

## “referto”/risposta del Laboratorio problematiche della fase postanalitica

Marco Pradella  
 Castelfranco Veneto

... per saperne di più ...

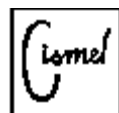


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[www.SIMEL.it](http://www.SIMEL.it)

- gruppo Informatica
- gruppo Risk Management
- news: standard - linee guida



### Flusso operativo del laboratorio

Pre-analitica	Analitica	Post-analitica
richiesta (order)  preparazione paziente  raccolta  trasporto e conservazione  ricezione	analisi e revisione  interpretazione di laboratorio	<b>risposta</b> <i>(revisione            formattazione,            consulenza, ulteriori            procedure...)</i>  conservazione del campione

ISO 15189:2002  
 NCCLS GP26-A2

### fase post-analitica: sommario

- teleconsulto
- archivi: ISO/DTS N266
- patologia della risposta
- flusso (workflow)
- decalogo

### MIT direttiva 2004 - email



- d) efficienza delle amministrazioni: posta elettronica, documento elettronico.
- La diffusione della posta elettronica e dell'utilizzo di documenti elettronici e' presupposto indispensabile alla migliore efficienza interna. Ogni amministrazione dovrà, pertanto, dedicare rinnovato impegno a questo tema, realizzando in particolare quanto specificato nella emananda direttiva (casella di posta elettronica in dotazione a tutti i dipendenti, attivazione e utilizzo costante e tempestivo di caselle istituzionali, utilizzo interno della posta elettronica almeno in tutti i casi citati, utilizzo di posta elettronica certificata, ecc.).

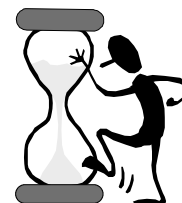


• Il progetto @P@, curato dal CNIPA, rappresenta per tutte le amministrazioni statali il punto di riferimento per ogni iniziativa, sia per quanto riguarda la partecipazione alle iniziative comuni (posta certificata, indice P.A.), sia per quanto riguarda il sostegno ai progetti specifici di ogni amministrazione.

### medicina in posta elettronica: il tempo



- ...We find e-mail enquiries useful, since test results can be presented efficiently, saving clinical time and allowing a prompt, appropriate response...



Gordon C, Krimholtz M. E-mail and patients:  
 a medicolegal minefield. *Lancet*  
 2003;362:1768

## posta elettronica: la soddisfazione



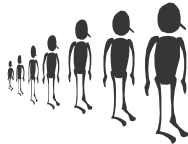
- GPs welcome feedback
  - Jiwa M, Walters S, Mathers N. Referral letters to colorectal surgeons: the impact of peer-mediated feedback. *Br J Gen Pract.* 2004 Feb;54(499):123-6.
- GP satisfaction was high. Forty four per cent of the neurologist's time was saved compared with conventional consultation.
  - Patterson V, Humphreys J, Chua R. Email triage of new neurological outpatient referrals from general practice. *J Neurol Neurosurg Psychiatry.* 2004 Apr;75(4):617-20.
- ... digital camera ... transmitted by email ... Referral was judged to be beneficial in 24 cases (89%)
  - Vassallo DJ, Hoque F, Roberts MF, Patterson V, Swinfen P, Swinfen R. An evaluation of the first year's experience with a low-cost telemedicine link. in Bangladesh. *J Telemed Telecare.* 2001;7(3):125-38

## email col paziente: efficacia

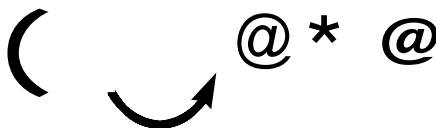


- once physicians and patients become comfortable with it, mutual satisfaction seems inevitable
  - Joseph E. Scherger, MD, MPH. Online Communication With Patients: Making It Work. *Fam Pract Manag* 11(4):73-74, 2004. <http://www.medscape.com/viewarticle/473693>
- asynchronous medium, email enables correspondents to respond at their own convenience in a time effective manner, averaging four minutes per email in one study... avoids the need to return missed telephone calls... cost effective ... less intimidating
  - R Al-Shahi, M Sadler, G Rees and D Bateman. The internet. *Journal of Neurology Neurosurgery and Psychiatry* 2002;73:619-628

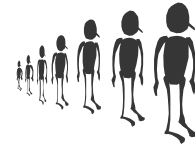
## email e liste di attesa?



- consulenza specialistica
- consulto incrociato, verifica informazioni
- efficacia



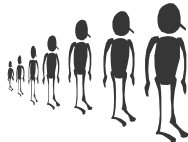
## email e liste di attesa?



- consulenza specialistica
- consulto incrociato, verifica informazioni
- efficacia



## email e liste di attesa?



- consulenza specialistica
- consulto incrociato, verifica informazioni
- efficacia



## UK: laboratori e contratto dei medici di famiglia

• P J Twomey, A S Wierzbicki and T M Reynolds. Chemical pathology and the new contract for GPs. *Journal of Clinical Pathology* 2004;57:1022-1024

- **Clinical quality indicators comprise 550 of the 1050 points and 91 directly involve results of tests carried out in chemical pathology**
- **at least 33 points indirectly involve chemical pathology laboratories**
- **preanalytical, analytical, and postanalytical phases. Increased general practice requesting will present challenges at all three levels**

**Table 1 Clinical indicators, targets, maximum thresholds, and points for achieving targets that directly affect chemical pathology laboratories**  
Annex A code Clinical indicator and target Maximum threshold Points

(P J Twomey1, A S Wierzbicki2 and T M Reynolds. Chemical pathology and the new contract for GPs. *Journal of Clinical Pathology* 2004;57:1022-1024)

