

1st International Conference on
**Healthcare Transformation:
Primary Care Focus**

**Leveraging IT's Potential in
Enhancing Patient Care**
- Tele-Radiology
- Electronic Medical Records

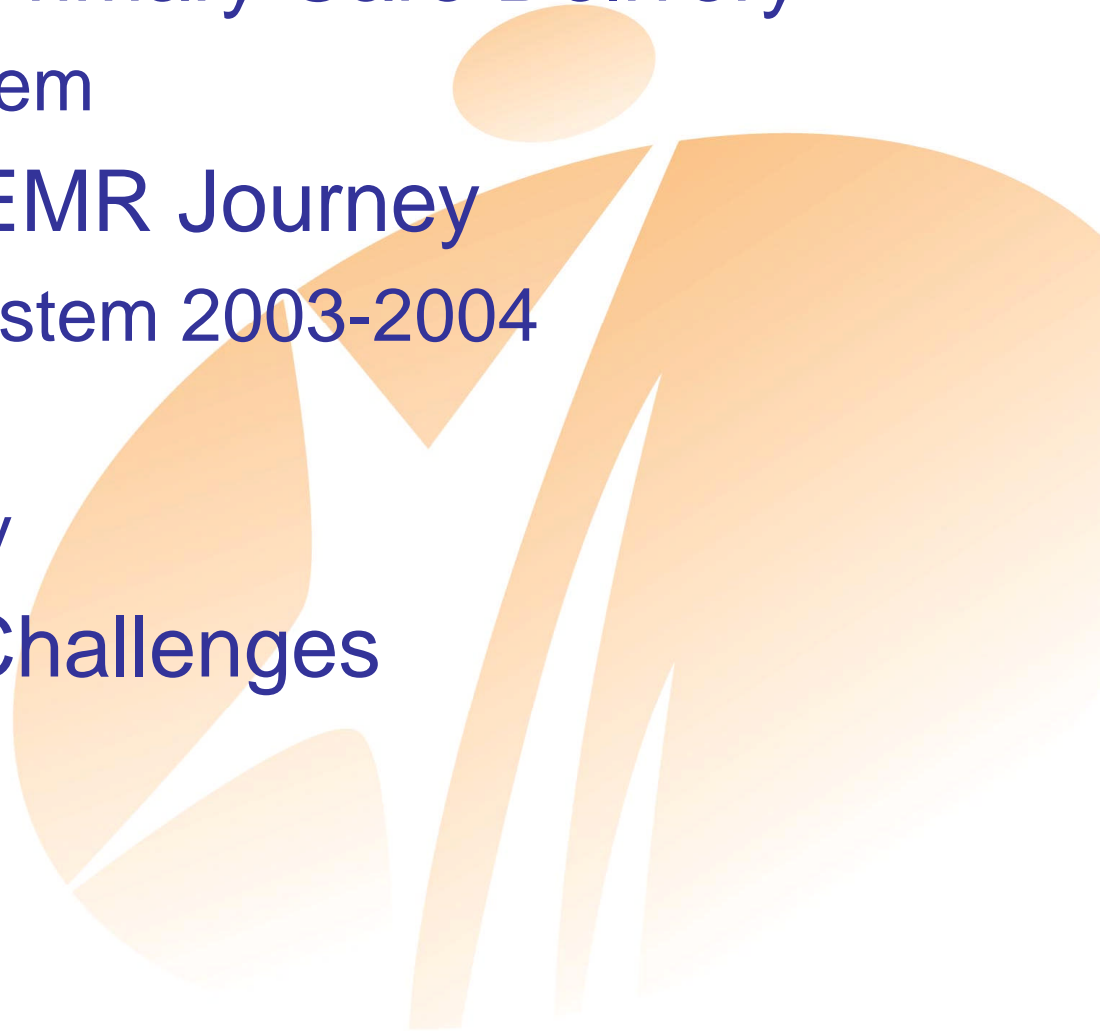
Dr Jonathan Phang

National Healthcare Group Polyclinics



Outline

- Challenges in Primary Care Delivery
 - The “Old” System
- NHGP IT and EMR Journey
 - New PMPA System 2003-2004
 - NHGP EMR
 - Tele-Radiology
- Rewards and Challenges
 - Future...



