

Interoperability of personal health systems— the state of the art

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About your presenter

- ◆ Vice President Cypak since 2007: standards based technology provider for connected health devices
- ◆ Director Healthcare Compliance Packaging Council for Europe
- ◆ Led international standards for medication monitoring in IEEE and the Continua Health Alliance
- ◆ Previously in executive management with Zensys and Philips



Chris Johnson

Marketing consultant and writer

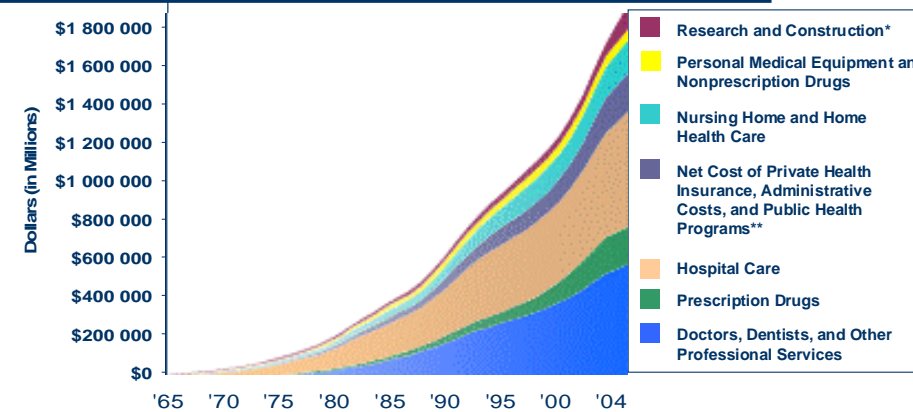
Advisor to Cypak AB, Director Healthcare Compliance Council, member of Continua Health Alliance and IEEE.

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The broad market opportunity in healthcare

- Healthcare costs rising above 10% (EU) to 17% (USA) of GDP
- The worldwide market is huge – COPD > 600m, Hypertension > 600m, Diabetes > 200m
- Connecting patients helps! People stay at home longer. Prevention strategies are enabled.
- New solutions should be scalable, fast to adopt and easy to use.

Health Care Costs: 1965–2004



* Now revised to Structures and Equipment

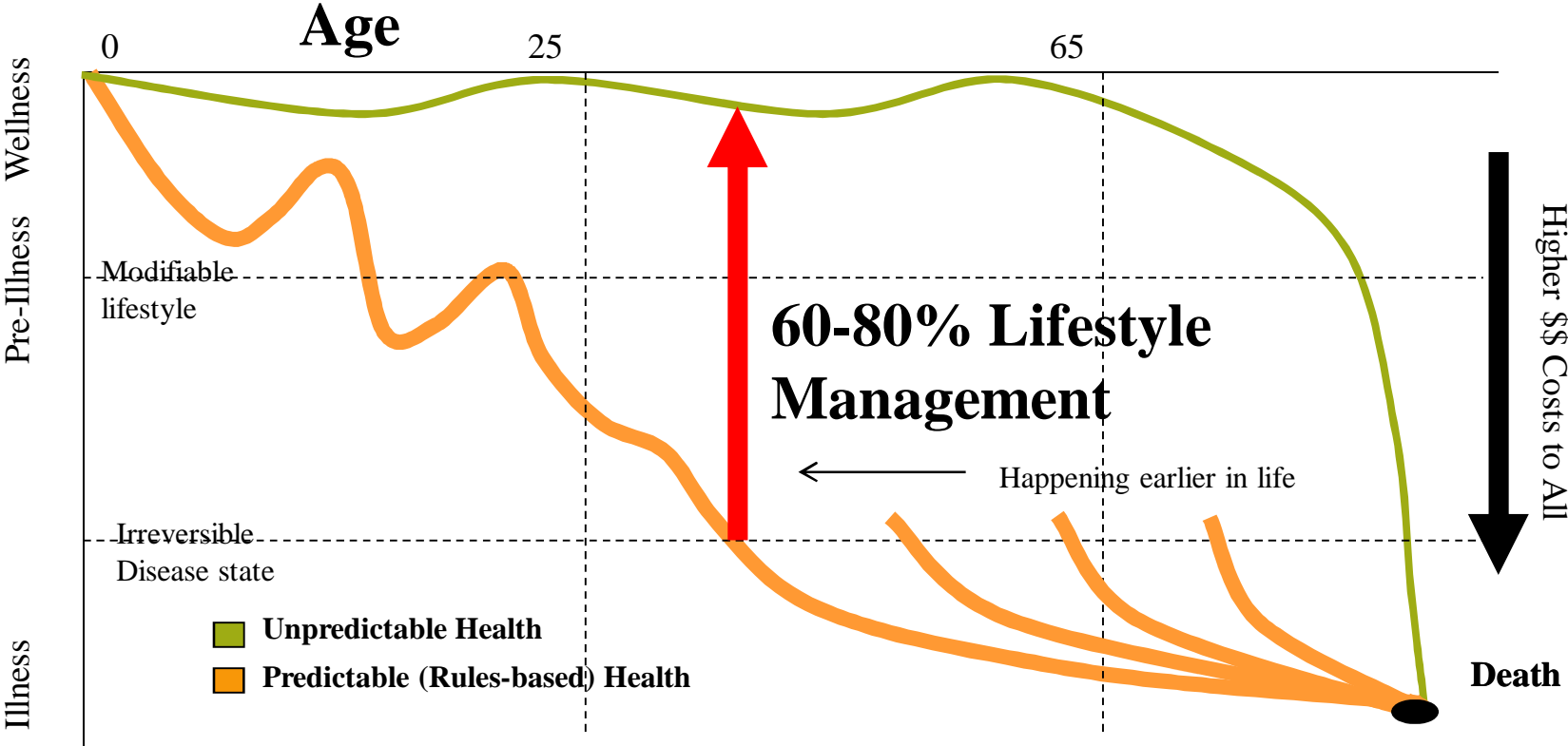
** Now revised to Government Public Health Activities

