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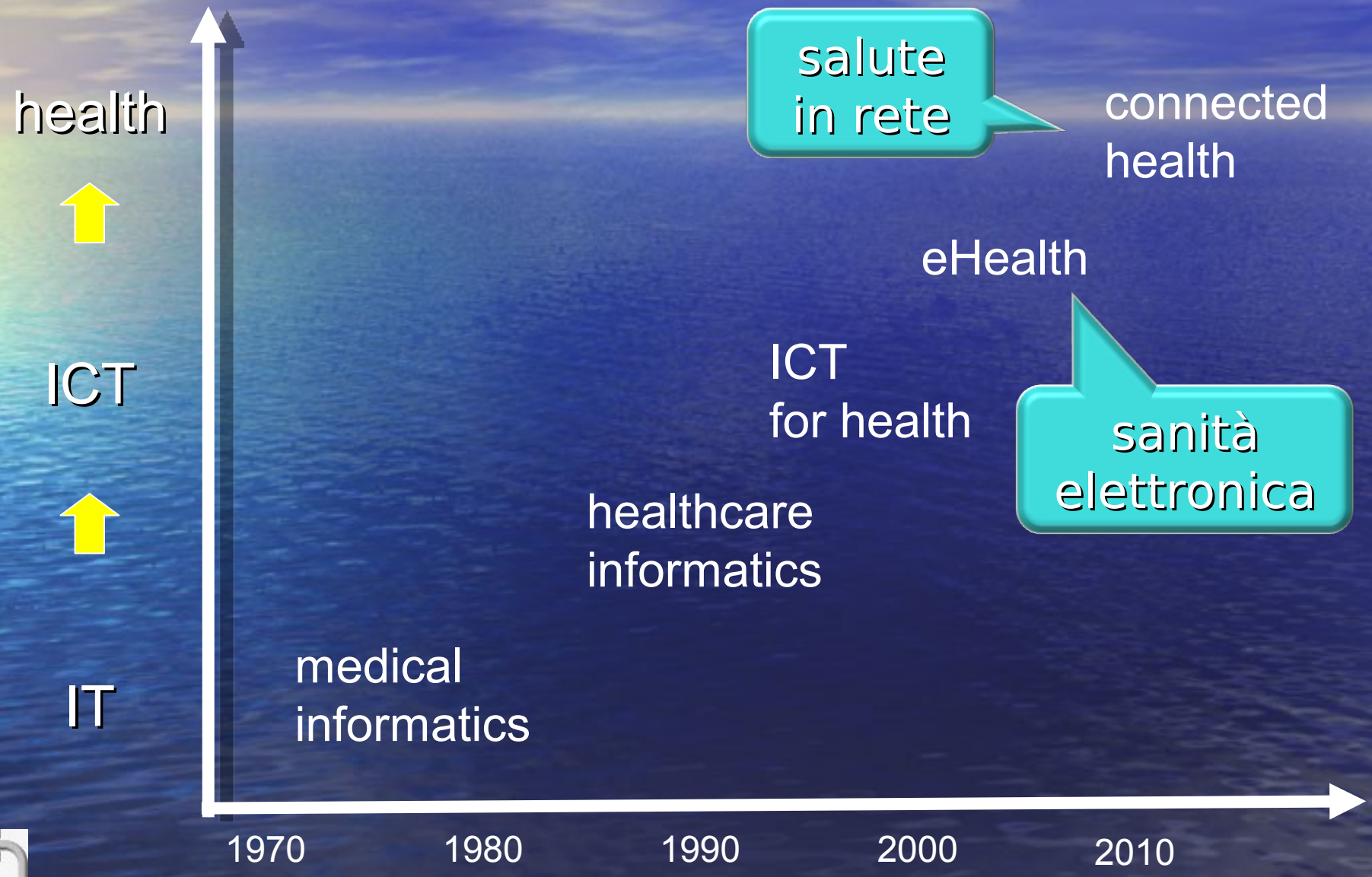
interoperabilità tra sistemi, *cooperabilità* tra persone: il ruolo degli standard