Challenges in Primary Care

Patients & Family

- Ageing Population
- Chronic Diseases
- Busy Schedules & Psychosocial Needs
- Expectations (Good, Fast, Value for money)

Care Providers

- Disease Prevention
- Health Promotion
- Clinical Quality
- Cost-effectiveness

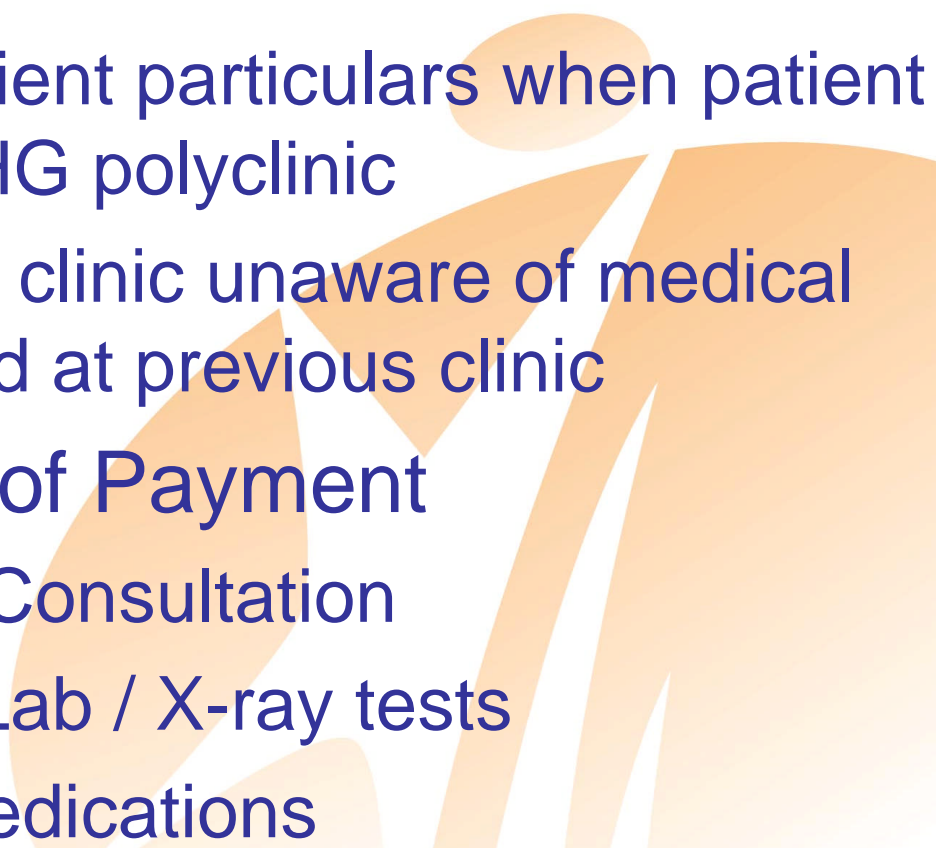
Treatment

- New Knowledge
- More Options
- More to Monitor
- More People involved

Care Delivery

- “Easier to do the Right Thing” – Safe, Effective, Efficient
- Care Co-ordination
- Healthcare Integration – Patient-centred health care team

The “Old” System

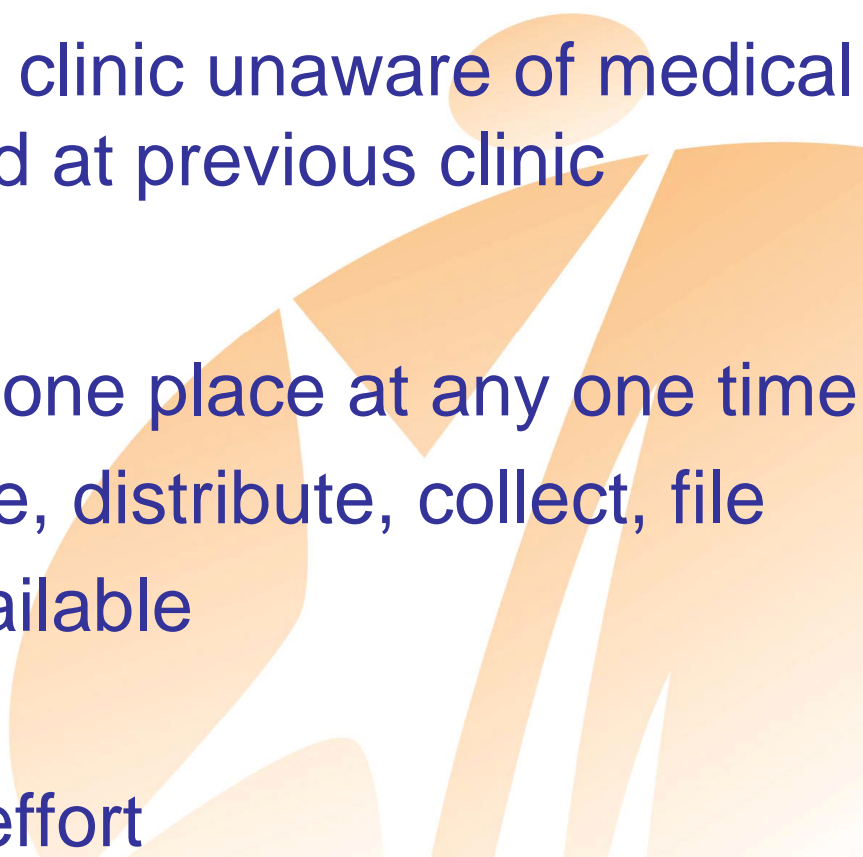
- Standalone Patient Master
 - Re-capture patient particulars when patient visits a new NHG polyclinic
 - Doctors at new clinic unaware of medical history captured at previous clinic
 - Multiple Points of Payment
 - Registration – Consultation
 - Diagnostics – Lab / X-ray tests
 - Pharmacy – Medications
- 