Note: Total health care expenditures for 2004 were \$1.9 trillion.

Data source: U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, Office of the Actuary⁶

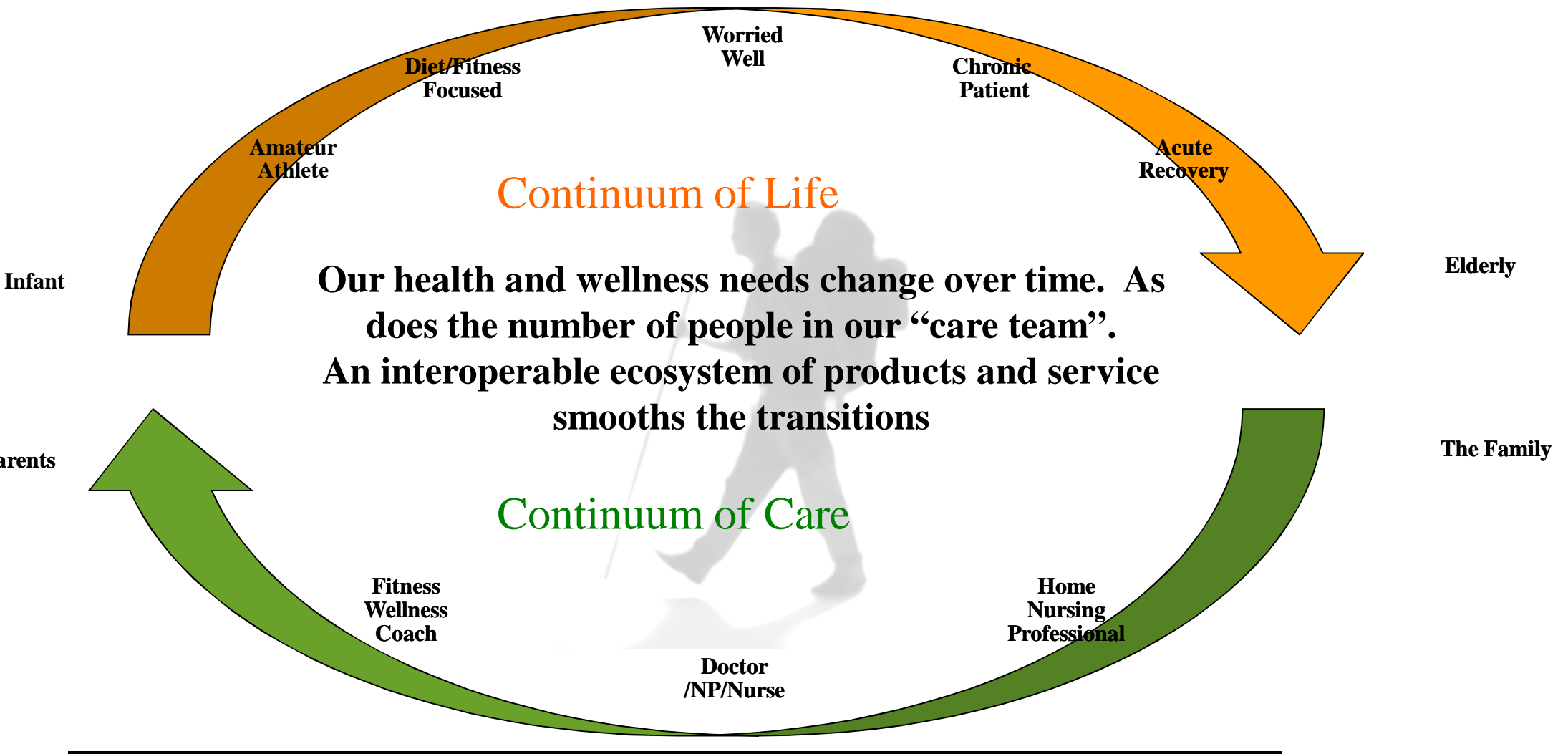
**Future costs are too high for governments and society.
New approaches are essential.**