- CHD 7 The percentage of patients with CHD whose notes have a record of total cholesterol in the previous 15 months 90% 7  
 CHD 8 The percentage of patients with CHD whose last measured total cholesterol (measured in the last 15 months) is 5 mmol/l or less 60% 16  
 Stroke 7 The percentage of patients with TIA or stroke who have a record of total cholesterol in the past 15 months 90% 2  
 Stroke 8 The percentage of patients with TIA or stroke whose last measured total cholesterol (measured in the past 15 months) is 5 mmol/l or less 60% 5  
 DM 5 The percentage of patients with diabetes who have a record of HbA1C or equivalent in the past 15 months 90% 3  
 DM 6 The percentage of patients with diabetes in whom the last HbA1C was 7.4 or less in the past 15 months 50% 16  
 DM 7 The percentage of patients with diabetes in whom the last HbA1C was 10.0 or less in the past 15 months 85% 11  
 DM 13 The percentage of patients with diabetes who have a record of microalbuminuria testing in the past 15 months (exception, reporting for patients with proteinuria) 90% 3  
 DM 14 The percentage of patients with diabetes who have a record of serum creatinine testing in the past 15 months 90% 3  
 DM 16 The percentage of patients with diabetes who have a record of total cholesterol in the past 15 months 90% 3  
 DM 17 The percentage of patients with diabetes whose last measured total cholesterol within the past 15 months was 5 or less 60% 6  
 Thyroid 2 The percentage of patients with hypothyroidism with thyroid function tests recorded in the past 15 months 90% 6  
 MH 3 The percentage of patients on lithium treatment with a record of lithium concentrations checked within the past 6 months 90% 3  
 MH 4 The percentage of patients on lithium treatment with a record of serum creatinine and TSH in the preceding 15 months 90% 3  
 MH 5 The percentage of patients on lithium treatment with a record of lithium concentrations in the therapeutic range within the past 6 months 70% 5

**Table 2 Clinical indicators, targets, maximum thresholds, and points for achieving targets that will probably indirectly affect chemical pathology laboratories**  
Annex A code Clinical indicator and target Maximum threshold Points

(P J Twomey1, A S Wierzbicki2 and T M Reynolds. Chemical pathology and the new contract for GPs. *Journal of Clinical Pathology* 2004;57:1022-1024)

- CHD 11 The percentage of patients with a history of myocardial infarction (diagnosed after 1 April 2003) who are currently treated with an ACE inhibitor 70% 7  
 LVD 3 The percentage of patients with a diagnosis of CHD and left ventricular dysfunction who are currently treated with ACE inhibitors (or A2 antagonists) 70% 10  
 BP 1 The practice can produce a register of patients with established hypertension 9  
 DM 15 The percentage of patients with diabetes with proteinuria or microalbuminuria who are treated with ACE inhibitors (or A2 antagonists) 70% 3  
 Epilepsy 3 The percentage of patients aged 16 and over on drug treatment for epilepsy who have a record of medication review in the previous 15 months 90% 4

## GPs e fase pre-analitica

• P J Twomey1, A S Wierzbicki2 and T M Reynolds. Chemical pathology and the new contract for GPs. *Journal of Clinical Pathology* 2004;57:1022-1024

- Multidiscipline forms
- document what tests have been requested
- reduce the number of errors, produce an audit trail,
- frequency of collections
- weekday delivery after 16:00

## GPs e fase post-analitica

• P J Twomey1, A S Wierzbicki2 and T M Reynolds. Chemical pathology and the new contract for GPs. *Journal of Clinical Pathology* 2004;57:1022-1024

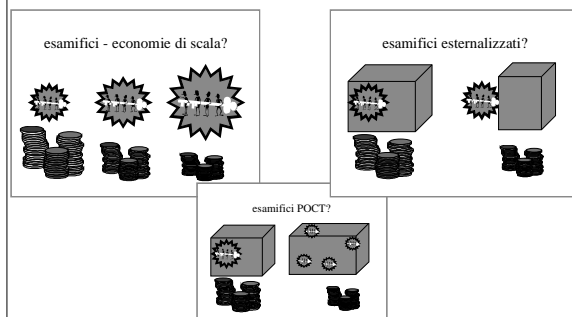
- recording within primary care of specific results
- Lack of patient compliance for phlebotomy and medication
- call/recall systems in advance of the required time span
- results from secondary care transferred to primary care
- encryption of personal information
- reporting of grossly abnormal results
- reporting of results after 17:00
- out of hours service (after 18:30)
- increased requirement for clinical liaison, clinical advice, and clinical audit

## contratto GPs: le conseguenze

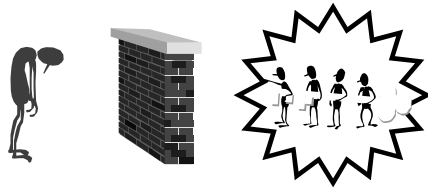
• P J Twomey1, A S Wierzbicki2 and T M Reynolds. Chemical pathology and the new contract for GPs. *Journal of Clinical Pathology* 2004;57:1022-1024

- chemical pathology will probably have a large **increase in workload** as a result of the new GMS contract. ... important consequences on **staffing levels, instrumentation, and the financial requirements** involved. ... financial implications for chemical pathology laboratories and it is not clear where this **extra funding** will come from.
- ... ensure that **excellent IT links** exist between laboratory information system and general practitioner IT systems. ... However, technological advances also cost money and, as with the increased requesting, it is not clear whether **extra money** will be available to pay for this, especially because some see laboratories as already being "awash with modern IT systems".