New PMPA System 2003-2004

- Replace 13-year old legacy system
 - One Registration
 - One Medical Record
 - One Bill (and Claims)
 - Includes Appointment & Queue modules
 - Includes Electronic Medical Certification



Problems with Paper Medical Records

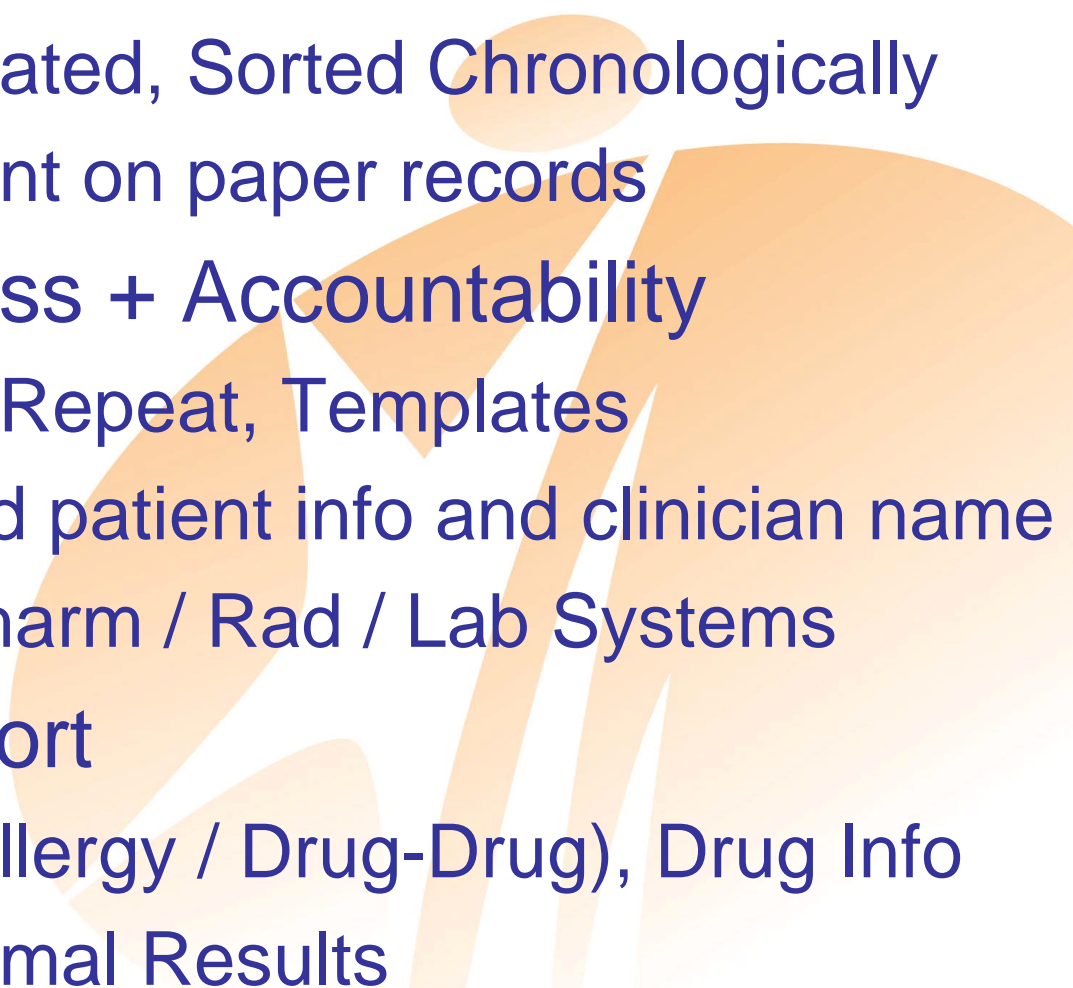
- Limited Online Clinical Information
 - Doctors at new clinic unaware of medical history captured at previous clinic
 - Paper Records
 - Can only be at one place at any one time
 - Effort to retrieve, distribute, collect, file
 - Missing / unavailable
 - Legibility
 - Duplication of effort
- 

