Electronic Medical Records
MJS Disclaimer

- **I am reasonably IT savvy**
- **I was very frustrated by poor solutions offered**
- **So I sought to find solutions >>> None evident**

>> So I created one – my own Electronic Clinical Record

I therefore have a commercial conflict of interest in this solution that I have created for my own use!!

The State of the EMR Market in 2017

AAOS 2017 Annual Meeting

San Diego Convention Center

- **30% of US physicians in EMR Burn out**
- **80% of US EMR is copy and paste**
- **US EMR Market - $28 billion in 2016**
- **1 in 6 medical practices are planning to change vendors**
- **15 percent switch rate**
- **Increasing security risks e.g.**

Ransomware:

Hollywood Presbyterian Medical Center. - February 5, 2016 payed a ransom of $17,000 to obtain a decryption key to restore its data.

Issue – New Administration policy - (currently a US Issue, but we are increasingly caught up in it.)

- confusion regarding **meaningful use** and certification of EMR systems
- Stick and carrot – token support but decreasing payment for non-compliance

"New participants who successfully demonstrate meaningful use for this period and satisfy all other program requirements will avoid the payment penalty in 2017."

Issue – Cybersecurity

- increasing number and severity of security breaches
- does not seem to be getting better
- Multiple portal and workflow challenges
- expect to see fines that are more significant.
- This area continues to be an Achilles heel for the industry.

Issue – Frustrated Physicians.

- Physicians have repeatedly complained that EHRs are difficult to use.
- EHR interfaces are awkward and non-intuitive creating more problems than solutions.
- Physicians are not convinced that EMR's will cut costs or help to provide better and safer care.
- Vendors do not seem to be in touch with need
- EHRs often get in the way and slow users down because of the way they are configured or are not convenient to use.
- Most EHRs are not designed to juggle the simultaneous actions

The State of the EMR Market in 2017
The players

1. **Cerner**
   - Big acquisition, but recently lost Mayo Clinic contract (55,000 doctors!)
   - Department of Defense EMR contract will also help to move Cerner forward.
2. **McKesson**
3. **Epic**
   - vendor for Kaiser Permanente and many other large corporations
4. **Allscripts Healthcare Solutions**
   - top five position for several years
   - EPAS

Others,

including GE Healthcare, Athenahealth‘s Intersystems, QSI/NextGen, MEDITECH, Greenway, **eClinicalWorks** plus at least 600 others

Recently fined for doubling licence fees to a hospital and blocking access until they paid up.

EMR in Australia

Well funded by Government and growing rapidly

- NeHTA - $1B on PCEHR > “My Health Record”
- Radiology Standards – Standards Australia
  - Defined but not mandated so ignored by Radiologists

- *HISA - Health Informatics* Society of *Australia*.
  - HIC - **AUSTRALIA’S PREMIER DIGITAL HEALTH, HEALTH INFORMATICS AND E-HEALTH CONFERENCE**
  - **Brisbane August 2017 >>> Opening address!!!**

“Everything is just great!
We just can not get the doctors on board!!!”

Recognised issues

- **Frustrated Physicians**
- **Hospitals Switching EMR Vendors**
- **(US issues) A New President and New Healthcare Policy Leaders**
- **Ransomware Attacks and Cyber Breaches Causing a PR Downside**
- **"Dashboarding," Blockchain and Other Product Trends**
- **Hundreds of Competitors**
- **No Vendor With Even 1/5th of the Market**
- **Interoperability Mandates**
- **IT Staff Shortages**

Talk given at HIC Conference, Brisbane, August 2017

End user driven electronic clinical record development – *Critical Integrative Centrality* in the health care axis

Michael Sandow FRACS

Orthopaedic Surgeon

Wakefield Orthopaedic Clinic

Adelaide

Michael Sandow BMBS FRACS

- **Orthopaedic Surgeon**
- **Wakefield Orthopaedic Clinic, Adelaide**
- **13 surgeons**
- **Electronic practice records >20 years - Appointments / accounts / letters**
- **Until recently, only one still kept paper clinical notes**
- **Yes that would be me!!**

Wakefield Orthopaedic Clinic EMR status

- **WOC Surgeons uses one predominant Medical records system**
- **Why paperless –** ***"largely office space / secretarial work load driven"***

- **WOC Surgeon 1 –** ***"slower, but the secretaries love it. I was going to toss it in, but too late now, and I cope, but I'm not that happy."***

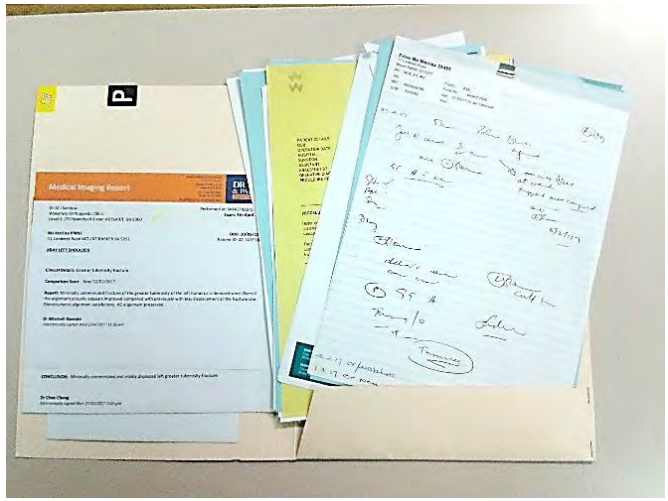
- **WOC Surgeon 2** ***"harder and slower to see patients, but I'm not carrying around piles of notes – like you!"***

