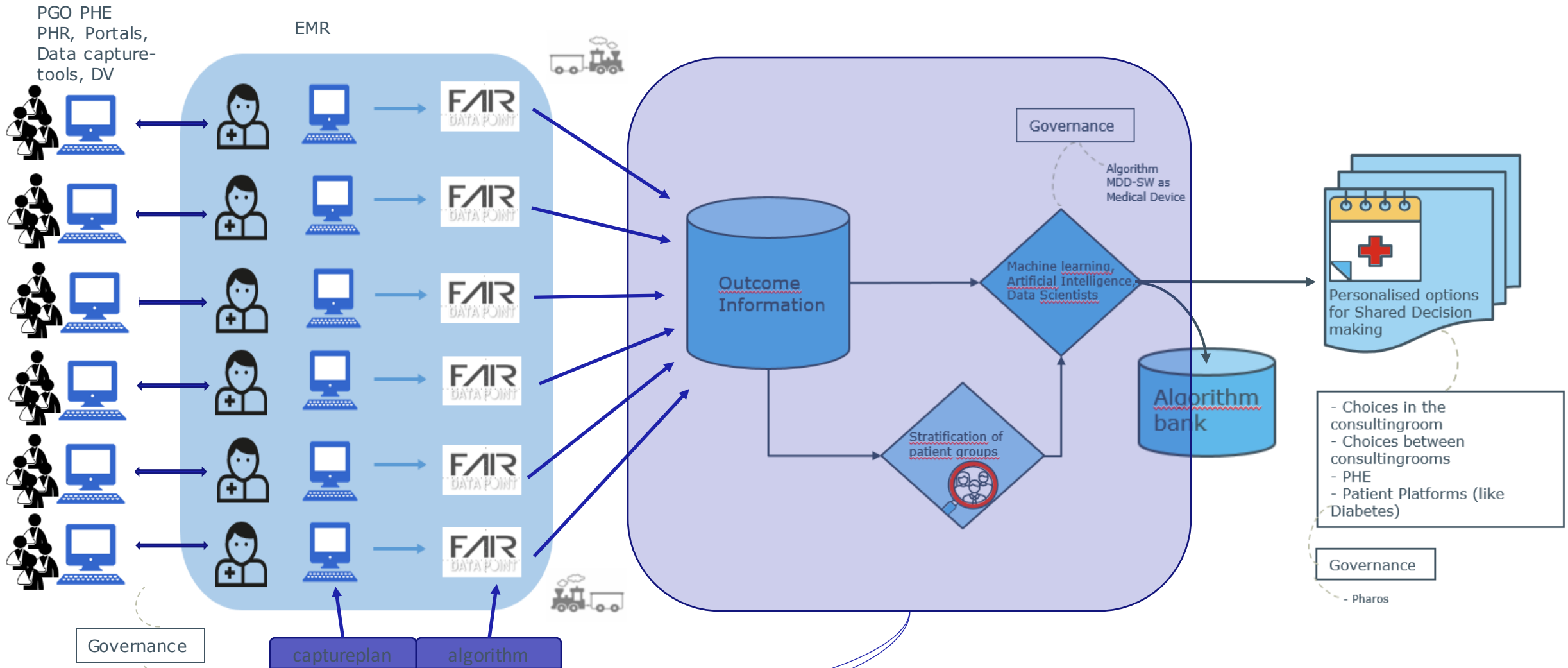

Along a four-pronged approach (workstreams):

1. More insight into outcomes (Coord. FMS (Federation Medical Specialists)

2. More shared decision-making (Coord. Patient Federation Nederland)

3. More outcome based organisation and payment (Coord. ZN Dutch Insurers)

4. Better access to relevant and up-to-date outcomes information (Coord. VWS Directie Informatie / CIO)

Outcome data & Shared Decision Making

Data gathering

Analysis

Shared Decision Making

PGO PHE PHR, Portals, Data capture-tools, DV

EMR

FAIR DATA POINT

Governance

Algorithm MDD-SW as Medical Device

Outcome Information

Machine learning, Artificial Intelligence, Data Scientists

Stratification of patient groups

Algorithm bank

Personalised options for Shared Decision making

- Choices in the consultingroom
- Choices between consultingrooms
- PHE
- Patient Platforms (like Diabetes)

Governance

- Pharos

Governance

captureplan   algorithm

PROMS
Reg a/d Bron
ICHOM
MedMIJ
SNOMED-CT
- etc.

Algorithm is part of capture plan.
In captureplan is a benchmarking –agreement:
Purpose-binding, Privacy by design

Questions

Please ask anything you like:

from Cheese making to Interoperability

Thank you!

Jan-Eric Slot MB MBA MSc CHCIO

Jitkomstgerichte Zorg Lijn 4 bij Ministerie van Volksgezondheid, Welzijn en Sport

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