NHGP EMR Objectives and Vision

- To deliver quality and efficient patient-centred primary care
 1. Online access to patient clinical information
 2. Better decision support for clinicians
 3. A paper-less environment



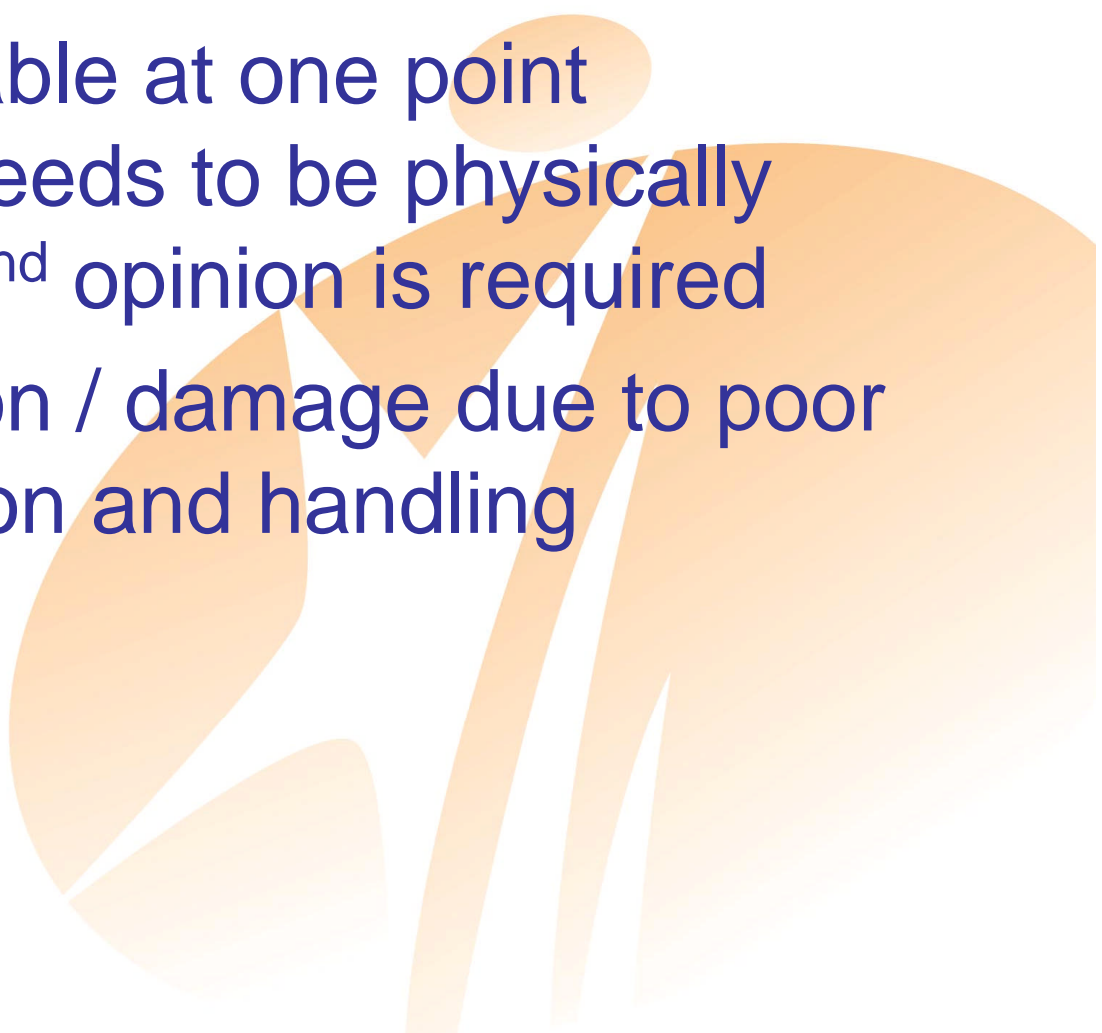
Benefits from New Processes

- Online Access to Clinical Information
 - Legible, Tabulated, Sorted Chronologically
 - Less dependent on paper records
 - Efficient Process + Accountability
 - Order Entry – Repeat, Templates
 - System printed patient info and clinician name
 - Interface to Pharm / Rad / Lab Systems
 - Clinician Support
 - Alerts (Drug Allergy / Drug-Drug), Drug Info
 - Alert on abnormal Results
- 