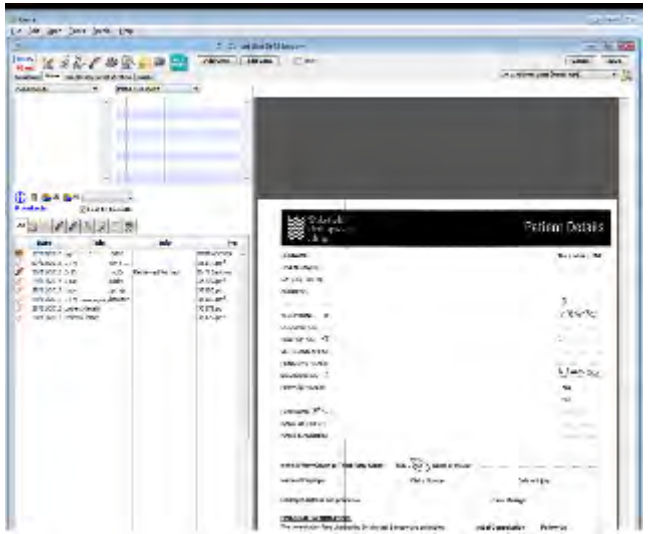
Why do I need to go paperless

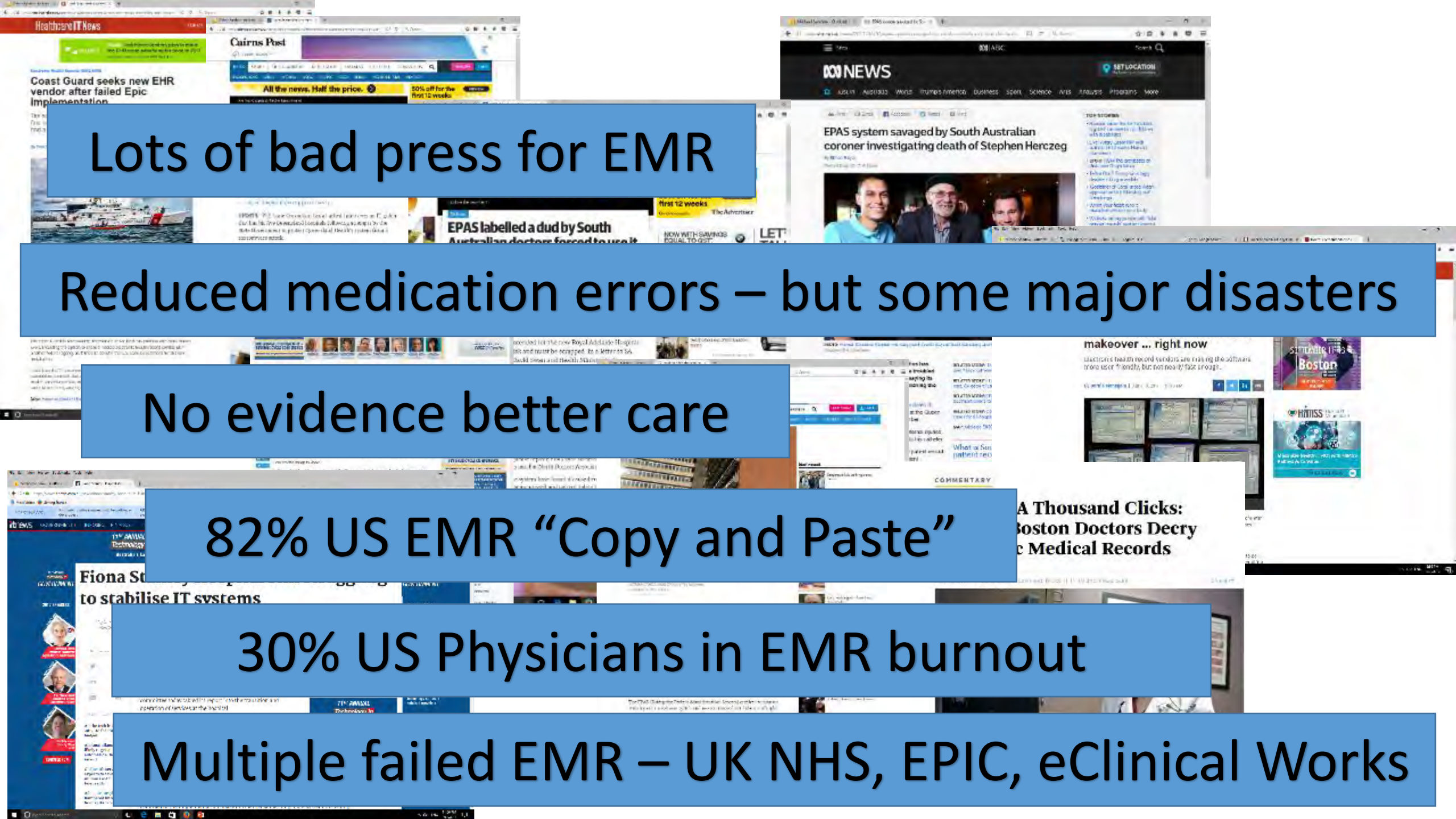
- **Managing patient appointments**
- **Managing the billing**
- **Storing the data**
- **Paperless clinical records**

Wakefield Orthopaedic Clinic EMR status

- **Records quality has fallen – most only use the GP letter**
- **More legible, but less complete – SLOWER!**
- **Sometimes 3-4 line typed note for consults, and some scans**
- **Multiple individual files – may need 20 files open to review a case**






Lots of bad press for EMR
Reduced medication errors – but some major disasters
No evidence better care
82% US EMR “Copy and Paste”
30% US Physicians in EMR burnout
Multiple failed EMR – UK NHS, EPIC, eClinical Works
Coast Guard seeks new EHR vendor after failed Epic implementation
EPAS system savaged by South Australian coroner investigating death of Stephen Herczeg
EPAS labelled a dud by South
makeover ... right now
A Thousand Clicks:
Boston Doctors Decry
Medical Records
to stabilise IT systems

SA Health / RAH experience

- **Hand Clinic Outpatient template reduced from 25 → 7 patients per hour**
- **Planning to employ scribes**

SA Health / RAH experience

- **Hand Clinic Outpatient template reduced from 25 → 7 patients per hour**
- **Planning to employ scribes**
- **Unable to go paperless for the nRAH move**

Is EMR delivering what is needed?

- "….what doctors want most is an EHR that ***fits with their workflow, not disrupts it."*** HealthcareITNews April 2017

- "…..that EMRs have ***not been designed by their end users***.
  … a ***clinician-driven EMR*** may be an ***opportunity to innovate."***!!!!
  US National Innovation Summit 2014

Transition from Hard to Soft

- **EMRs are designed for coding and billing,**
  - not efficient patient care

What they should do:

- **emulate efficient, entrenched workflows**
- **designed around the end-users' needs**

What current EMR technology actually does:

- **significant workflow disruption**
- **decreased eye-eye contact with the patient**
- **increased time to document a record**

Move to paperless eMR / eCR

- **Same work flow or better**
- **Same data input or better**
- **Increased IT functionality**

- ***What is done well in hard – emulate it in soft***
- ***What is done badly in hard – replace it in soft***

Hardly a unique situation – so where is the solution?

MJS Technology IN-Basket test

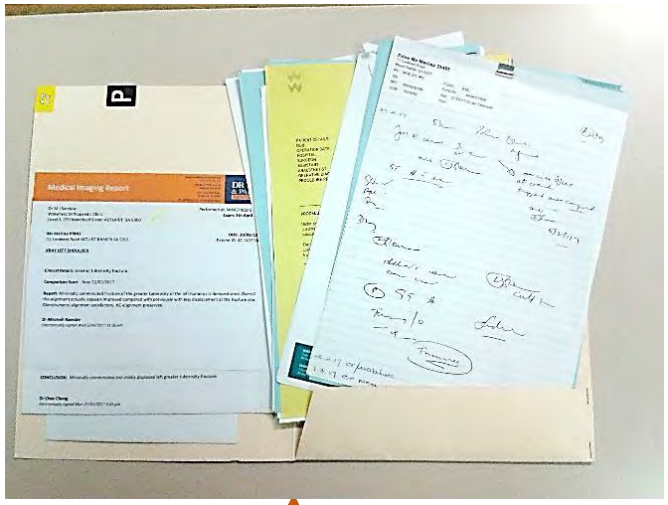
- Define the specifications
- Check the IN Basket
- If nothing there
  - consider doing it yourself