Lifestyle management - the next connection

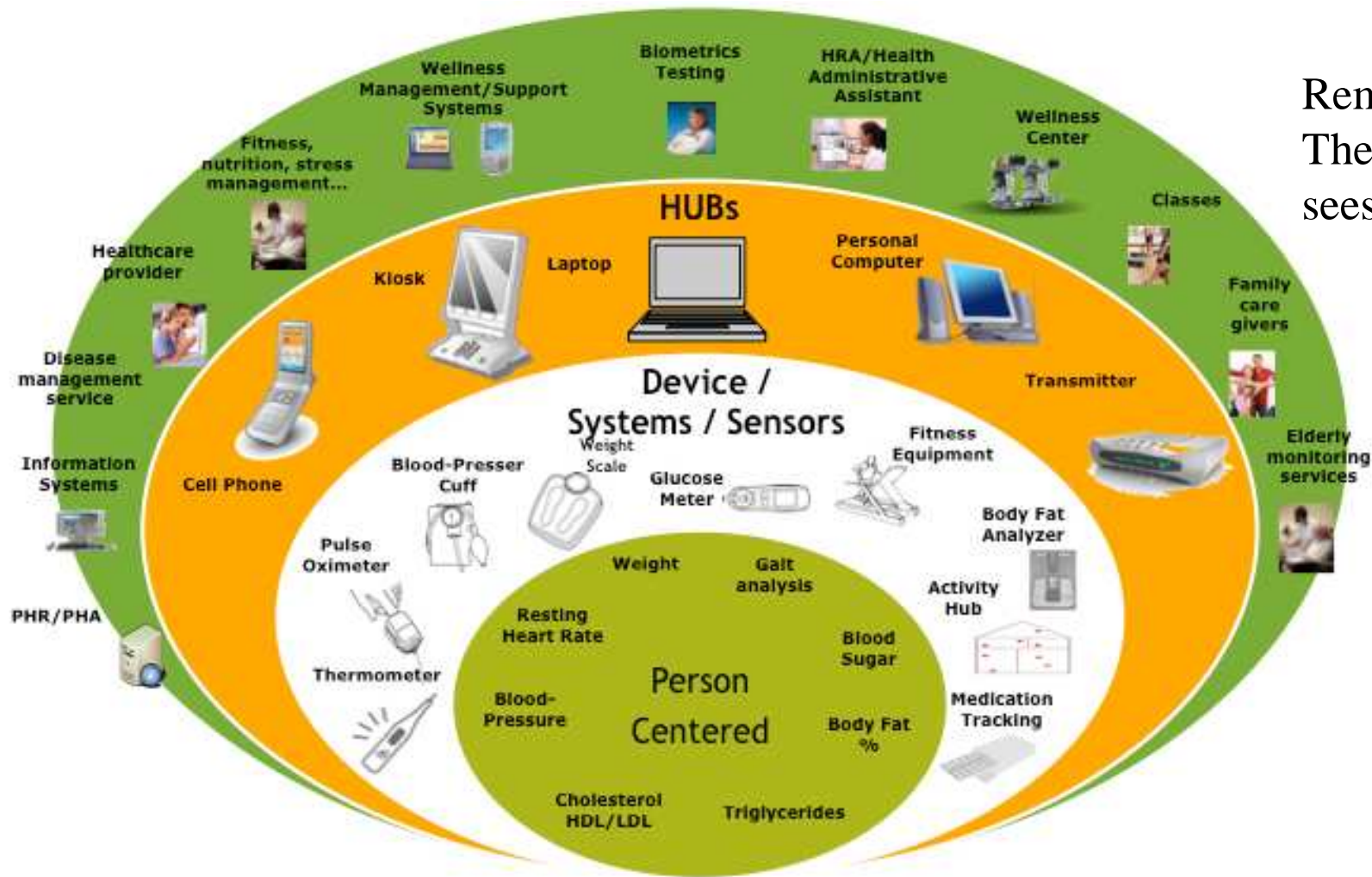


Adapted from Oregon Medical Labs/Continua Health Alliance

The many faces of interoperability



And we all need one health record



Remote Patient Monitoring:
The ecosystem as the patient
sees it

Continua view of technical interfaces & standards

Personal Device