## laboratori o esamifici?



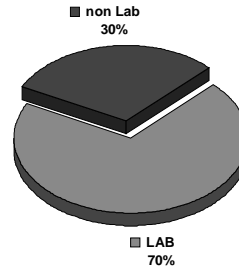
### esamifici: sindrome non-non?



Pradella M. Italian laboratories - neither one thing, nor the other. The neither-nor syndrome. Acp news 2003;Spring:13-4

### dimensioni del fenomeno

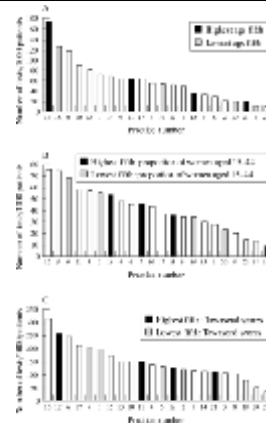
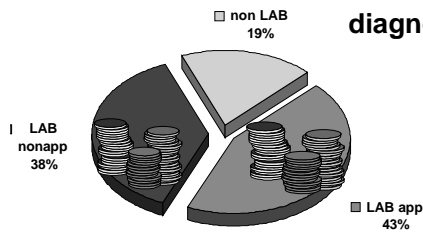
#### diagnosi



The role of the private sector in the NHS. Paragraph 141. <http://www.parliament.thestationary-office.co.uk/pa/cm200102/cmselect/cmhealth/308/30802.htm>

### dimensioni del fenomeno

#### diagnosi

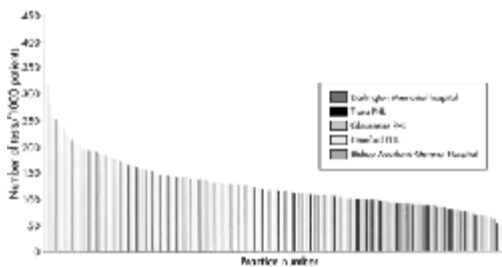


W S A Smellie, M J Galloway, D Chinn and P Gedling. Is clinical practice variability the major reason for differences in pathology requesting patterns in general practice? Journal of Clinical Pathology 2002;55:312-314

Figure 1 (A) proportions of patients aged 65 or over for blood glucose requests, (B) proportion of women aged 15-44 as a percentage of total list size for vaginal swab analysis, and (C) Townsend deprivation scores for creatinine/electrolyte requests, in a cohort of 22 general practices serving a population of 165 000 patients.

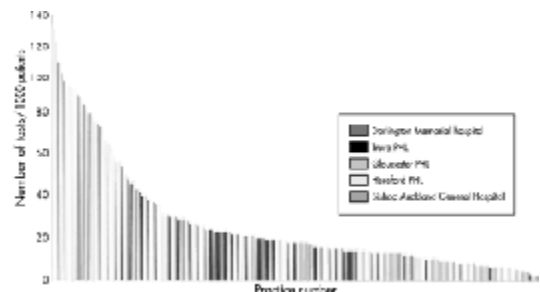
W S A Smellie, G Clark and C A McNulty. Inequalities of primary care microbiology testing between hospital catchment areas. Journal of Clinical Pathology 2003;56:933-936

Figure 1 Standardised urine microscopy and culture requests from 174 general practices



W S A Smellie, G Clark and C A McNulty. Inequalities of primary care microbiology testing between hospital catchment areas. Journal of Clinical Pathology 2003;56:933-936

Figure 2 Standardised wound/ulcer swab culture requests from 174 general practices



Trust	Hospital	Hospital	Hospital	Hospital	Hospital
133 (29-384)	4 (2-6)	25 (25-110)	Dorchester	22 (21-22)	4 (2-6)
148 (49-253)	3 (2-4)	53 (7-131)	Haverhill	22 (21-23)	3 (2-4)
153 (61-198)	4 (2-6)	31 (3-58)	Mass	25 (11-36)	3 (2-4)
157 (25-168)	Trust	5 (4-6)	E. Andover	21 (20-22)	Trust
174 (15-178)	Trust	5 (2-9)	E. Andover	19 (18-20)	Trust
27 (12-17)	Trust	10 (2-21)	Gloster	17 (16-18)	Trust
33 (20-121)	Trust	4 (4-9)	Gloster	15 (14-16)	Trust
$p < 0.000001$		$p < 0.000001$		$p < 0.000001$	
Trust	Hospital	Hospital	Hospital	Hospital	Hospital
11 (4-8)	3 (2-4)	4 (2-7)	Haverhill	25 (18-33)	Haverhill
12 (1-5)	Trust	7 (2-17)	E. Andover	18 (10-31)	3 (2-4)
4 (2-8)	Trust	5 (2-9)	Trust	14 (11-17)	3 (2-4)
7 (2-8)	Trust	3 (2-5)	Trust	15 (10-20)	Trust
N.A.	Dorchester	5 (2-10)	Dorchester	12 (9-15)	Dorchester
N.A.	Trust	4 (1-10)	Gloster	8 (6-10)	Trust
N.A.	Trust	3 (2-7)	Gloster	10 (4-17)	Trust
N.A.	Trust	2 (2-7)	Gloster	6 (5-7)	Trust
$p < 0.64$		$p < 0.000001$		$p < 0.000001$	

W S A Smellie, G Clark and C A M McNulty. Inequalities of primary care microbiology testing between hospital catchment areas. *Journal of Clinical Pathology* 2003;56:933-936.