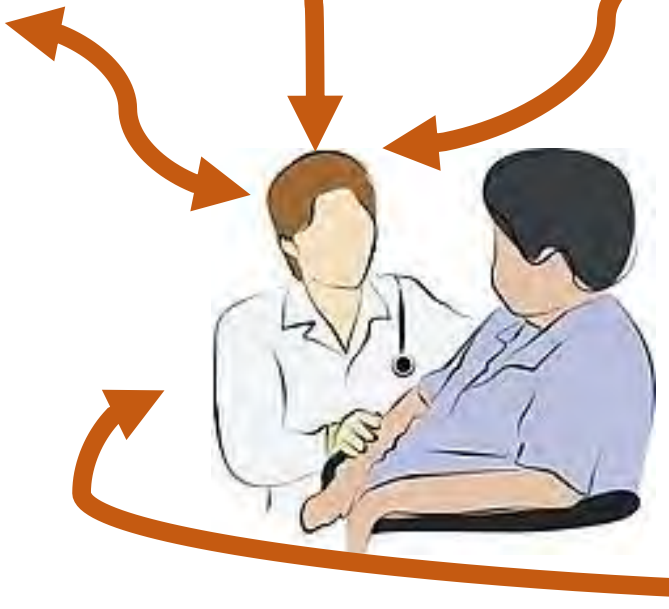
1. **Storing and organising the Medical / Health data**
   - ➢ **Primary role of most EMR – does it well.**
2. **Getting data into the system**
   - ➢ **Typing faster is not the answer**
   - ➢ **Touch typing has lower cognition and retention than hand writing**

The Pen Is Mightier Than the
Advantages of Longhand Ov
Pam A. Mueller, Daniel M. Op

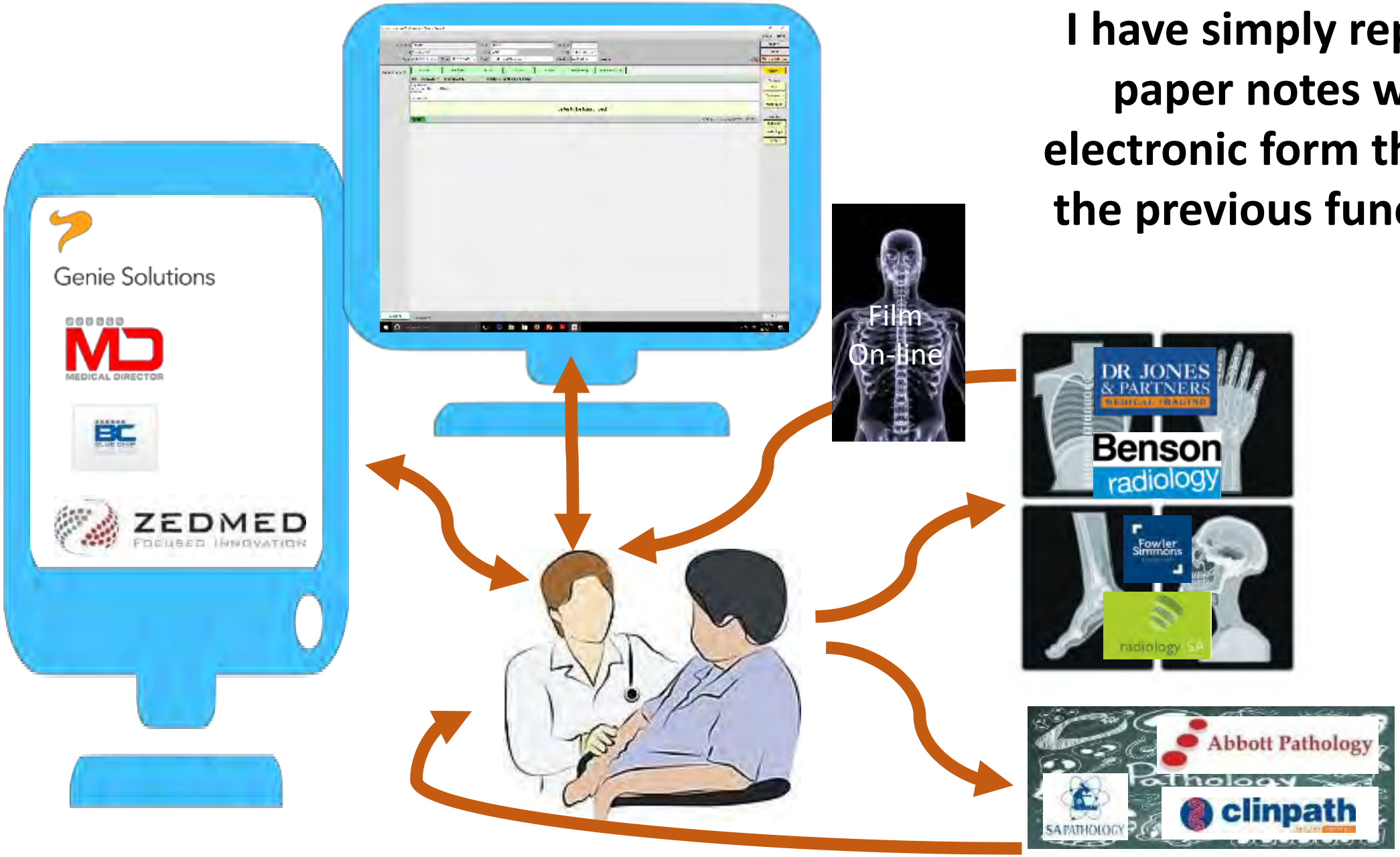
3. **Getting data out of the system**
   - ➢ **Multiple separate files can be an is**