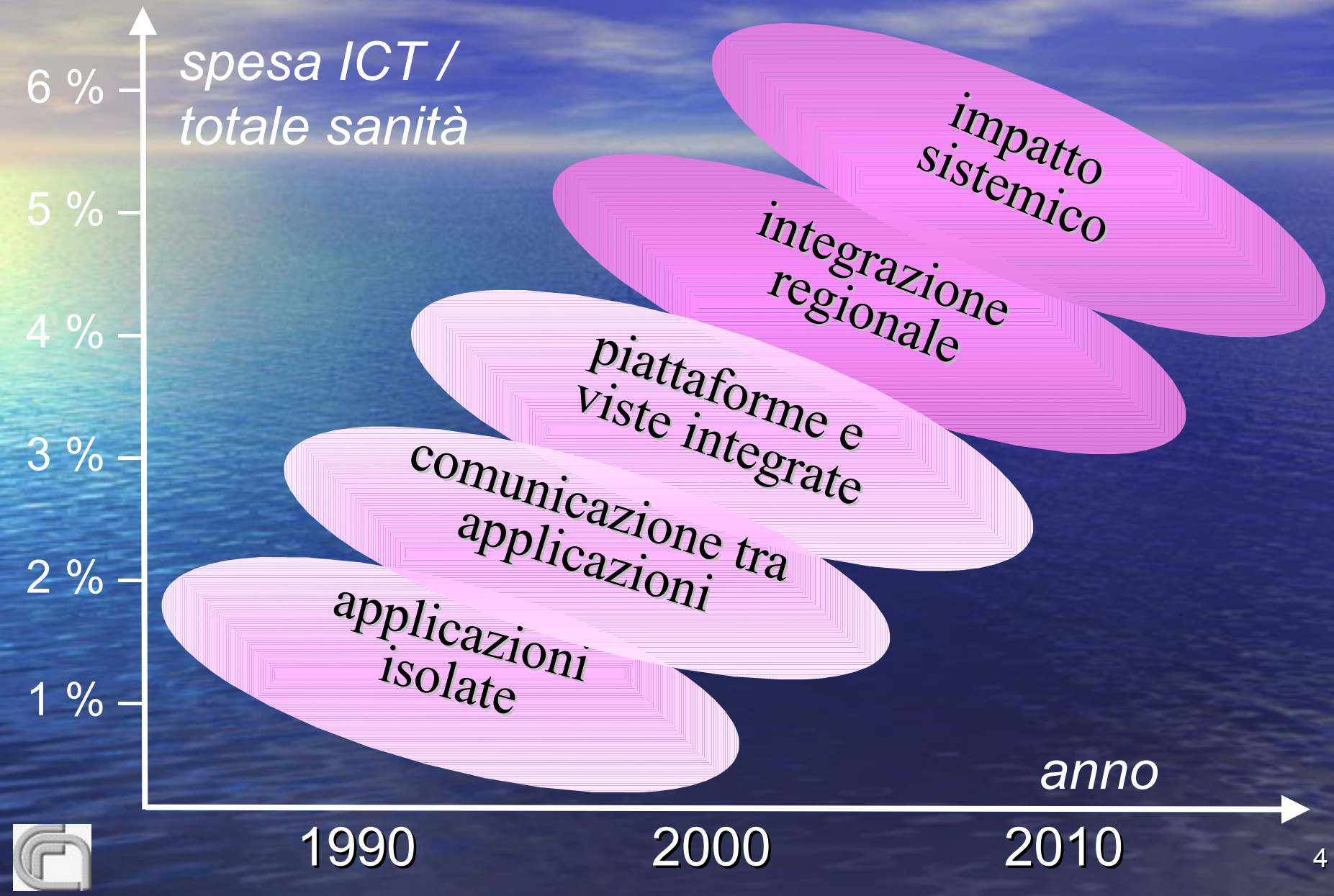
summary

- *towards a "connected health"*
- the context of chronic diseases
- the proactive support to shared care
- sharing structured data
  Patient Summaries and Focused Profiles

nomen omen


health
ICT
IT
salute
in rete
connected
health
eHealth
ICT
for health
sanità
elettronica
healthcare
informatics
medical
informatics
1970
1980
1990
2000
2010