Figure 3 Median numbers of tests for each 1000 general practice list patients

W S A Smellie, M J Galloway, D Chinn and P Gedling. Is clinical practice variability the major reason for differences in pathology requesting patterns in general practice? *Journal of Clinical Pathology* 2002;55:312-314

#### Take home messages

- The large differences observed in general practice pathology requesting probably result mostly from individual variation in clinical practice
- Thus, peer review within the clinical governance framework of the primary care groups has the potential to modulate requesting, improve appropriateness, and target available resources more effectively, given suitable means of intervention

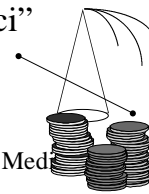
W S A Smellie, G Clark and C A M McNulty. Inequalities of primary care microbiology testing between hospital catchment areas. *Journal of Clinical Pathology* 2003;56:933-936

#### Take home messages

- There were large differences in the numbers of microbiology tests requested both within individual trust catchment areas in primary care and also between trusts
- Large and significant differences were found between hospitals, irrespective of whether they belonged to the same trust, and irrespective of their geographical location
- These inequalities may introduce a selection bias into epidemiological and antibiotic resistance surveillance
- The reasons for these differences should be investigated and dealt with

### esami "esoterici"

- St. John's Health System
- NYU Medical Center
- Rush-Presbyterian St. Luke's Medical Center
- Polly Ryan Memorial Hospital, Richmond, Texas



Karen Lusky. Esoteric tests lighten hospital labs' wallets. *CAP Today* July 2003

### filtro per esami "esoterici"

- sospetto diagnostico e motivi urgenza indispensabilità - codice tariffario
- verifica dati disponibili
- richiesta al prescrittore
- verifica finale

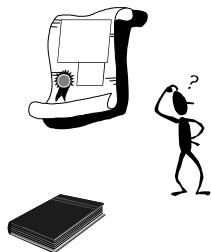


### esami "esoterici" frequenti

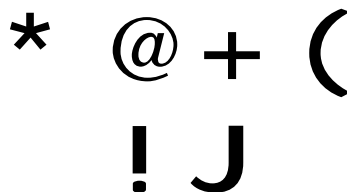
- anticorpi anti virus (pneumotropi, neurotropi, cardiotropi) e anti legionella
- sottoclassi delle IgG
- nuovi antiepilettici
- sali biliari
- lipoproteina (a)
- epatite delta
- catecolamine plasmatiche
- IgE per farmaci
- n-acetilglucosaminidasi
- CA-50
- SHBG
- estrone
- diidrotestosterone
- lipidogramma
- Waller-Rose
- ACE
- BNP
- ADH
- acido sialico

## base di conoscenza

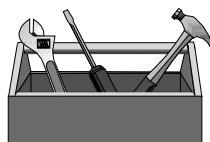
- linee guida
- clinici specialisti
- letteratura



## risposte del prescrittore



## strumenti comunicazione elettronica

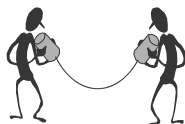


## linee guida posta elettronica in medicina



- BEVERLEY KANE, MD, AND DANIEL Z. SANDS, MD, MPH, for the AMIA Internet Working Group, Task Force on Guidelines for the Use of Clinic--Patient Electronic Mail. *Guidelines for the Clinical Use of Electronic Mail with Patients. Journal of the American Medical Informatics Association, Volume 5, Number 1, Jan/Feb 1998*
- [http://www.amia.org/pubs/other/email\\_guidelines.html](http://www.amia.org/pubs/other/email_guidelines.html)

## Electronic Mail - responsabilità condivise



- stabilire scopo scambio email
- stabilire tempo di risposta (medico e paziente)
- evitare ira, sarcasmo, critiche, riferimenti ironici a terzi
- crittografia per proteggere privacy

## Electronic Mail - responsabilità medico



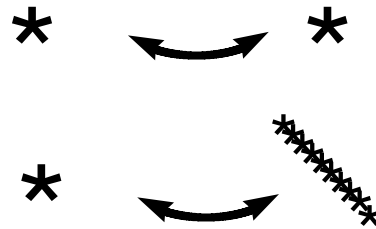
- consapevolezza paziente elementi sicurezza e riservatezza
- consenso informato
- protezione email posta in arrivo e screensaver con pw
- non distribuire indirizzo email a terzi
- usare marchio-firma elettronica e testatina con avviso privacy
- risposta automatica per conferma ricezione-lettura
- allegare stampa email in cartella
- back-up settimanale
- mantenere mailing list per annunci collettivi (problemi tecnici)

### Electronic Mail - responsabilità paziente

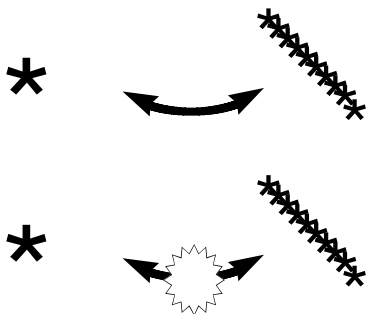
- classificare messaggio con oggetto
- usare informazioni identificative (tessera sanitaria, numero ricovero) nel corpo
- usare marchio-firma elettronica
- comunicare ricezione della risposta del medico



### email personale e collettiva



### email collettiva e mail list



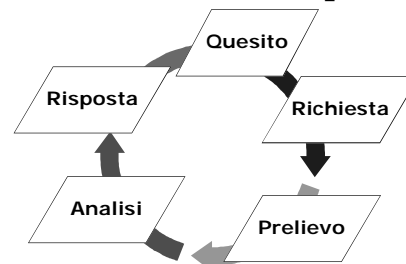
### fase post-analitica: sommario

- teleconsulto
- circolazione informazioni
- archivi: ISO/DIS N266
- patologia della risposta
- flusso (workflow)
- decalogo