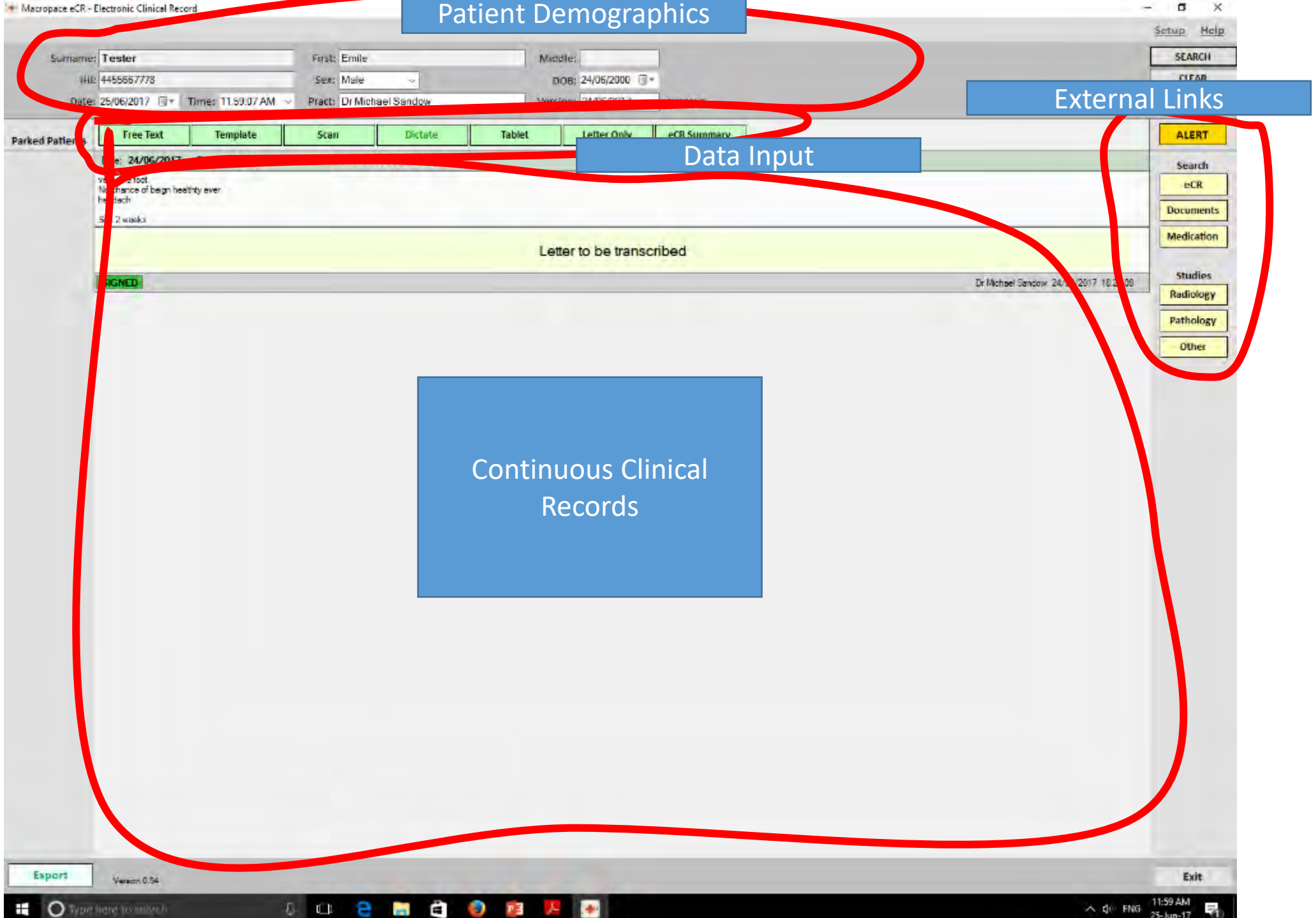
I use Genie to run my practice, and Paper notes work well, but are one of many inputs and connections during the consult
- storage is becoming an issue





I have simply replace my paper notes with an electronic form that match the previous functionality




Patient Demographics
External Links
Data Input
Continuous Clinical Records
Macropace eCR - Electronic Clinical Record
Setup
Help
Surname: Tester
First: Emile
Middle:
SEARCH
CLEAR
IHE: 4455667778
Sex: Male
DOB: 24/06/2000
Date: 25/06/2017
Time: 11:59:07 AM
Pract: Dr Michael Sandow
Free Text
Template
Scan
Dictate
Tablet
Letter Only
eCR Summary
ALERT
Search
eCR
Documents
Medication
Studies
Radiology
Pathology
Other
Letter to be transcribed
Export
Exit

Macropace eCR - Electronic Clinical Record

Setup Help

Surname: Tester First: Emile Middle:
IHI: 4455667778 Sex: Male DOB: 24/06/2000
Date: 25/06/2017 Time: 11:59:07 AM Pract: Dr Michael Sandow Version: 24/06/2017 CURRENT