L'evoluzione dell'ICT in sanità



L'evoluzione dell'ICT in sanità

i 4 strati della Salute in Rete

L4 – governance (qualità)
azioni strutturali sul sistema

L3 – processi assistenziali (efficacia)
disease management, patient empowerment, …

L2 – pratiche facili (efficienza)
prenotazioni, referti, prescrizioni, portali, …

L1 – fattori abilitanti
hw, sw, carte, anagrafiche, sicurezza, codifiche, …

L2. migliorare workflow e servizi
a) aumentare l'efficienza

scambio tempestivo di dati e documenti per specifici workflow:

- prescrizione, prenotazione, refertazione
- telecontrollo di apparecchiature remote
- lettere di dimissione
- teleconsulto
- cruscotti per i manager

L2. migliorare workflow e servizi
b) servizi concreti

portali per il pubblico e per gli operatori (ma anche call centre, sportelli unificati, …)

- pagine gialle sui servizi (orari, indirizzi, …)
- informazioni pratiche sulle procedure
- pratiche facili (scelta del medico, protesica e assistenza integrativa, …)
- rendere più fruibili le conoscenze cliniche (siti autorevoli)

L2. sono interazioni a responsabilità "subordinate"

- forme di interazione collaudate e sedimentate nel tempo
- modalità di comunicazione consolidate
- standard di messaggistica (HL7, CEN, ISO) e modulistica predisposta (anche informatizzata)
- **interoperabilità tra sistemi**

L3. supportare i processi clinici: qualità e appropriatezza

impatto su <u>decisioni</u> e <u>comportamenti</u> dei professionisti e dei cittadini

- programmi a supporto di processi innovativi
  - Disease Management
- diffusione e valorizzazione dei registri on-line per patologia
- costruzione di reti per problema sanitario
  - diabete, oncologia, cardiologia, infanzia, anziani

L3. interazioni a responsabilità parallela

- richiedono una "presa in carico" multipla
- responsabilità distribuite
  - tra medici
  - tra medici e altre professioni sanitarie
  - tra operatori socio-sanitari
  - ruolo proattivo del paziente
- ***co-operabilità* tra operatori (e cittadini)**

i motori della salute in rete

attività inter-settoriali
verso la Società dell'Informazione
(es. piani di eGovernment)

evoluzione sostenibile
del settore sanitario,
con il supporto della rete

evoluzione spontanea
del mercato ICT in sanità

L1
infrastrutture

L2
processi
operativi

L3
piani di cura

L4
governance
(clinica)

percorso a tappe
verso la salute in rete

summary

- towards a "connected health"
- *why a focus on chronic diseases*
- the proactive support to shared care
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the next challenge

- chronic conditions account for 3/4 of the healthcare budget
- chronic diseases co-exist frequently in the same individual (elderly people)
  - complex clinical history
- complex and balanced therapy
  - plus changes in lifestyle
- dependent people – informal carers
  - need for social services

un dizionario dati minimale ?

to manage the minimal set
of structured data
to significantly impact
on care provision and governance
of chronic persons
that account for at least 50%
of the health and social care resources

obtain perceived benefits

- buy-in **formal carers**
  by making routinely available relevant data
  for a large amount of patients
- buy-in **managers**
  by providing timely indicators
  to allow for accurate governance
- buy-in **citizens** that experience
  a real continuity of care

the CCM-MICK approach

we focus on

- the Management of Information, Communication and Knowledge (MICK)
- in the Chronic Care Model (CCM) [Wagner 2002]

we consider actors and ICT services in 3 classes of health and social situations

the Management of Information, Communication and Knowledge

he available tools for the MICK:

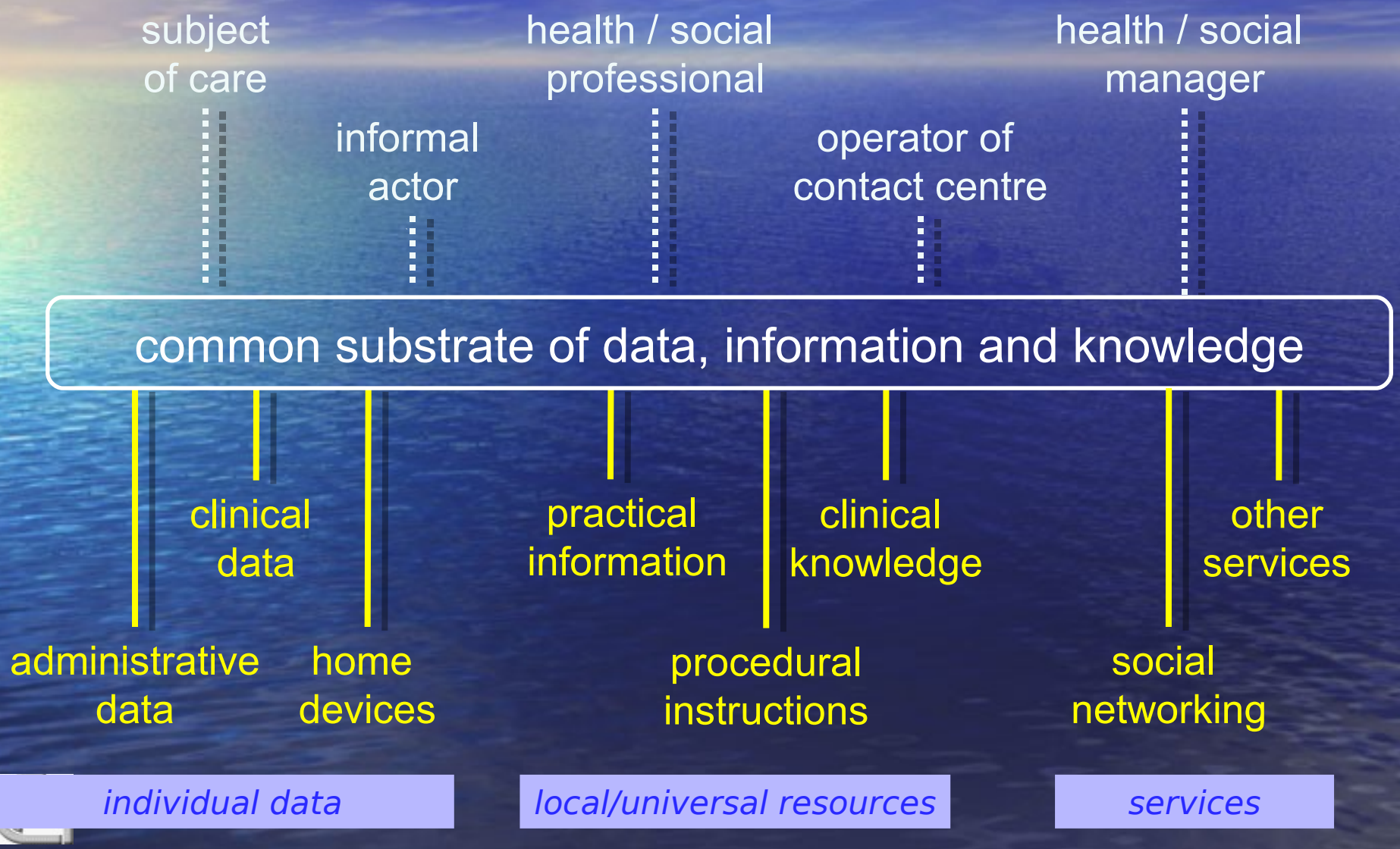
PR of each individual professional

ractical services (booking, reports, …)

nformation portals, also for informal carers

linical knowledge, incl. clinical pathways

MICK – a comprehensive view



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MICK in the Chronic Care Model

each scenario has its own requirements:

٣. pre-clinical situations, regular attention, activate changes in citizen's life styles;

٤. stable conditions, shared care tasks, patient empowerment, care manager;

٥. unpredictable evolving of co-morbidities, triggering and tuning of care activities, ad hoc communication, case manager