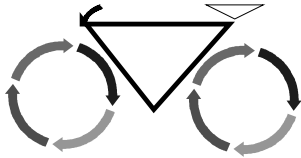
### circolazione dei dati

- ciclo richiesta-risposta
- strumenti per connettività: gli standard
- colmare il "gap" della standardizzazione
- accelerazione in UK
- nuovi temi, fuori dal seminato

### il ciclo richiesta-risposta



## il ciclo richiesta-risposta



## The Request-Report Cycle

## The Request-Report Cycle: Are the wheels coming off?



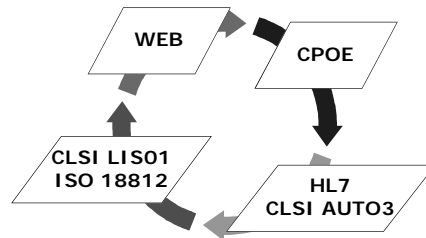
*Dr Jonathan Kay*  
*jonathan.kay@ndcls.ox.ac.uk*

CPD4IT 'Getting ahead of the IT Curve'  
Monday, 18 October 2004

## circolazione dei dati

- ciclo richiesta-risposta
- **strumenti per connettività: gli standard**
- colmare il "gap" della standardizzazione
- accelerazione in UK
- nuovi temi, fuori dal seminato

## "... connettività ..."



## ?... chiavi in mano ...?



## geografia della normazione

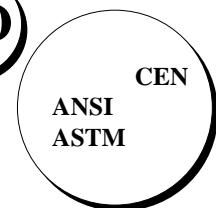
[www.ANSI.org](http://www.ANSI.org)

[www.ASTM.org](http://www.ASTM.org)

[www.ISO.org](http://www.ISO.org)

[www.CENORM.be](http://www.CENORM.be)

[www.UNI.com](http://www.UNI.com)



## CISMEL

Comitato Italiano  
per la  
Standardizzazione  
dei Metodi  
Ematologici e di  
Laboratorio



www.CISMEL.it



COMMISSIONE INFORMATICA MEDICA

<http://web.uni.com/settoretecnico/ct/informaticamedica/home.shtml>

### CAMPO DI ATTIVITÀ

Aspetti tecnico-informatici nel settore medico, con particolare riguardo a terminologia, modello dei dati, formato dei messaggi, strumentazione, strategie e aspetti non tecnologici, tipo etico-legali, sicurezza, riservatezza e qualità

TC CEN DI COMPETENZA TC 251 Informatica medica

TC ISO DI COMPETENZA TC 215 Informatica medica

## Recenti per Informatica

- prEN 14720:2003 service request report
- prEN 12251:2003 password
- ISO/IS 17113:2004 sviluppo messaggi
- ISO/IEC 18812:2003 interfaccia analizzatore
- ISO/DIS 17115:2005 vocabulary
- ISO/IEC 17799:2005 security
- prEN 12264:2005 strutture concetti
- prEN 1614:2004 nomenclatura laboratorio

## CLSI-NCCLS - Laboratory automation

- AUTO1 contenitore carrier
- AUTO2 codice barre
- AUTO3 comunicazioni strumenti
- AUTO4 cruscotto sistemi
- AUTO5 interfacce elettromeccaniche
- AUTO6 poct (ora POCT01)
- AUTO7 identificazione campione
- AUTO8 validazione LIS
- AUTO9 accesso remoto internet
- LIS01 interfaccia strumento
- POCT01 connettività point-of-care

## ISO/IS 17113:2004 Method for Development of Messages *ISO TC215 WG2 methodology break out group*



- basato su
  - ISO 1087 "Terminology Vocabulary"
  - ENV 12264 "... representation of semantics"
- definizioni
  - actor ... association ... class ... domain ...
  - object ... reference information model ...

## CEN-TC 251: prEN 1614:2004



Health informatics - Structure for nomenclature, classification, and coding of properties in clinical laboratory sciences (*novembre 2004*)

- "... The need ... increasing need for reliable communication between laboratory information systems and between laboratory and other health information systems. Previous work ... motivated by restricted purposes such as reimbursement ... not included critical analysis of the basic concepts and their relationships to existing standards and recommendations ..."

## CEN-TC 251: prEN 1614:2004



Health informatics - Structure for nomenclature, classification, and coding of properties in clinical laboratory sciences (novembre 2004)

- “... bisogno di comunicazioni affidabili tra sistemi informatici di laboratorio e altri sistemi informatici. Gli strumenti precedenti... finalizzati a scopi specifici come il ~~tariffario~~, mancano di una analisi critica dei concetti base e delle relazioni con gli standard esistenti e le raccomandazioni...”

## prEN 1614: nomenclatura sistematica, ponte tra dialetti locali



## prEN 1614: nomenclatura

- NO
    - “test” “dosaggio” “procedura di laboratorio”
  - SI
    - concetti metrologici
      - proprietà - caratteristica
      - quantità
      - sistema
      - componente
      - supersistema
- altri contenuti:*
- formato XML
  - Appendice A: IUPAC/IFCC - CQU(CC) Quantità e unità
  - Appendice B: nome sistematico di una proprietà
    - sistema
    - componente
    - proprietà / quantità
  - Appendice C: vocabolario terminologico
    - Es: scala nominale, ordinale, differenza, rapporto



## EN ISO 18812:2003

- Health informatics - Clinical analyser interfaces to laboratory information systems - Use profiles
  - “... AIs are mainly used in hospital laboratories to analyse samples from patients. Most of these are interfaced to LISs that process the result data and produce reports for use by healthcare practitioners. In the absence of standards for the interface, each LIS supplier has to write a ~~new~~ interface for each new analytical instrument. The cost of writing these interfaces can amount to between 10 % and 20 % of the total cost of the LIS. One of the most effective ways of reducing this cost is to implement a standard interface between the AI and the LIS...”



