



Electronic Data Interchange

Stewart Halson

Electronic Data Interchange

- What is EDI?
- How can EDI benefit us?
- Why do we need EDI communication Standards?
- Why is EDI so complex?
- What is the current position with regards to EDI and the NBS?

Our Environment in a week!

- **The United Kingdom National Health Service (NHS) is a massive and hugely varied health service delivery organisation. In a typical week:**
 - 1.4 million people will receive help in their home from the NHS
 - 6.0 million people will visit their GPs
 - More than 800,000 people will be treated in NHS hospital outpatient clinics
 - 700,000 will visit a NHS dentist for a check-up
 - NHS district nurses will make more than 700,000 visits
 - Over 10,000 babies will be delivered by the NHS
 - NHS ambulances will make over 50,000 emergency journeys
 - NHS Direct nurses will receive around 25,000 calls from people seeking medical advice
 - Pharmacists will dispense approximately 8.5 million items on NHS prescriptions
 - NHS surgeons will perform around 1,200 hip operations, 3,000 heart operations and 1,050 kidney operations.
 - Labs and associated services will provide results on millions of tests.
- **Again, that is all in 1 average Week. That equates to roughly 3 Million critical processes per day. If totally supported by a single electronic records system, this would result in approximately 30 million new transactions per day on a 24 hour, 7 days a week basis.**

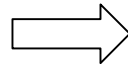
What is EDI?



- A mechanism for the electronic transfer of data from one computer to another.



NBS



Hospital

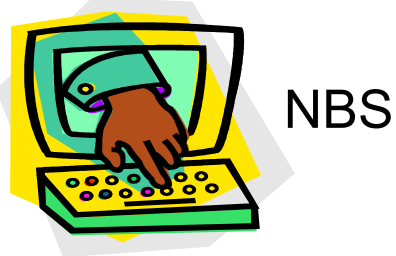
How can EDI benefit us?

- Reduction of delays caused by post.
- Reduce the likelihood of information being mislaid.
- Avoidance of the cost of
 - ♦ creating, recording and storing of paper documents and records.
- Satisfy customer demand
 - ♦ Opportunity to improve customer service.
- Avoid re-keying of data,
 - ♦ save time and reduce errors.

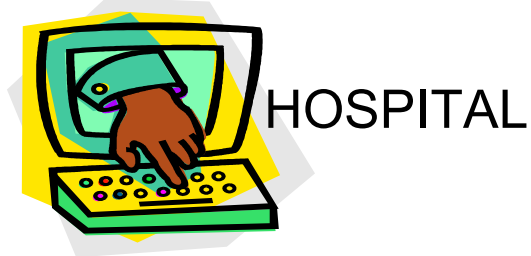
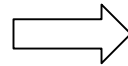
Why is EDI complex?



- Internal representation of data in the sending system may be different to that in the receiving system.
- Translation between the two systems is needed.
- EDI communications standards provide rules for this translation
 - ♦ Through an intermediate state - the EDI formatted file.



EDI formatted file



PATIENT
JOANNE SIMMS
DOB 19/12/74
ABO/Rh TYPE A+

PATIENT
SIMMS JOANNE
DOB 19/12/1974
ABO/Rh A POS



EDI - Standards (HL7, SNOMED)



- The message is easy to read by man but requires additional interpretation (parsing) for computers because it is unstructured.
- In order to transmit data in a structured form, an agreement has to precede the exchange between communicating partners.

The following must be specified:

- The order in which the items are transmitted
(e.g 1.Name 2.DOB 3.Blood group)
- Which characters separate the items, so that the items can be differentiated
(e.g. Name, DOB, Blood group)
- Which format an individual item has, e.g. how the date is written
(dd/mm/yy or dd/mm/yyyy)

What Blair meant to say...



“I have the greatest respect for Lionel Jospin even though we have differing views”

What he actually said ...



**“I have a great
desire for Lionel
Jospin in many
different
positions”**

A vertical column of five interlocking puzzle pieces in different colors: cyan, purple, pink, and dark purple. The pieces are arranged in a vertical line, with the cyan piece at the top and the dark purple piece at the bottom. The background of the slide is a blue-tinted image of a hospital room with medical equipment.