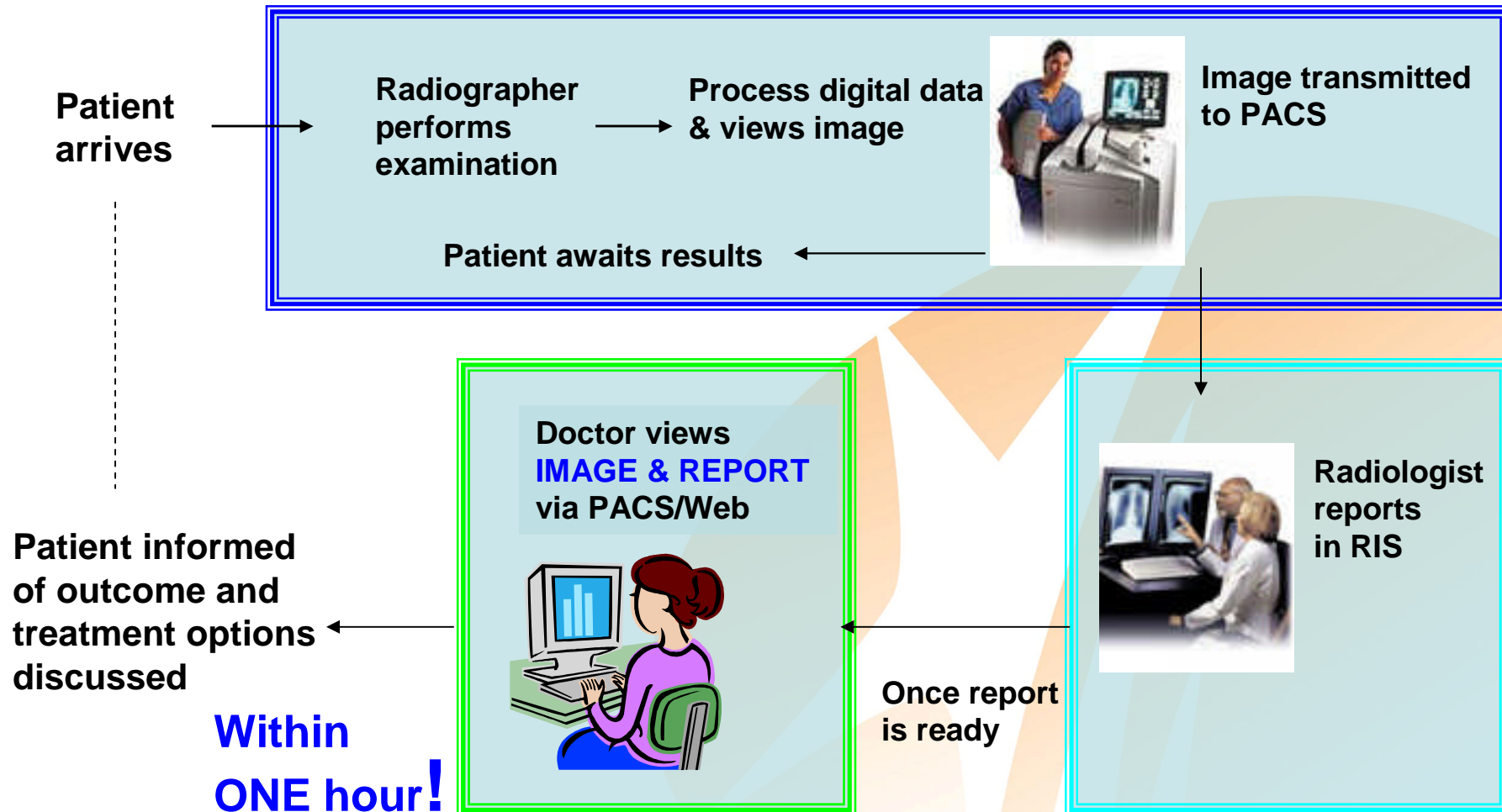
NHG Tele-Radiology



Problems with Old Workflow

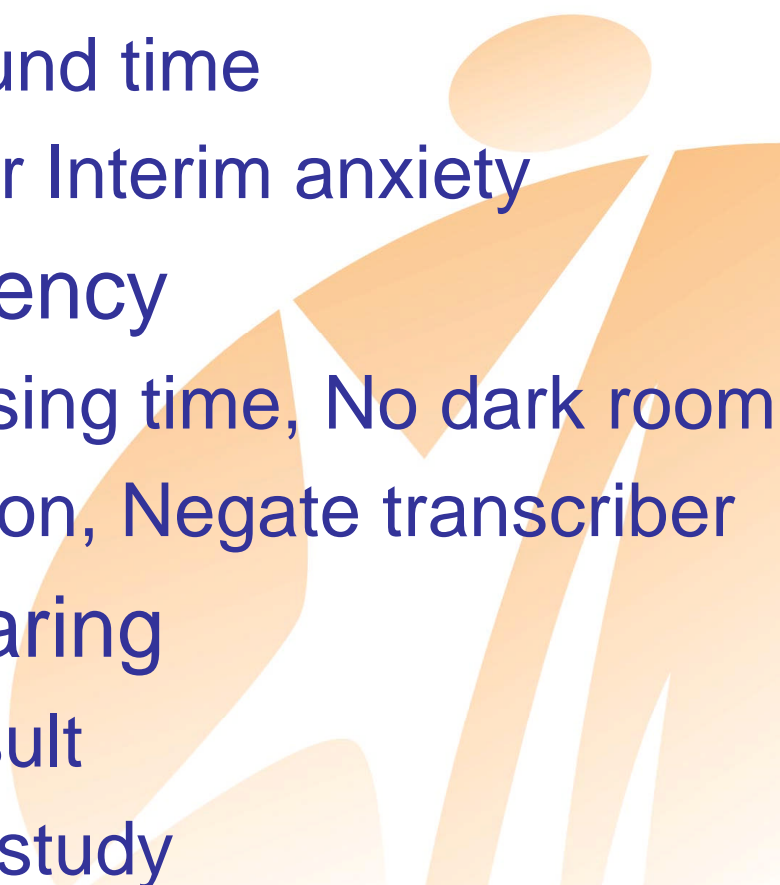
- Film lost in transition or during filing
 - Film only available at one point at one time – needs to be physically transported if 2nd opinion is required
 - Film degradation / damage due to poor storage condition and handling
- 