## EN ISO 18812:2003 analyser interfaces - ASTM E1394

- A.2.2 Profiles of ASTM E1394
  - “... The ASTM E1394 standard was originally written to allow almost any type of AI to communicate with any type of LIS for almost any purpose. This has been its strength, the fact that it can be used in any situation. It has also been its weakness in that every implementation is different and cannot easily work with a different implementation. However, most implementations only need a limited range of the information that can be carried in ASTM E1394, and only need it for a limited number of purposes...”



## EN ISO 18812:2003 esempi di messaggi

<i>Message examples:</i>	<i>or:</i>
H \^&	H \^&
P 1	P 1
O 1  235	O 1  ^34
R 1 ^^^GLU 5.5	R 1 ^^^NA 139 mmol/L
L 1 N	R 2 ^^^K 4.2 mmol/L
	R 3 ^^^CL 111 mmol/L
	P 2
	O 1  ^35
	R 1 ^^^K 4.8 mmol/L
	L 1 N



## CLSI-NCCLS - Laboratory automation

- AUTO1 contenitore carrier
- AUTO2 codice barre
- AUTO3 comunicazioni strumenti
- AUTO4 cruscotto sistemi
- AUTO5 interfaccia elettromeccaniche
- AUTO6 poct (ora POCT01)
- AUTO7 identificazione campione
- AUTO8 validazione LIS
- AUTO9 accesso remoto internet
- LIS01 interfaccia strumento
- **POCT01 connettività point-of-care**

## POCT1-A - Point-of-Care Connectivity; Approved Standard

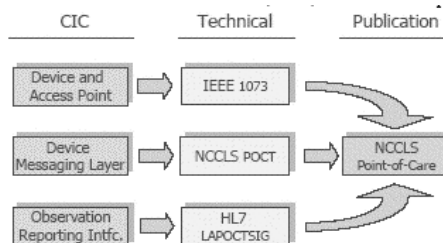
- This document provides the framework for engineers to design devices, work stations, and interfaces that allow multiple types and brands of point-of-care devices to communicate bidirectionally with access points, data managers, and laboratory information systems from a variety of vendors.

## Il progetto CIC

- In February 2000, 49 healthcare institutions, point-of-care diagnostic vendors, diagnostic test system vendors, and system integrators formed the Connectivity Industry Consortium (CIC) to address this point-of-care diagnostic integration problem. The CIC Board of Directors created the following statement to guide the CIC work teams:
  - "The vision of the CIC is to expeditiously develop, pilot, and transfer the foundation for a set of seamless 'plug-and-play' POC communication standards ensuring fulfillment of the critical user requirements of bidirectionality, device connection commonality, commercial software interoperability, security, and QC / regulatory compliance."



## . . . da CIC a POCT1



## Esempio di messaggio POCT1

```

<?xml version="1.0" encoding="UTF-8"?>
<DOCTYPE OBS.R01 SYSTEM "OBS.R01.dtd">
<OBS.R01>
  <HDR>
    <HDR.control_id V="10003"/>
    <HDR.version_id V="POCT1"/>
    <HDR.creation_dttm V="2001-11-01T16:30:06-08:00"/>
  </HDR>
  <SVC>
    <SVC.role_cd V="OBS"/>
    <SVC.observation_dttm V="2001-11-01T16:29:54-08:00"/>
    <SVC.status_cd V="NRM"/>
    <SVC.reason_cd V="NEW"/>
    <SVC.sequence_nbr V="2524"/>
    <PT>
      <PT.patient_id V="PT222-55-7777"/>
      <PT.location V="ICU-4"/>
      <PT.name V="Jan Patient">
        <GIW V="Janet"/>
        <FAM V="Patient"/>
      </PT.name>
      <PT.birth_date V="1960-08-29"/>
      <PT.gender_cd V="F"/>
      <PT.weight V="110" U="lbs"/>
      <PT.height V="66" U="inches"/>
    </PT>
    <OBS>
      <OBS.observation_id V="1517-2" SN="LN" DN="Glucose"/>
      <OBS.value V="85" U="mg/dL"/>
      <OBS.method_cd V="M"/>
      <OBS.status_cd V="A"/>
    </OBS>
  </SVC>
</OBS.R01>

```

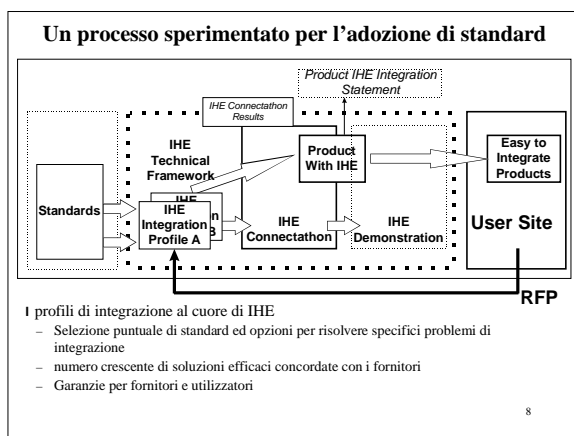
## circolazione dei dati

- ciclo richiesta-risposta
- strumenti per connettività: gli standard
- **colmare il "gap" della standardizzazione**
- accelerazione in UK
- nuovi temi, fuori dal seminato