Thermometer



Pulse Oximeter



Pulse / Blood Pressure



Weight Scale



Glucose Meter



Cardio / Strength



Independent Living Activity



Peak Flow



Medication Adherence



Physical Activity



Electrocardiogram



Insulin Pump



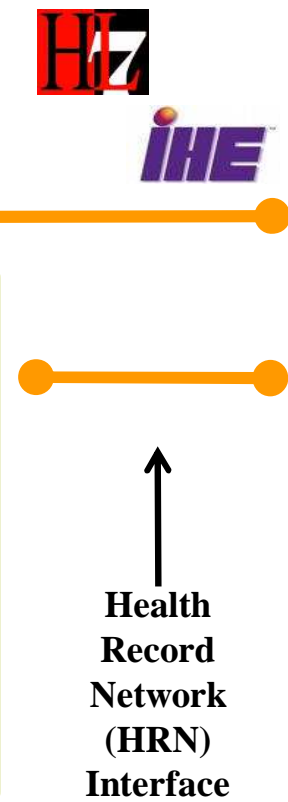
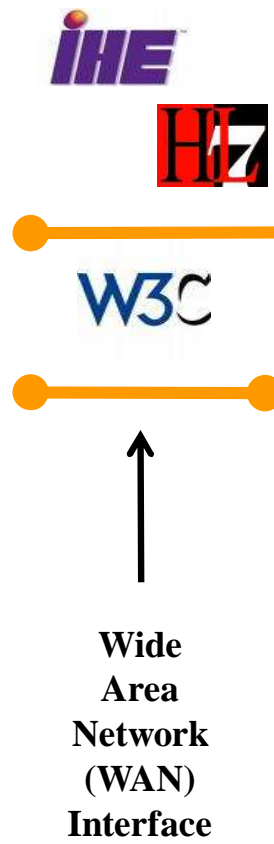
Aggregation Manager