1. "regular attention" in pre-clinical situations

- *early stages of chronic diseases*
- *mainly to induce lifestyle changes*

- screen sentinel parameters for early discovery
- register, for a **regular check of parameters** to describe the slow evolution
- e-learning for citizens and informal carers (family, neighbors, volunteers)

2. "shared care tasks" about stable conditions

- *multi-professional assessment*
- *shared plan to define roles and goals of each actor (incl. informal carers)*

ADDITIONAL FEATURES:

- "periodic controls" by multiple professionals
- home devices (perhaps daily measures)
- notify relevant health and social events
- share relevant clinical data

3. frequent tuning of care tasks

- *multiple interacting conditions (complications and co-morbidities)*
- *highly context-dependent decisions*
  - *scarce reuse of data (read once ?)*

ADDITIONAL FEATURES:

- telepresence of professionals
- therapeutic home devices
- synchronisation of professionals
  - shared agenda, communicating ad hoc data

sharing data in stable situations

our minimal goal is to improve continuity of care in stable situations

١. "regular attention" in pre-clinical situations

٢. "shared care tasks" about stable chronic conditions

by facilitating capture and communication of a limited set of high-quality data

sharing of structured data

current trends:

- from the longitudinal EHR infrastructure
  - *life-long patient history*
- to ICT services to synchronize activities
  - *timely sharing of relevant data in shared care*

from "connecting systems" to "connecting people":
send to each actor the data needed for his tasks

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evolution of requirements

- **longitudinal EHR infrastructure:**
  - preserve historical data from birth to death for a sequence of care mandates over time
  - mainly clinical purposes, informative
- **ICT services for shared care:**
  - synchronization of activities by sharing data for a set of simultaneous care mandates
  - also organizational and administrative operational purposes

needs for shared care

	initial idea on EHR	actual needs
main modality	preserving historical data, from birth to death	synchronization of activities: timely sharing of data
objective	informative, clinical (data)	organizational (process)
care mandates	sequence of care mandates over time	coherent set of complementary care mandates

to behave as a system ...

	initial idea on EHR	actual needs for shared care
kinds of clinical documents	any kind of document	notifications of mandates and contacts + a few kinds of documents
internal structure of documents	any format	structured according to suitable agreements (e.g. HL7-CDA R2 + CCD)
functiona-lities	make clinical documents available to authorized users	*first*, process data on mandates and contacts (organisational data items)

create the framework for collaboration

- **Notifications of care mandates**
  WHO is involved? (including informal carers)
- **Notification of contacts**
  WHICH ACTIVITY is actually being performed?
- **Notification of health issues + plans**
  WHY is being done? (orchestrate mutual

Focused Profile: CCD + CDA L3

- a CCD document to share
  a small core set
  of highly meaningful,
  structured data items (CDA level 3)
  for each stable chronic disease
  - for actual care provision and
  - to compute governance indicators
- *suitable for immediate large scale deployment*

which level of semantic detail ?

CDA considers three levels *of standardisation*
in the clinical semantics
in the body of the documents:

- level 1 (basic CDA): no standard on clinical semantics
- level 2 (e.g. CCD): standard about <u>names</u> for headed sections and the <u>structure</u> of clinical statements inside each section
  e.g. patient summary for unexpected contacts
- level 3 (e.g. *emergency data set*) – standards to tell <u>which data items</u> are relevant in particular contexts (e.g. or to pass clinical data in a step of a predefined clinical pathway

Patient Summary - policies and solutions

policy	mobility of citizens		support (chronic) care models		
situation	unexpected contact		predetermined modalities		
	with active care processes	with dormant conditions	suggested follow-up	adopt common care plan	ad hoc referral
solution	cope with ongoing plan	read (once) past history	finalize care plan	synchronize with the others	transfer of mandate
data	current problems +ongoing plan	emergency data set	latest acts+ suggested plan	life cycles of procedures	ad hoc referral letter