SEARCH
CLEAR
My Health Record

Parked Patients

Free Text | Template | Scan | Dictate | Tablet | Letter Only | eCR Summary

ALERT

Search
eCR
Documents
Medication

Studies
Radiology
Pathology

Practitioner: Dr Michael Sandow

sore foot
no chance of beign healthy ever
headach
See 2 weeks

Letter to be transcribed

GNED

Dr Michael Sandow 24/06/2017 10:22:09

Free Text | Template | Scan | Dictate | Tablet | Letter Only | eCR Summary

Export

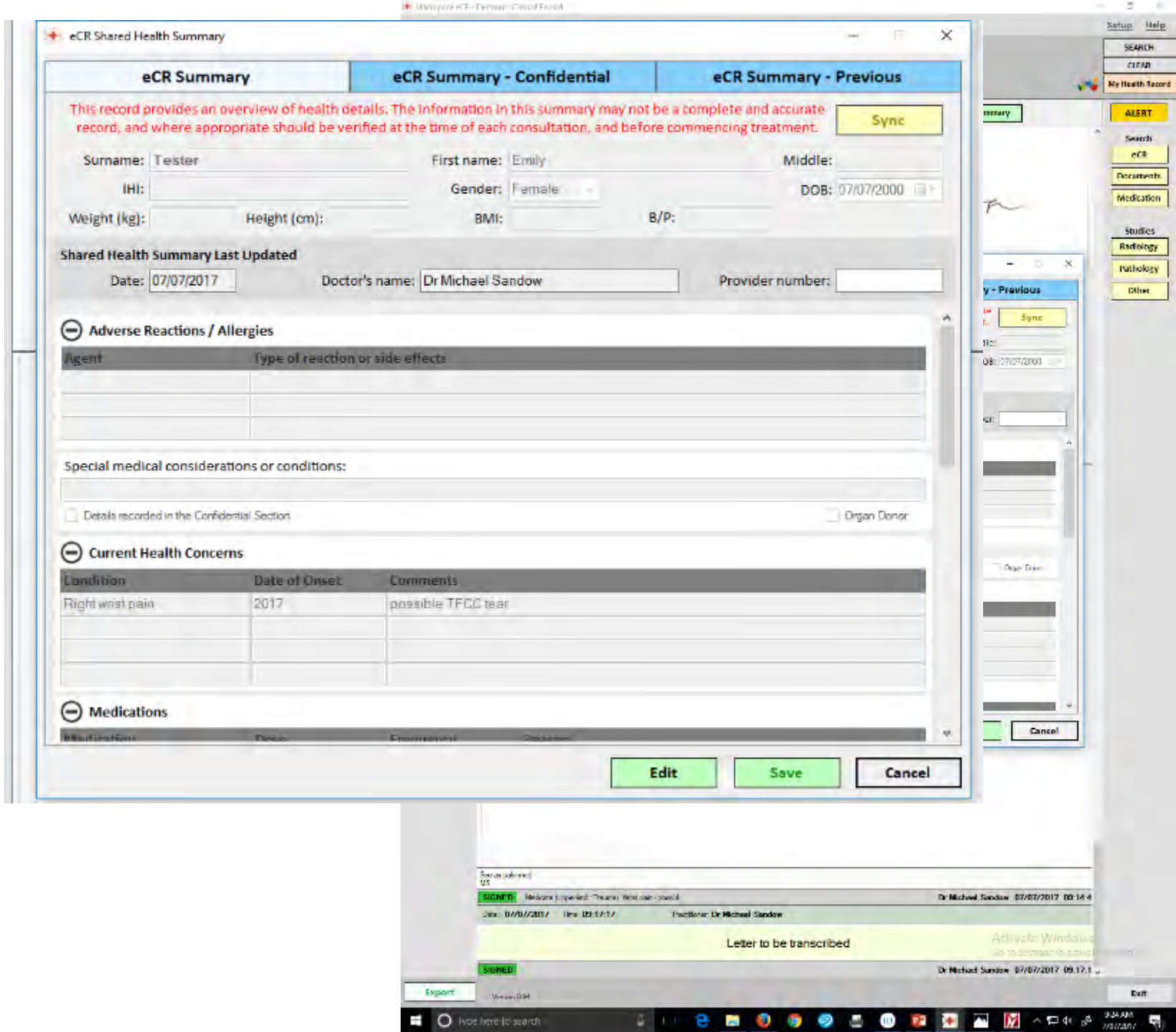
Version 0.54

Type here to search