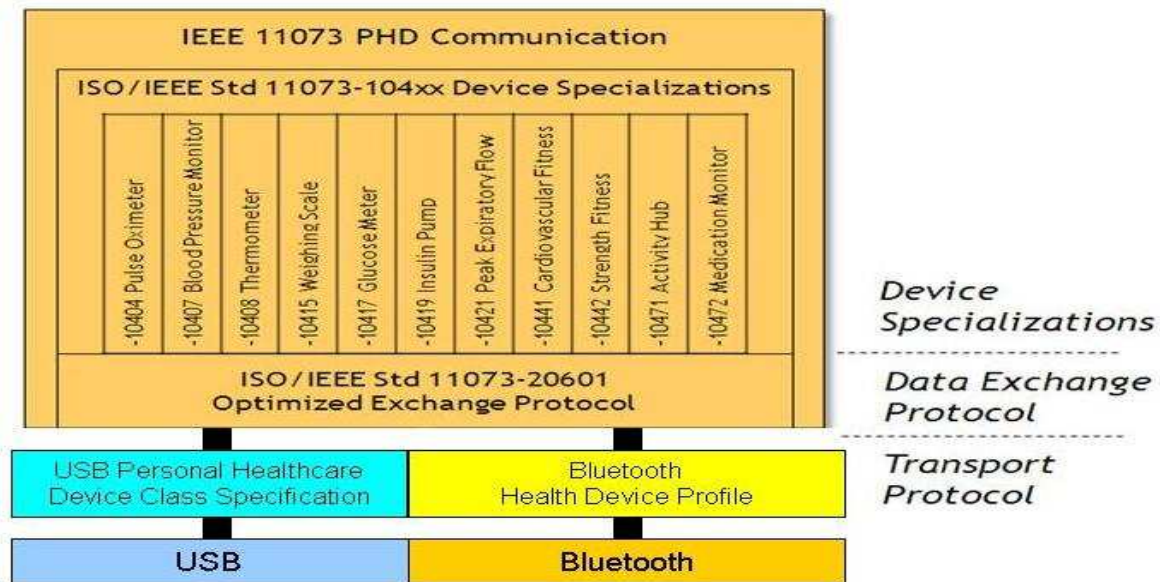
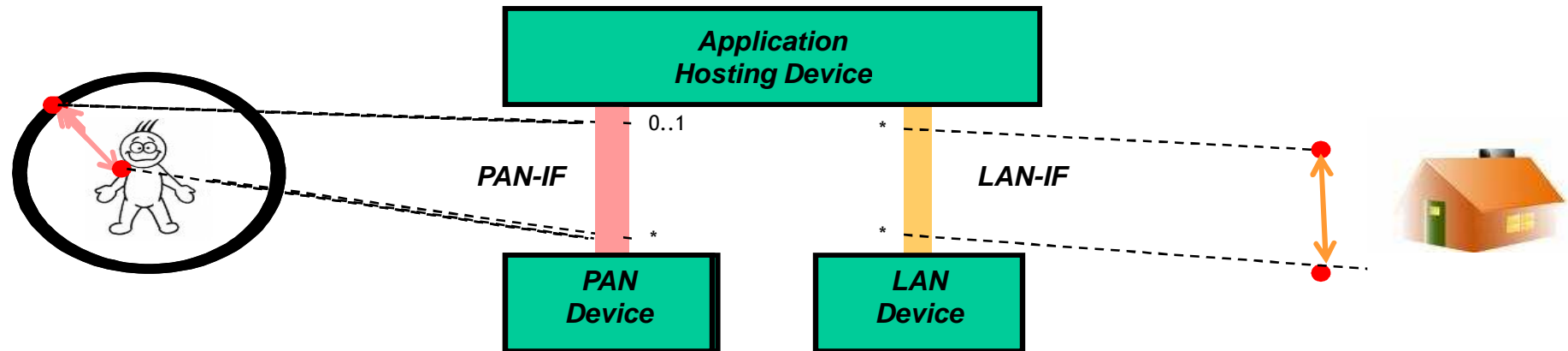
Personal Care Provider