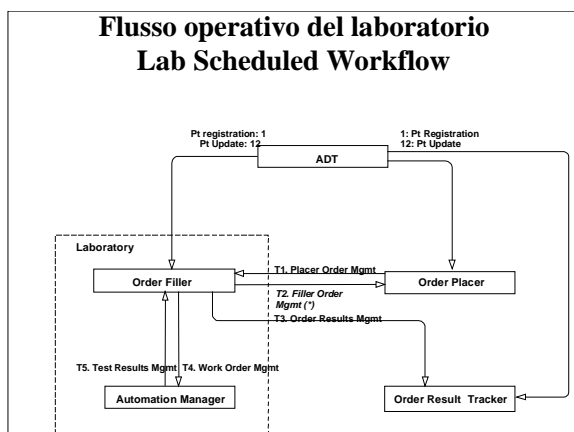
## IHE norma guida

- iniziativa per promuovere l'integrazione dei sistemi informativi sanitari
- progetto sponsorizzato da RSNA, Radiological Society of North America e da HIMSS, Healthcare Information and Management Systems Society
- raccoglie gli sforzi congiunti di professionisti della sanità e produttori di apparecchiature diagnostiche, tesi **all'individuazione, alla documentazione ed alla dimostrazione di metodi standard di condivisione delle informazioni**, a supporto di una migliore assistenza sanitaria per il paziente.



## Profili di integrazione

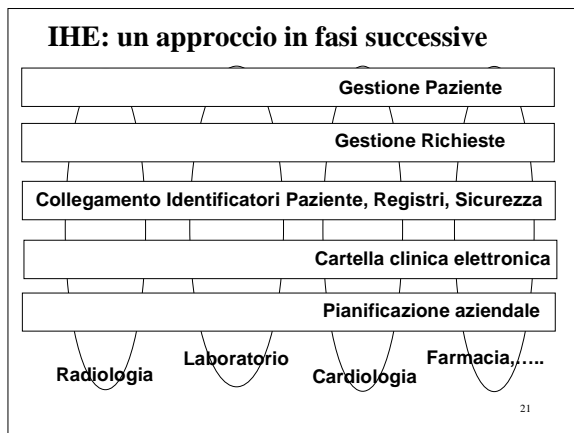
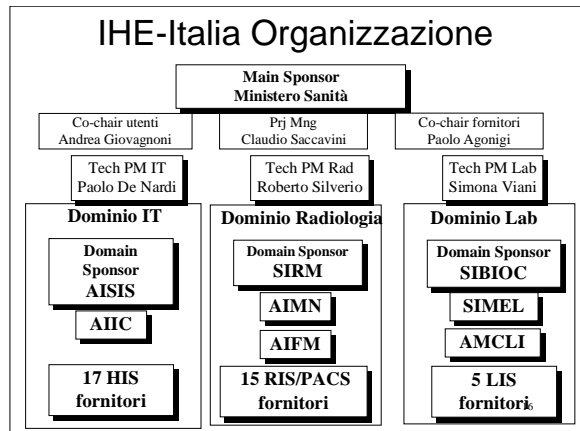
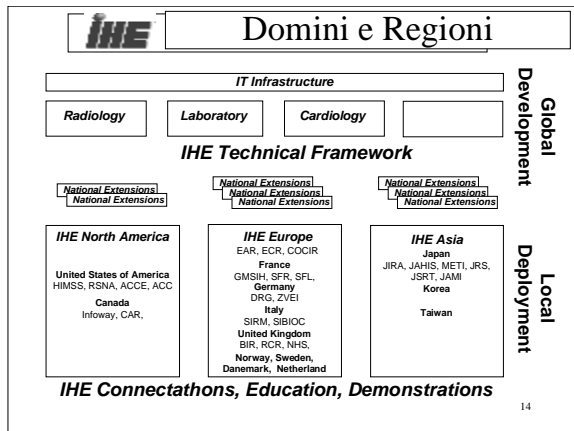
- **Flusso operativo del laboratorio** (Laboratory Scheduled Workflow LSWF)
- **Riconciliazione anagrafiche** (Patient Information Reconciliation LPIR)
- **Point of Care Testing (POCT)**
- **Esternalizzazione** (Outside Healthcare Enterprise Testing OHET)



## IHE: scelta dello standard . . .

- HL7 Version 2.5
- profili dei messaggi
- codificazione "pipe" obbligatoria e codificazione xml facoltativa
- tipi di messaggio: OML, ORL, OUL, ACK





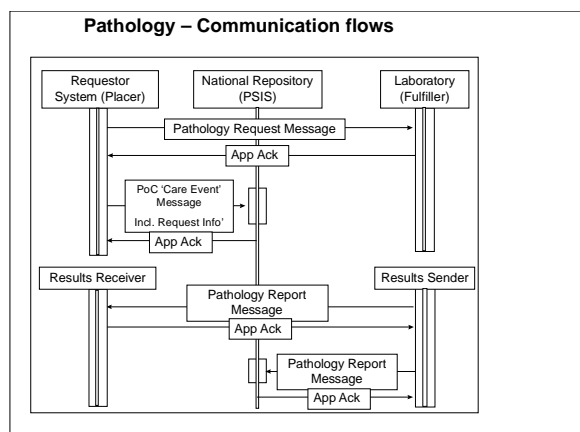
- ### circolazione dei dati
- ciclo richiesta-risposta
  - strumenti per connettività: gli standard
  - colmare il "gap" della standardizzazione
  - **accelerazione in UK**
  - nuovi temi, fuori dal seminato