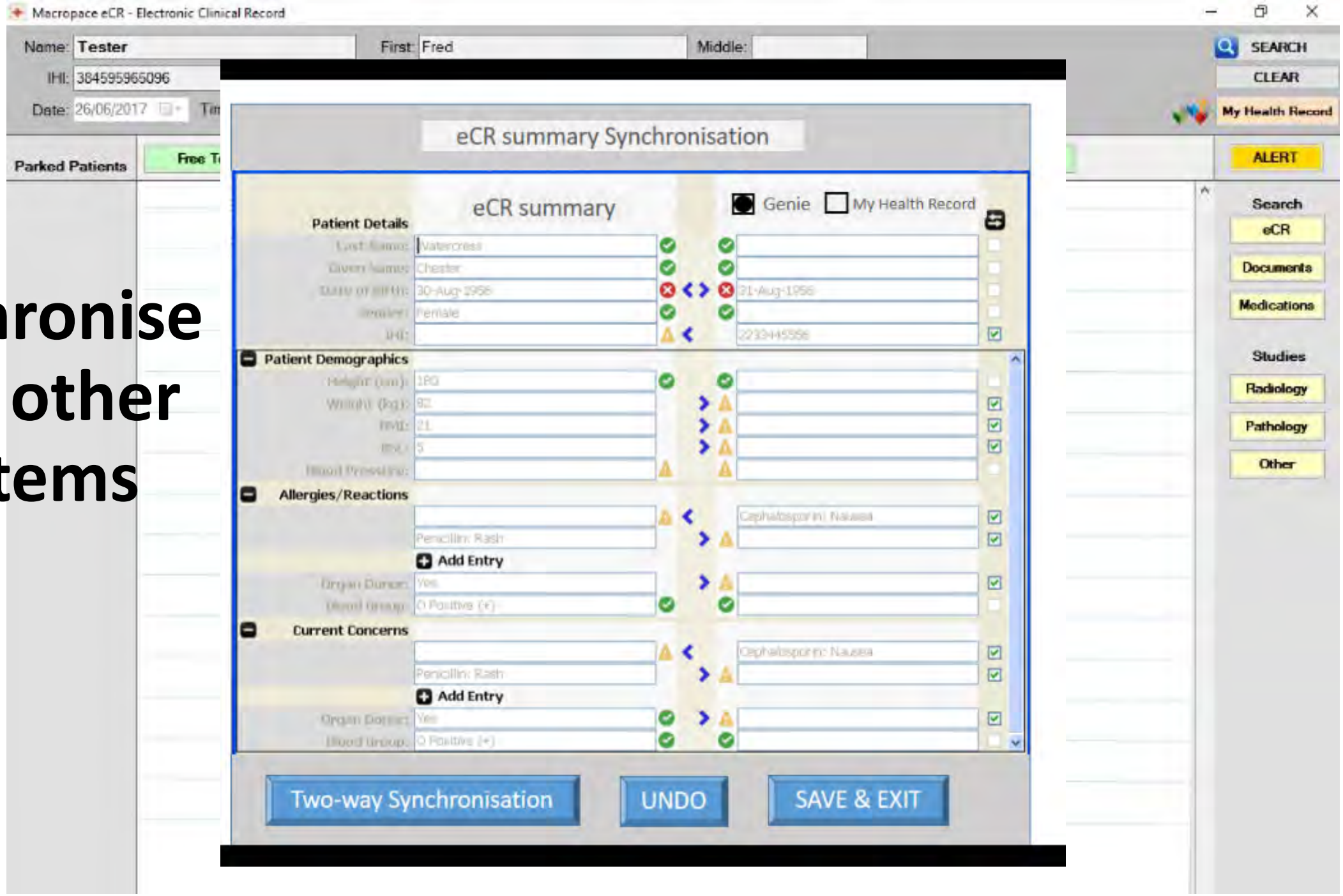
FNG 11:59 AM 25-Jun-17

eCR Summary

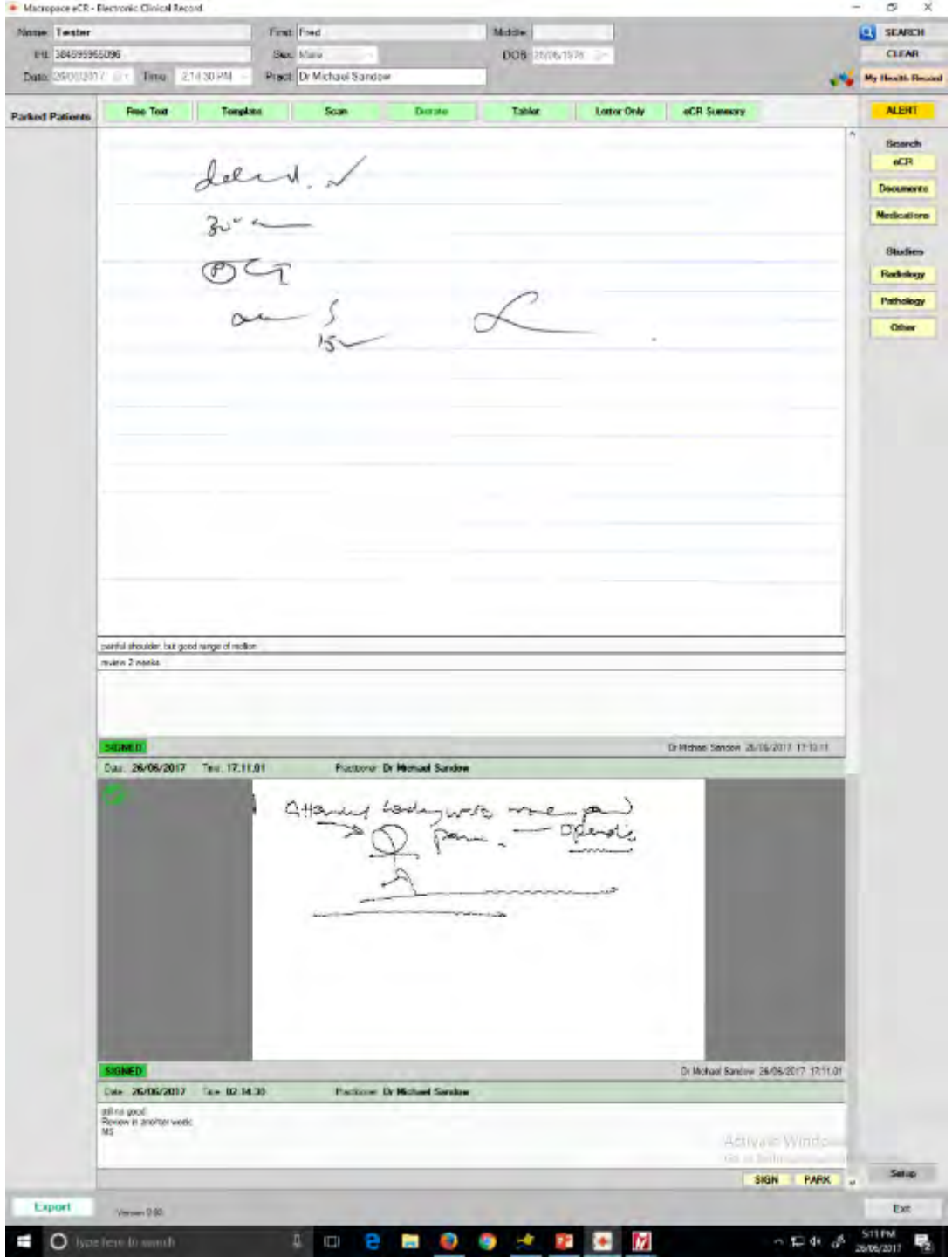
- **eCR Summary**
- **eCR Confidential Summary**
- **eCR summary – Previous versions**
- **Sync**



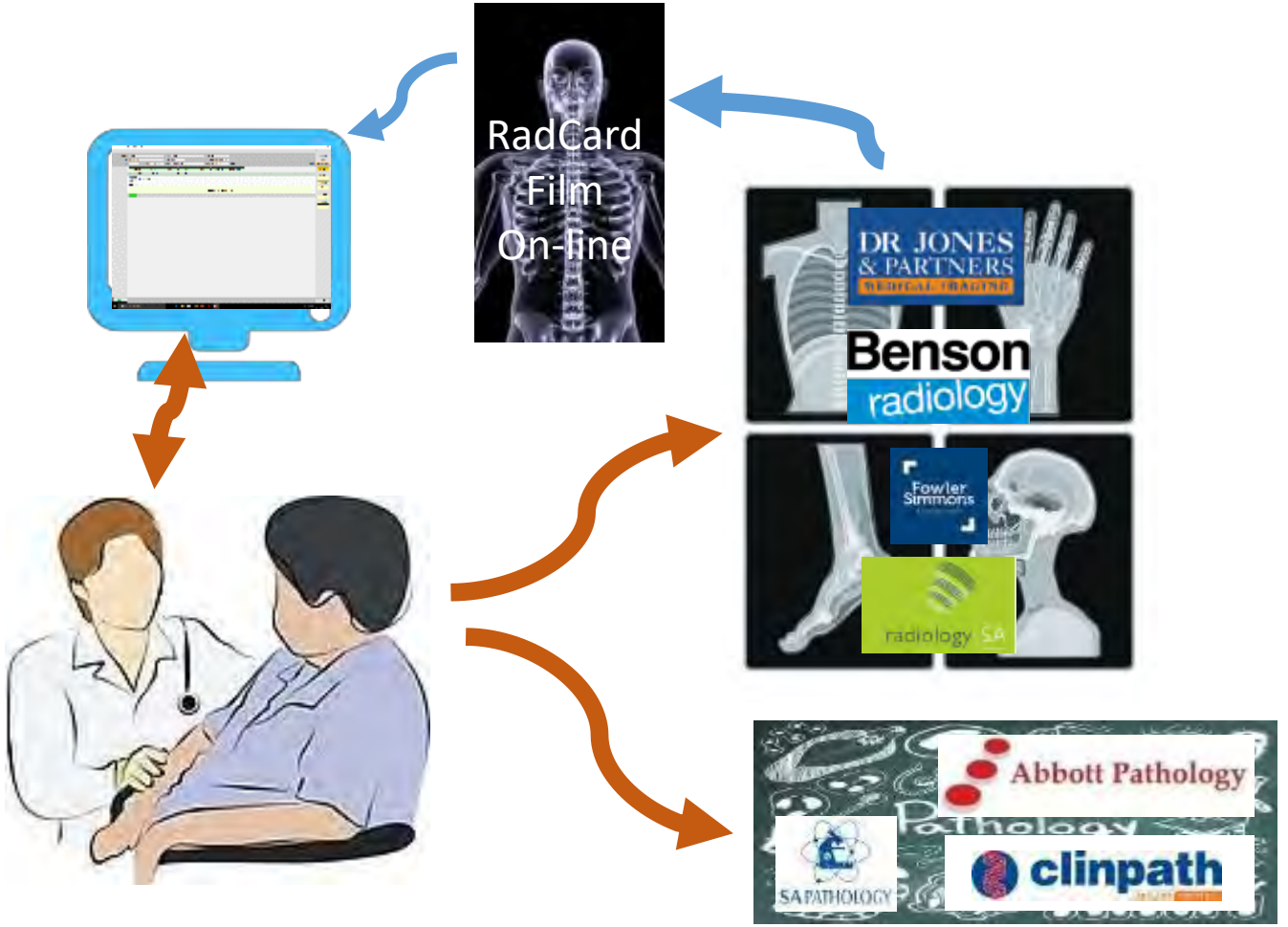
Synchronise with other systems



- Continuous medical record
- Searchable with bookmarks or text etc
- Links to external sources
  - Host Medical Software
  - Radiology
  - Pathology
  - My Health Record
- Alert link
- Exportable as PDF