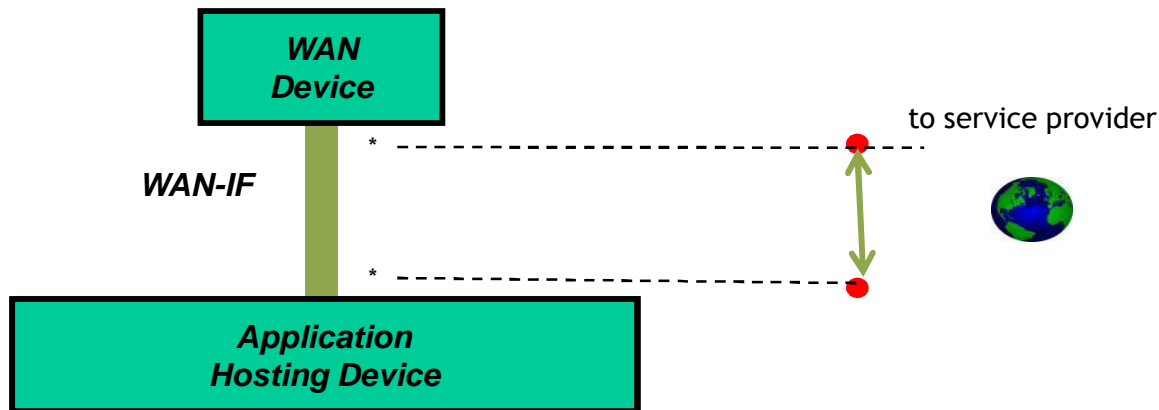
Health Records



PAN-LAN Interface Standards – Continua guideline



WAN Interface Standards – Continua and IHE-PCD



Messaging

HL7 V2.6 constrained by
IHE DEC PCD-01 and RTM

Semantics

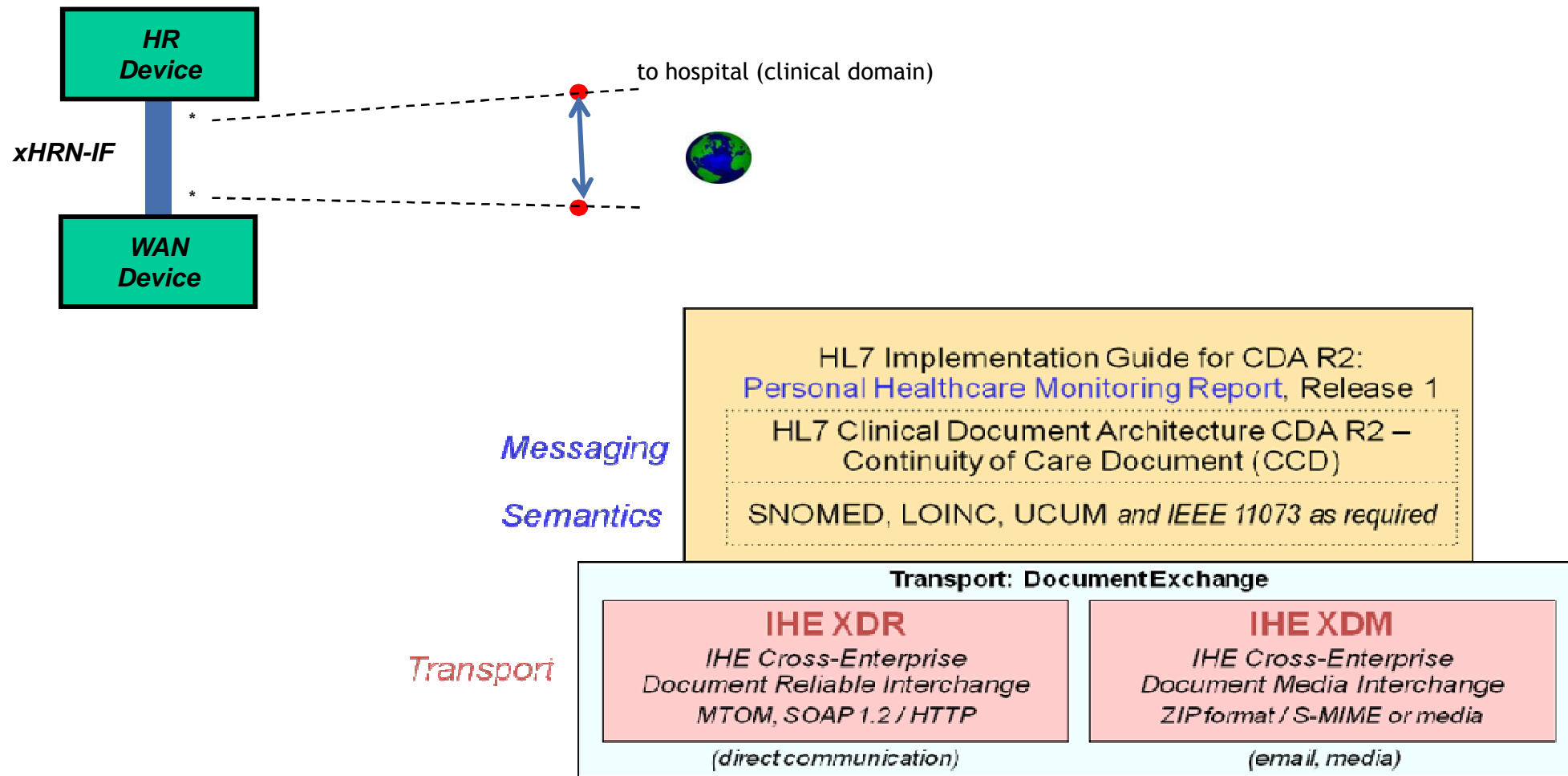
IEEE 11073-20601 and
104xx terms

IEEE 11073-10101 terms
and -10201 info model

Transport

Web Services WS-I BP
IHE IT Infrastructure TF Vol 2
Appendix V Rev 6.0
WS-IBP over SOAP 1.2
Plus **WSI-BSP, TLS and IHE ATNA**

HRN Interface Standards – Continua and IHE



Key organizations cooperating

- IEEE/ISO – interfaces and personal health devices
 - IHE – guidelines for clinical interoperability
 - HL7 – clinical data standards
 - Continua – guidelines for remote patient monitoring, wellness
 - Ecosystems such as USB, Bluetooth, ZigBee, NFC
 - And many others
-

Some facts about Continua

Continua does not create standards. It publishes guidelines based on existing standards and works with those standards authorities to meet healthcare needs.

- ◆ Guidelines 1.0 and 1.5 published
 - ◆ 230 members from all major regions, 2000 “volunteers” in 16 working groups, newsletter mailed to 16000 qualified subscribers
 - ◆ Certification program operational and 14 products certified
 - ◆ Close cooperation with IEEE, ISO, IHE, HL7, Bluetooth, ZigBee and others
 - ◆ Continua is committed to open standards and membership is open to all
-



Continua[™]
CERTIFIED

The certification program uses authorised laboratories to test vendor products for conformance with guidelines and operation within reference environments.

The goal is to provide a trusted mark indicating interoperability.

Latest Continua Certified™ Products

ager (TBA)



Nonin Wireless Fingertip Pulse Oximeter