### CPD4IT

NHS Connecting for Health

Pathology Messaging Update

Simon Withey  
Denis Hutchinson



## National Programme for IT


Julie Clifton  
Head of Stakeholder  
Engagement  
October 04

### In 2003-2004:


- there were 325 million consultations with GPs or nurses in primary care
- 13.3 million people attended a first outpatient appointment with a consultant
- nearly 13.9 million people attended A&E and there were 4.2 million emergency admissions
- over 5.4 million people were admitted to hospital for planned treatment
- over 649 million prescription items were dispensed in the community
- 6.4 million calls were made to NHS Direct
- 6.5 million hits to NHS Direct Online
- over 1.5 million patients visited walk-in centres

Source: Chief Executive's Report to the NHS, May 2004

### Looking forward

- 2006
- 
- Support for all doctors and nurses to help with decisions
  - Electronic prescribing
  - Care at home helped by remote links to healthcare professionals anywhere in the community
  - Better healthcare planning by using the facts and figures held on NHS CRS
  - Electronic Transmission of Prescriptions fully implemented
- 2008

### Looking forward

- 2008
- 
- Final phase of NHS CRS - full integration between health and social care systems across England
- 2010

### NP4IT - Position paper on Pathology needs

- |   |  |
|---|--|
| @ valori di riferimento                         | @ tessera sanitaria in tutte le richieste      |
| @ medico curante                                | @ ricerche per contesto conservazione archivio |
| @ valori numerici e alfanumerici                | @ KB scopo e utilità esami                     |
| @ errori anagrafiche                            | @ codici per contenitori e per profili         |
| @ codice a barre richieste, risposte e campioni | @ . . .  |

Rick Jones, Leeds, & ACB-IT workgroup, maggio 2005

### circolazione dei dati

- ciclo richiesta-risposta
- strumenti per connettività: gli standard
- colmare il "gap" della standardizzazione
- accelerazione in UK
- nuovi temi, fuori dal seminato ?

## The Request-Report Cycle: Are the wheels coming off?



Dr Jonathan Kay  
jonathan.kay@ndcls.ox.ac.uk

CPD4IT "Getting ahead of the IT Curve"  
Monday, 18 October 2004

Jonathan Kay

## *Inevitable changes beyond our control*

### Increased discontinuities

- New models of healthcare provision
- Shorter working hours
- From doctors to nurses...

### Clinicians will have less experience...

- ... but more formal accreditation
- ... and a need for lifelong learning

### From clinicians to protocols...

- ... some of which might be evidence-based

### More investigations/ patient/ year

Jonathan Kay

## *Cambiamenti ineluttabili fuori dal nostro controllo*

### Discontinuità

- nuovi modelli assistenza
- riduzione ore di lavoro
- da medici a infermieri...

### Clinici con meno esperienza...

- ... ma più accreditamento formale
- ... e necessità di apprendimento continuo

### Dai clinici ai protocolli...

- ... solo alcuni basati su evidenza

### Più esami per paziente e per anno

Jonathan Kay

## *Problems with reports*

Do they get to the **right person** at the **right time**?

- Responsibility
- Choice of medium
- Timeliness (and QC of timeliness)

Are they **interpreted** appropriately?

Jonathan Kay

## *Problemi con risposte*

Alla persona giusta nel tempo giusto?

- Responsabilità
- Mezzo di trasmissione
- Tempestività e QC della tempestività

Sono interpretate correttamente?

Jonathan Kay

## *Reports*

- Results and **knowledge**
- **access**
  - Paper
  - Computer access
  - Browser access
- “Push” and “pull” (and **continuity** of care)
- Escalation (and **continuity** of care)
- **Mobile devices**

Jonathan Kay

## Risposte

- risultati e conoscenza
- **accesso**
  - carta
  - computer
  - browser (intranet)
- “spedizione” o “scarico” (==> **continuità assistenziale**)
- parziali e aggiunte (==> **continuità assistenziale**)
- **dispositivi mobili**

Jonathan Kay

## Hyperlinking knowledge to reports

- Can deliver **content appropriate** to task
- Can deliver **volume** of information appropriate to task
- Web technology
- Browser access to reports
- Databases of knowledge
- Hyperlinking from the current process to the knowledge
- Compare canned comments and hyperlinking

Jonathan Kay

## iper-collegamento conoscenza-risposta

- contenuto appropriato per utilizzo
- volume appropriato per utilizzo
- tecnologia Web
- risposte via Browser
- banche dati conoscenza
- collegamento dal flusso corrente alla conoscenza
- comparazione commenti allegati e hyperlink

Test	Results	Units	Range	Help	Cum
GLUCOSE	13.0	MMOL/L	3.0-5.5	✓	<input type="checkbox"/>
CALCIUM	1.85	MMOL/L	2.12-2.62	✓	<input type="checkbox"/>

This button produces a table of the results for the selected analytes

Jonathan Kay

## Oxford Clinical Intranet

- Provides both support information and components of the patient record
- User experiences
- Current development issues:
  - Extension to primary care
  - Handheld wireless-networked computers
  - Automated linkage of advice to the patient record
- <http://oxmedinfo.jr2.ox.ac.uk/>

### ... risultati e conoscenza ...

- immunologia infezioni materno-fetali
- autoanticorpi
- antibiogrammi
- germi sentinella
- emocitometria
- sodio/acqua - acido/base
- esami esoterici
- non-conformità
- ...

### circolazione dei dati

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### ... per saperne di più ...



[www.LABMEDICO.it](http://www.LABMEDICO.it)

BITMEDICO LABSTATISTICA  
LABSITI LABGOVERNO LABLIBRI



[www.CISMEL.it](http://www.CISMEL.it)

[www.SIMeL.it](http://www.SIMeL.it)



-gruppo Informatica  
-news: standard - linee guida