EDI - message build

- NBS or supplier need to extract data that is consistent with HL7/Snomed CT or other recognised standards.

EDI - message send, what mechanism?

- Send over NHSNET (X400, DTS), secure web server etc.

EDI - message receipt/load

- Supplier needs to check message and load data into Information System

EDI - use of web technology

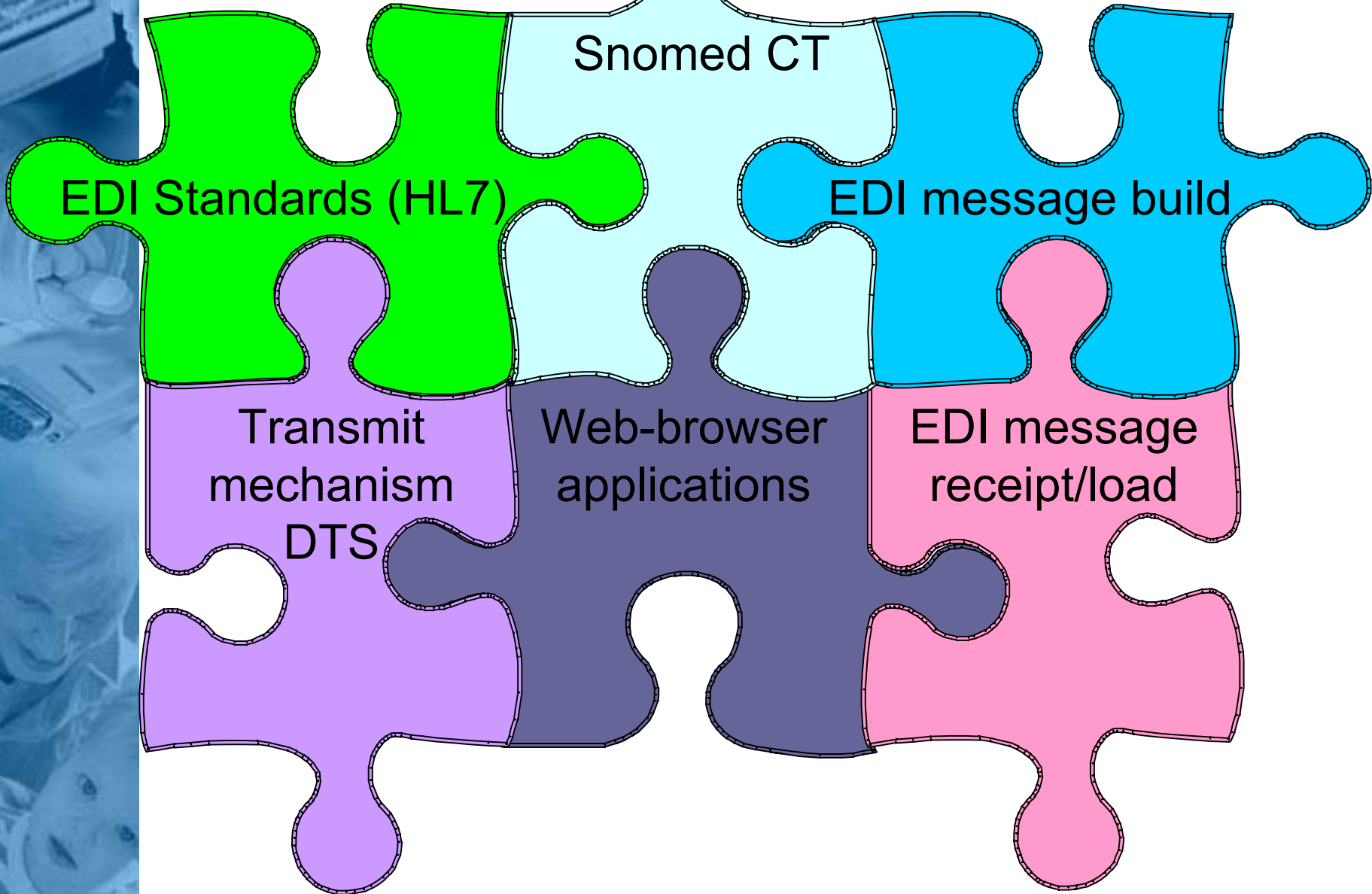
- Implement web based information browsers so that customers can view patient data on-line