Tele-Radiology – New System / Flow

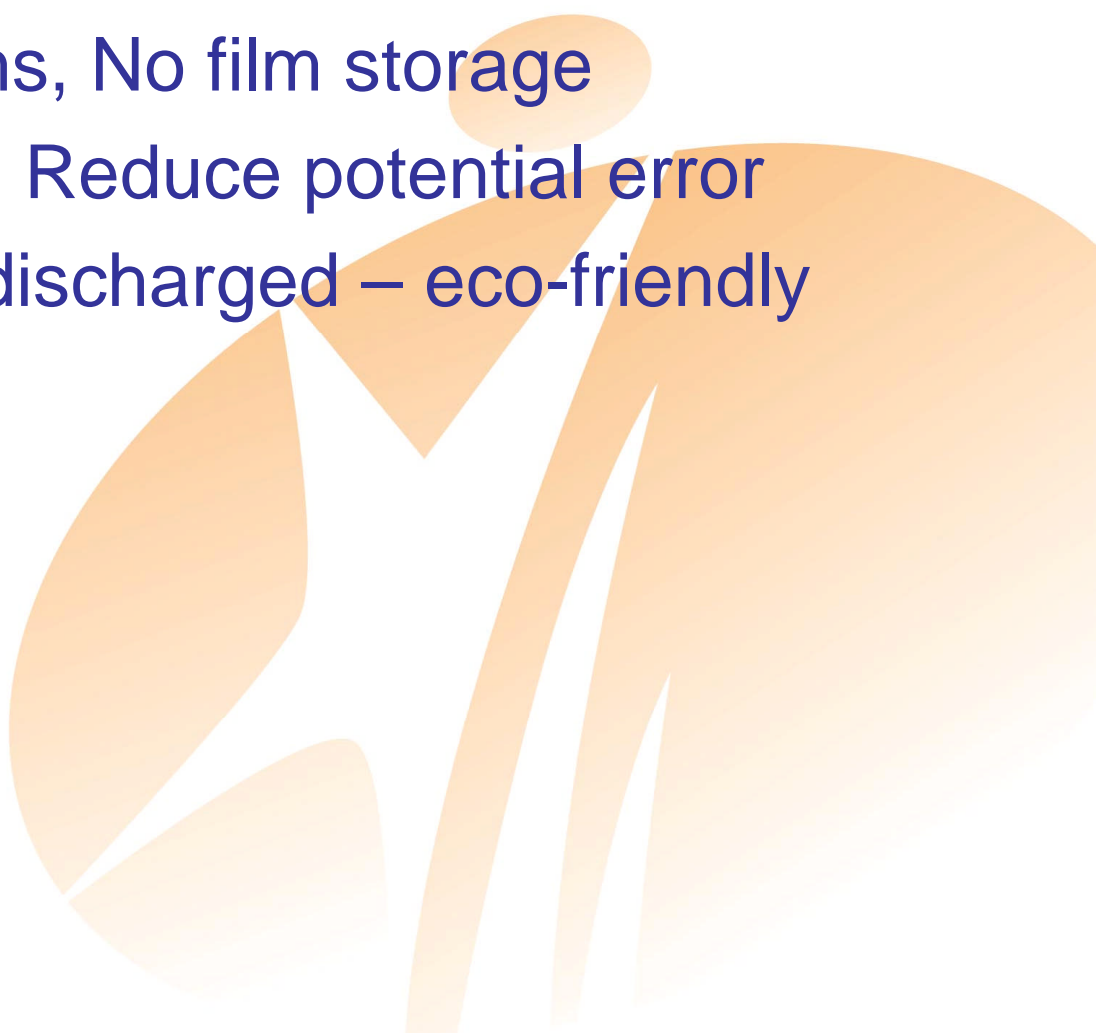


No more hard copy films!

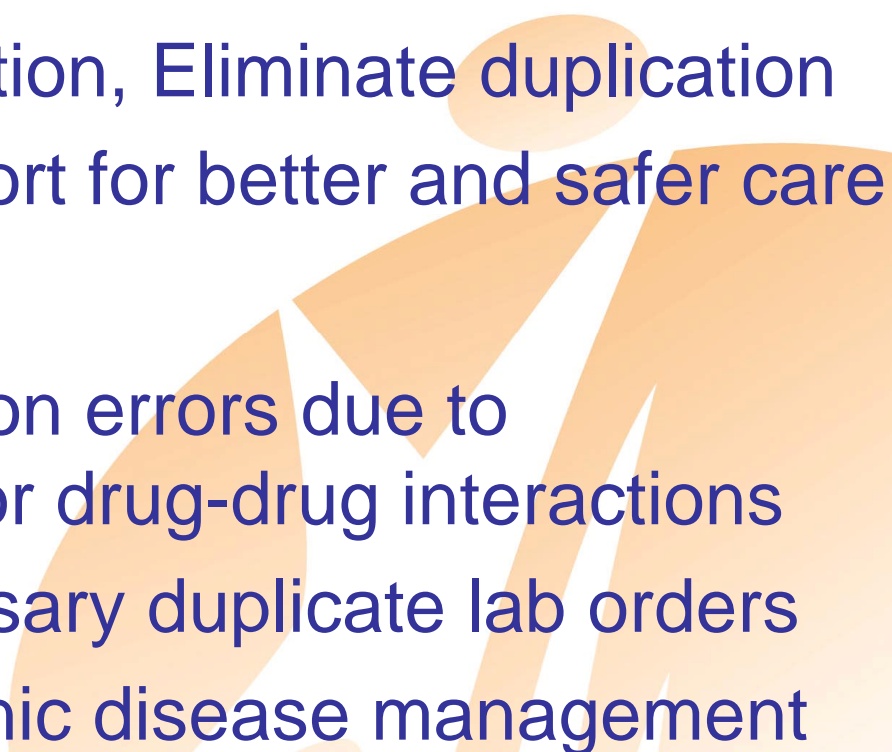
Benefits of New System / Flow

- Patient – Better Service Delivery
 - Faster turnaround time
 - No extra visit or Interim anxiety
 - Improved Efficiency
 - No film processing time, No dark room
 - Voice recognition, Negate transcriber
 - Knowledge Sharing
 - Real-time consult
 - Distance case study
- 
- A large, stylized orange silhouette of a person is positioned on the right side of the slide. The figure is composed of simple, rounded shapes for the head, torso, and limbs, creating a modern, abstract representation of a human figure. It is semi-transparent, allowing the text behind it to be partially visible.