plus list of events, medications, test results, allergies …

variants of patient summary

thanks

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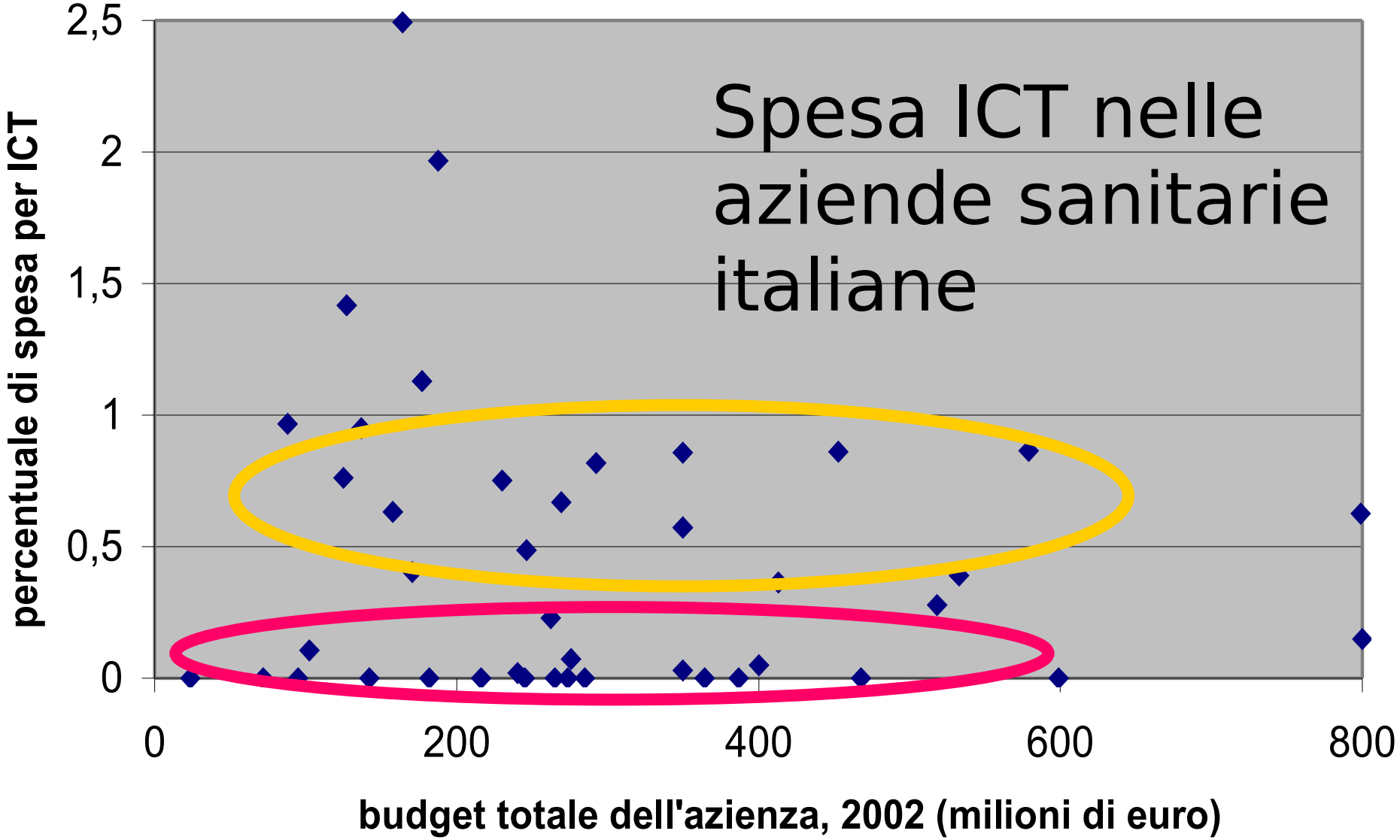
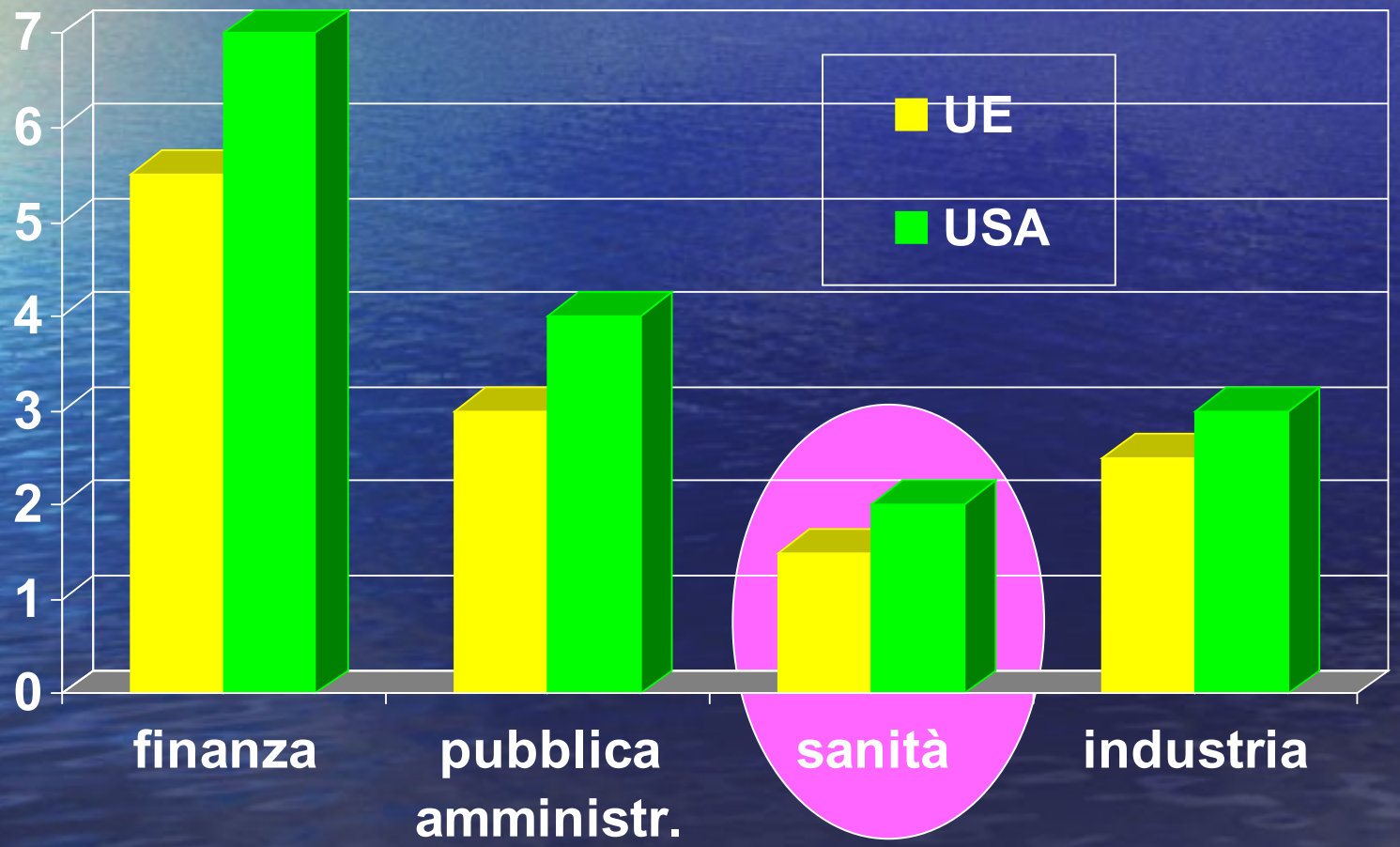
Italia -una situazione scoraggiante