Implementation of EDI

- EDI is complex to implement.
- The major risks stem not from the technology
 - ◆ but from the large number of people and organisations involved.
 - ◆ EDI communication standard authors
 - ◆ Suppliers of sending system(s)
 - ◆ Electronic Communications Experts
 - ◆ Communications Service Providers
 - ◆ Target site System(s) Supplier(s)

Current NBS EDI work

- Representation on the HL7-UK workgroup
- Compiling a list of SNOMED codes required
- Identifying which parts of HL7 can be used by a Blood Service and what is missing
- Developing Standards (Red book dispatch note standard)
- Pilot Dispatch note project
- Development of a web-browser to [view RCI \(APEX\) data](#)
- Development of a web browser to view Dispatch note data
- Other EDI projects e.g. BSMS, Online ordering etc.



Snomed CT

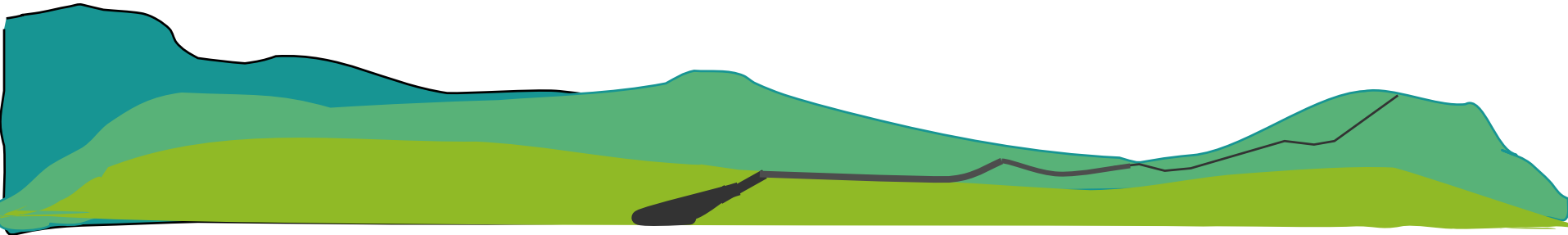
EDI Standards (HL7)

EDI message build

Transmit
mechanism
DTS

Web-browser
applications

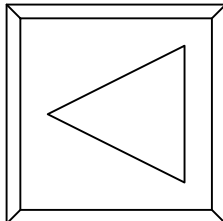
EDI message
receipt/load



Health Records Infrastructure (HRI) Service

To make it possible to share patients' healthcare details nationally the NHS Information Authority has started a new programme of work called the Health Records Infrastructure (HRI).

- The Health Records Infrastructure will provide new services based on web technology. It will link together existing computer systems, holding patient information.
- Details will be retrieved to form a virtual record of the NHS care and treatment each patient receives.
- Information will continue to be stored on many different computers, in disparate locations, but will be available to patients' and NHS staff when and where it is needed.
- The amount of information available may also be restricted by access privileges.
- Health Records Infrastructure includes a system to control who can see the information held on an individual and whether or not the patient has consented to their information being used in the NHS.





SNOMED CT

SNOMED CT is the result of collaboration between the NHS Information Authority and the College of American Pathologists (CAP). In effect it combines the two leading terminologies, SNOMED RT and Clinical Terms Version 3 (Read Codes) to provide economies of scale in maintenance and upkeep as well as shared expertise.

Health Level Seven (HL7)

Health Level Seven is one of several ANSI-accredited Standards Developing Organisations operating in the healthcare arena, HL7's primary domain is clinical and administrative data. HL7's most referenced specification is the '*Application Protocol for Electronic Data Exchange in Healthcare Environments*'. It is a messaging standard that enables disparate healthcare applications to exchange data.

HL7 defines transactions for transmitting data about patient registration, admission, discharge and transfers, orders and results for laboratory tests, image studies, nursing and physician observations, diet orders, pharmacy orders, supply orders, and master files.

Unfortunately Blood Stocks Management is not covered!