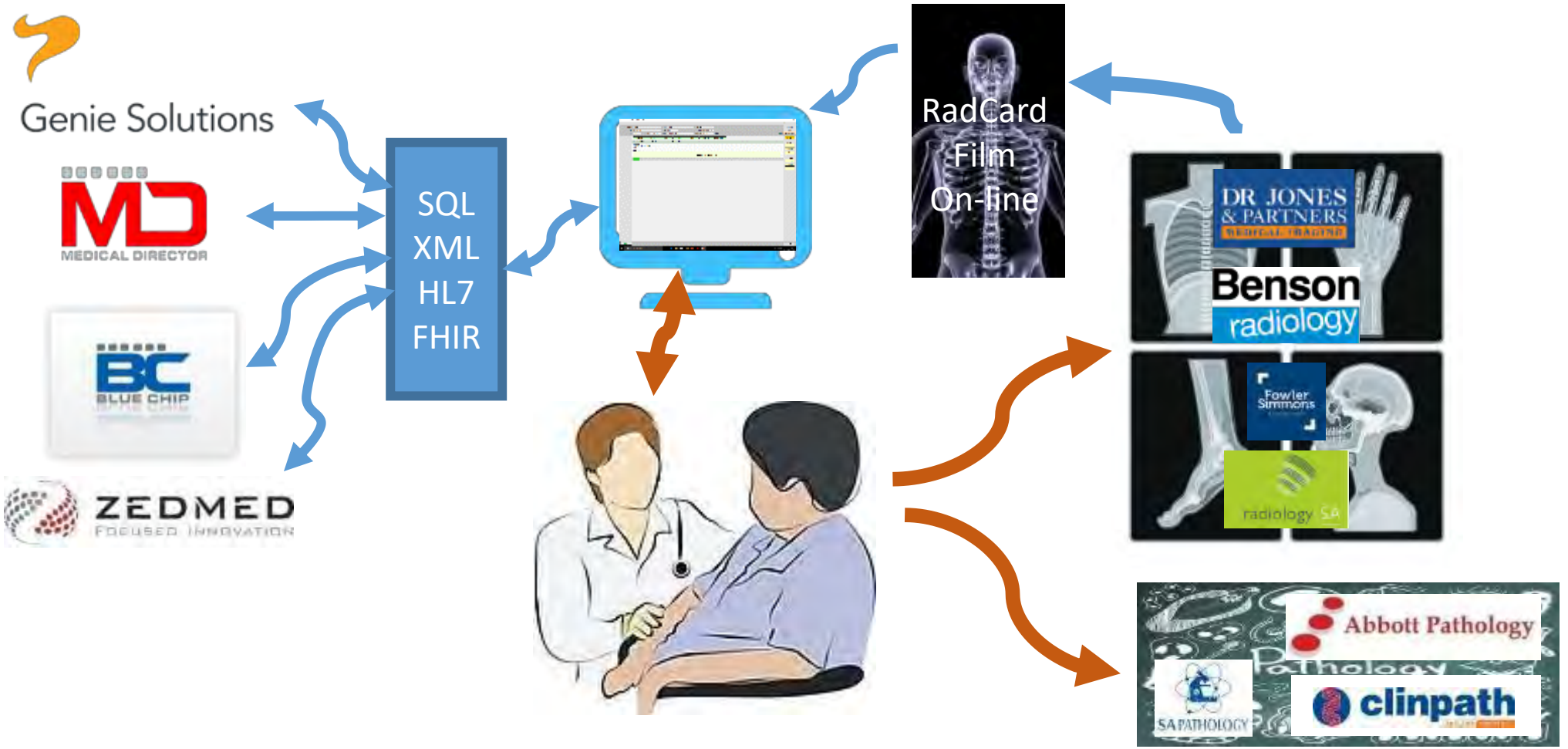


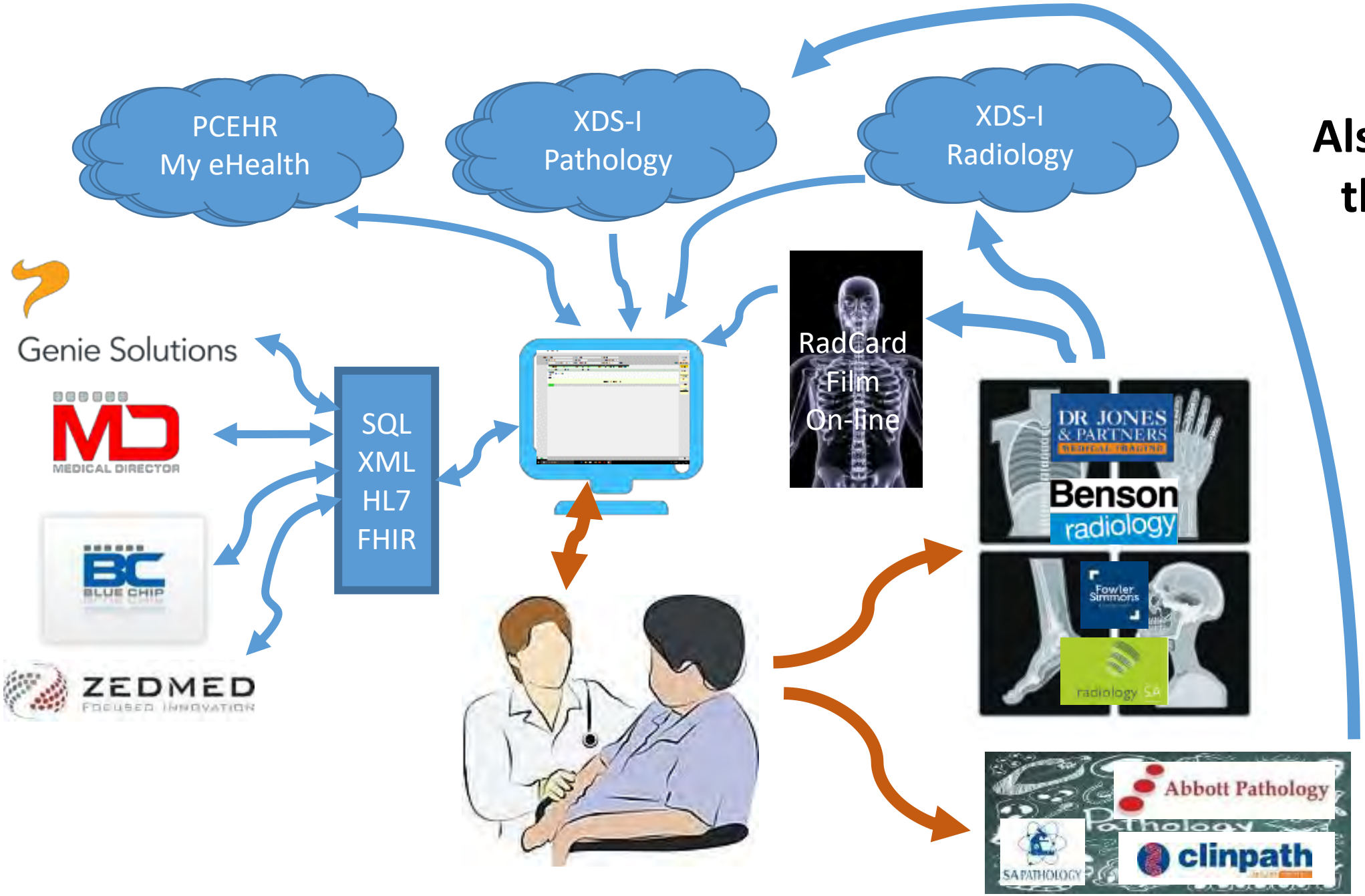
Radiology and Pathology can be linked



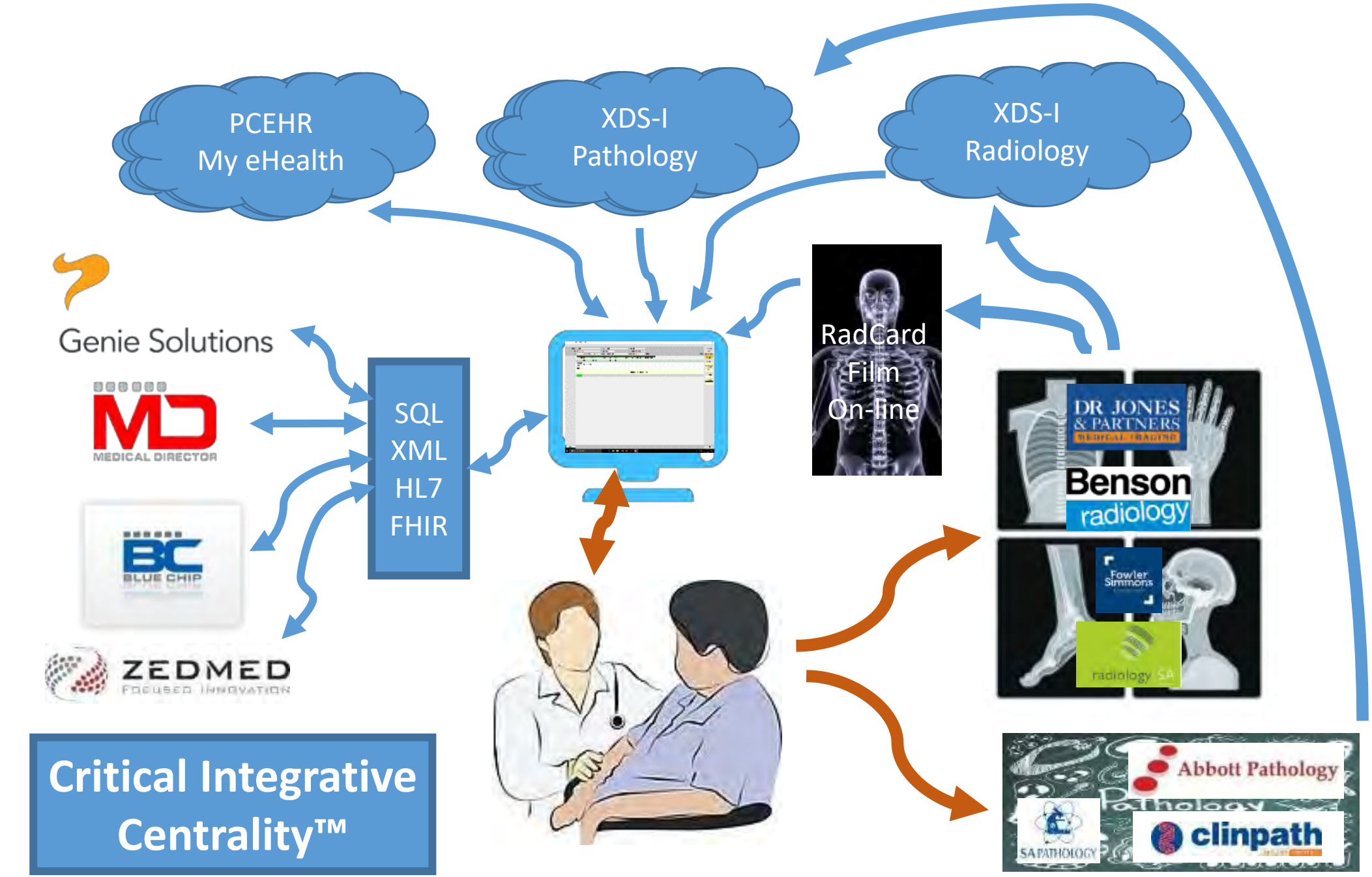
Because it is an electronic interface, I now have a single conduit to link to the host managements software and radiology/pathology.

<u>Same data input / Better data access / integrated IT functionality</u>





Also links to the cloud


PCEHR
My eHealth
XDS-I
Pathology
XDS-I
Radiology
Genie Solutions
MEDICAL DIRECTOR
BLUE CHIP
ZEDMED
FOCUSED INNOVATION
SQL
XML
HL7
FHIR
RadCard
Film
On-line
DR JONES
& PARTNERS
Benson
radiology
Fowler
Simmons
radiology SA
Abbott Pathology
Pathology
SA PATHOLOGY
clinpath
Critical Integrative
Centrality™

Macropace eCR

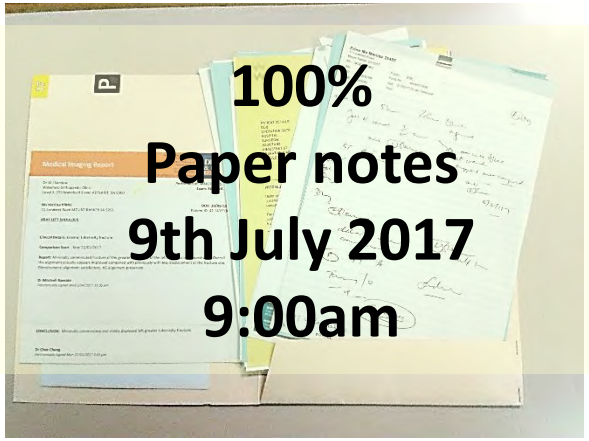
** The software is not commercially available **

Successful Transition to Paperless

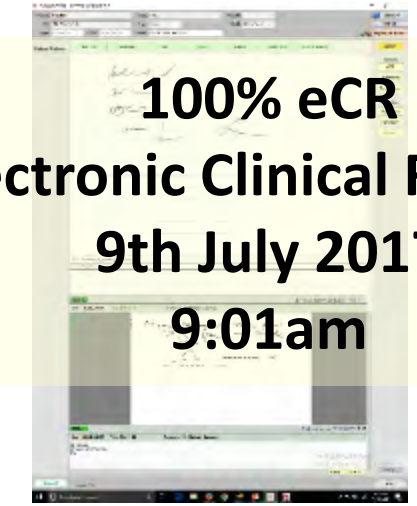
- **Managing patient appointments** ✓
- **Managing the billing** ✓
- **Storing the data** ✓
- **Paperless clinical records** ✓

Successful Transition from Hard to Soft

- **emulated my efficient, entrenched workflows**
- **designed around the end-user's needs**
- **Achieved a seamless “point in time” transition**



100%
Paper notes
9th July 2017
9:00am



100% eCR
Electronic Clinical Records
9th July 2017
9:01am

- **No workflow disruption**
- **Facilitates eye-eye contact with the patient**
- **Reduced documentation time**
- **Medical Defence compliant !!!**

Not that difficult if the specification and functional requirements are defined

The (successful) outcomes are typically achieved for those who sets the design specifications!!

End user driven electronic clinical record development – *Critical Integrative Centrality* in the health care axis

Macropace eCR

(patents pending)