il paradosso della sanità

il settore più complesso, la spesa più bassa …

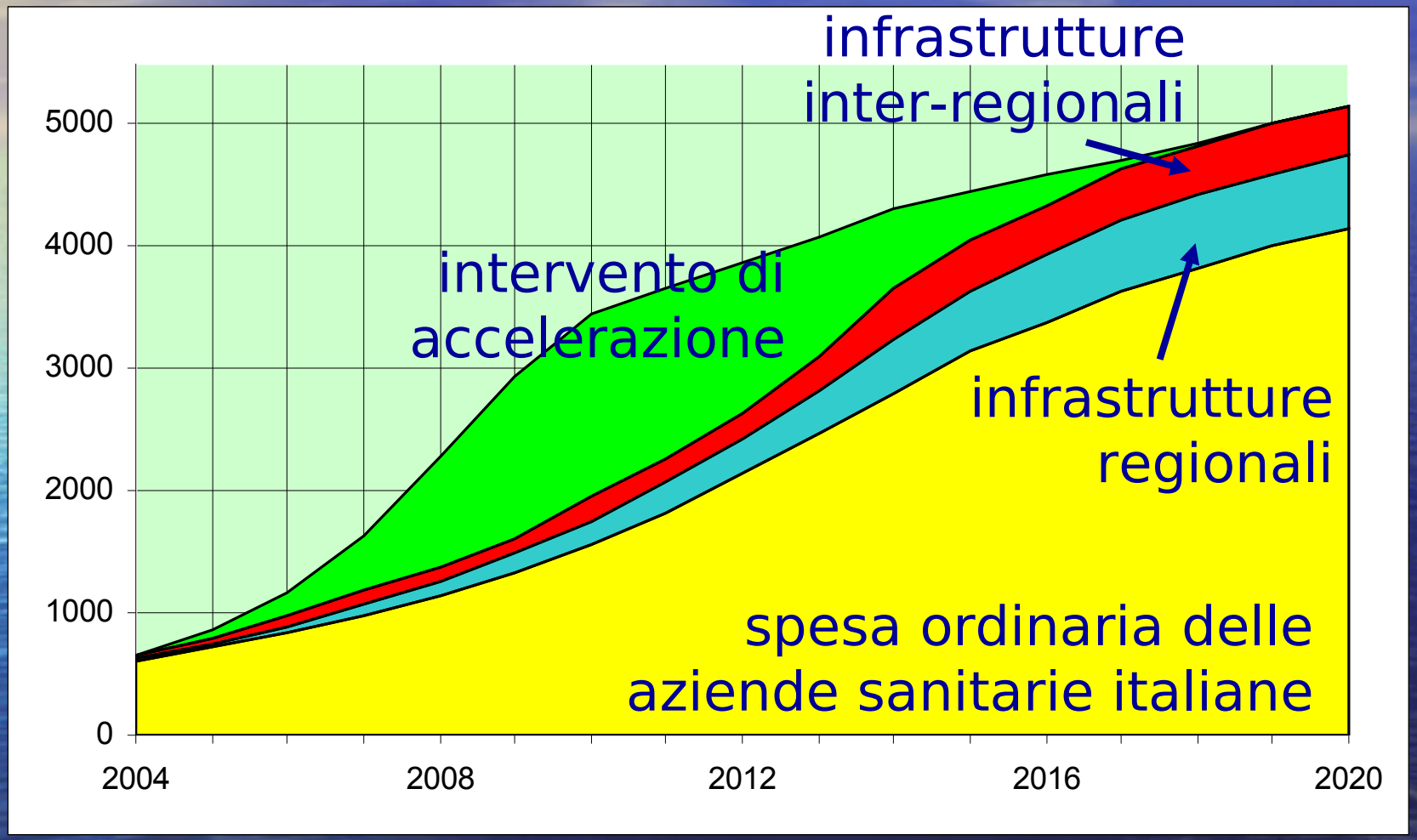
% della spesa complessiva impiegato in ICT (PwC, 1998)



interventi strutturali

- 3000 nuovi addetti IC(t) in 5 anni
  - per ASL/AO, regioni, strutture inter-regionali
  - per rinforzare L1, L2 – costruire L3, L4
  - formazione e addestramento (master, dottorati, gemellaggi tra ASL)
- visione, roadmap e forte coordinamento
  - sostenere un "movimento" e riuso molti-a-molti (disseminare documenti di consenso)
- co-finanziare progetti mirati alle criticità
  - conoscenze autorevoli in rete, dataset, percorsi assistenziali, terminologia clinica

gli ordini di grandezza in gioco



in milioni di euro / anno