Nonin Pulse Oximeter



Roche Accu-Chek® Smart Pix Device Reader

Omron Blood Pressure Monitor



Omron Pedometer



Omron Body Composition Monitor



Continua
CERTIFIED



A&D Medical Weight Scale



DOSHIBA



Bluetooth™ Software Application for Windows® by Toshiba



Texas Instruments MSP430 USB Agent Platform



amed HRN
face has been
oved

A&D Blood Pressure Monitor w/ CPX186 Converter Cable



A&D Weight Scale w/ CYPAK Converter Cable




A&D Medical Blood Monitor

New use case development in Continua

M1: Decompose UC into requirements

M2: Select Standards

M3: Identify gaps between standards and requirements

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- V1.5 (Q2 2010)**
- Advanced Medication Monitor
 - Peak Flow Monitoring Device
 - Upload Health Information on the WAN
 - Sneaker-Net xHR Interface
 - Insulin Pump Monitor Device
 - Errata from V 1
 - Low Power Radio

Exit →
Successful TWG
Ballot, BOD
approval

M4: Develop Guidelines

M5: Create Test Procedures and complete review

Test Tool

Exit →
TWG review
and ballot








Exit →
Successful
TCWG review

Exit →
Pass Tool
Test

Continua Use Cases are developed by expert groups including healthcare providers and industry leaders.

Priorities for adoption balloted by all promotor members

Interoperability benefits

-  Easy connection with vital services – now and in the future
 -  Choice of suppliers
 -  Scalability
 -  Fast implementation of new features and innovation
 -  Consistent semantics for aggregated analysis: better medicine
 -  Trusted brand: faster adoption, protected investments
 -  Future safe: integration with eg IHE and other norms
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Thank you!

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