Benefits of New System / Flow

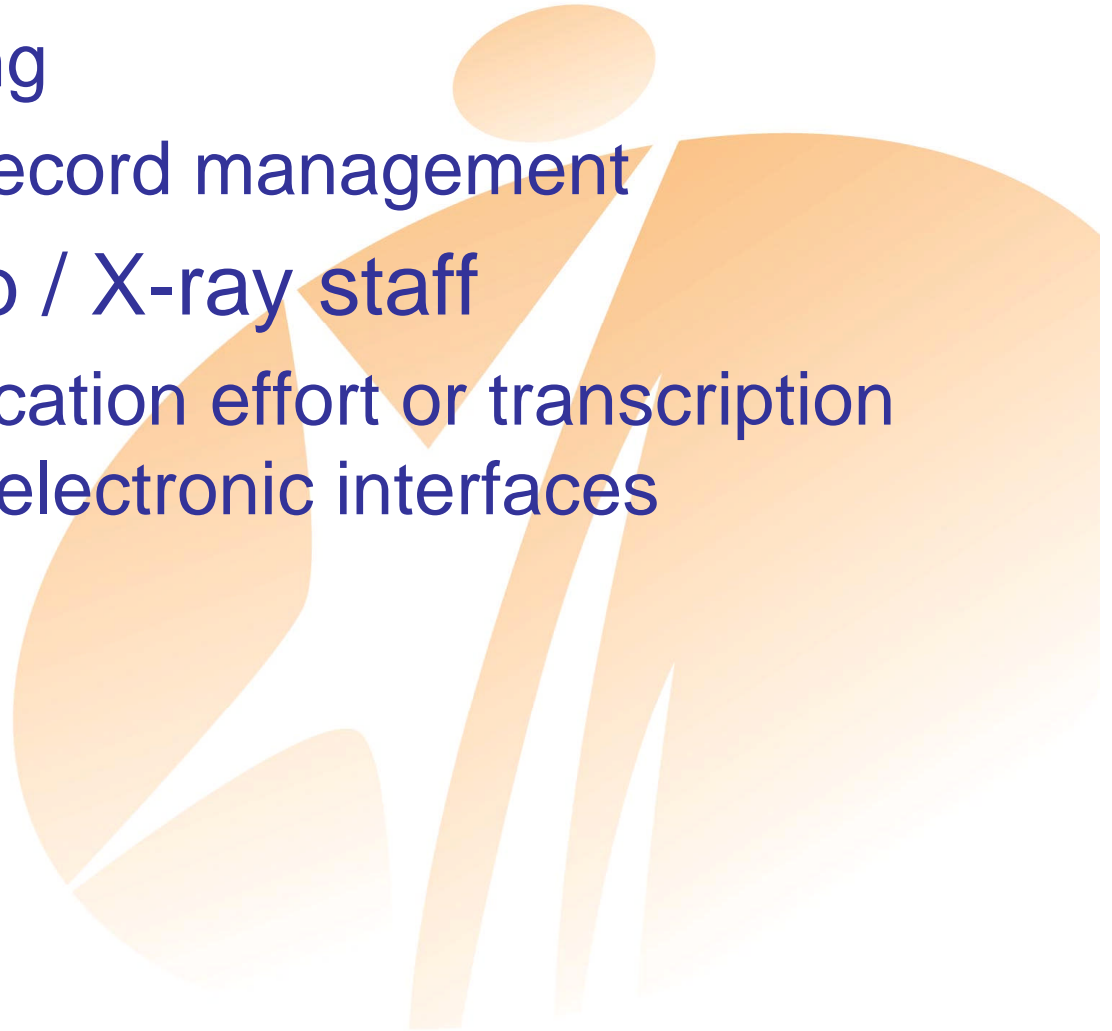
- No Films
 - No missing films, No film storage
 - No film sorting, Reduce potential error
 - No chemicals discharged – eco-friendly
- 

Rewards – now & future...

- Clinicians
 - Online Information, Eliminate duplication
 - Decision Support for better and safer care
 - Patient
 - Less prescription errors due to drug allergies or drug-drug interactions
 - Less un-necessary duplicate lab orders
 - Improved chronic disease management
- 

Rewards – now & future...

- Clinic MRO
 - Less paper filing
 - Less medical record management
- Pharmacy / Lab / X-ray staff
 - Eliminate duplication effort or transcription errors through electronic interfaces



Challenges & What Worked for Us

- Defining (Group) Requirements
 - Involve Stakeholders – HQ + Pilot Clinic
 - Design – Process / Logic / Screens
 - IT Expertise & Expenditure
 - NHG family – Economies of Scale
 - NHG IT Analysts and Development Team
 - Cost-effective – functional
 - Attributes of Good IT System
 - User-friendly, Fast response time
 - Reliable
- 

Challenges & What Worked for Us

- Change Management
 - How will the new system make it easier (and safer) for “the user” in care delivery?
 - Site-Preparation – installation, equipment
 - User Training – less if more user-friendly
 - IT Support – responsive
 - Allow period of learning curve for users
 - Monitor Usage Statistics – track progress
 - Walking the ground – help “silent sufferers”
 - Listen to user feedback

Future in Healthcare...

Patients & Family

- Ageing Population
- Chronic Diseases
- Busy Schedules & Psychosocial Needs
- Expectations (Good, Fast, Value for money)

Care Providers

- Disease Prevention
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- Clinical Quality
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Treatment

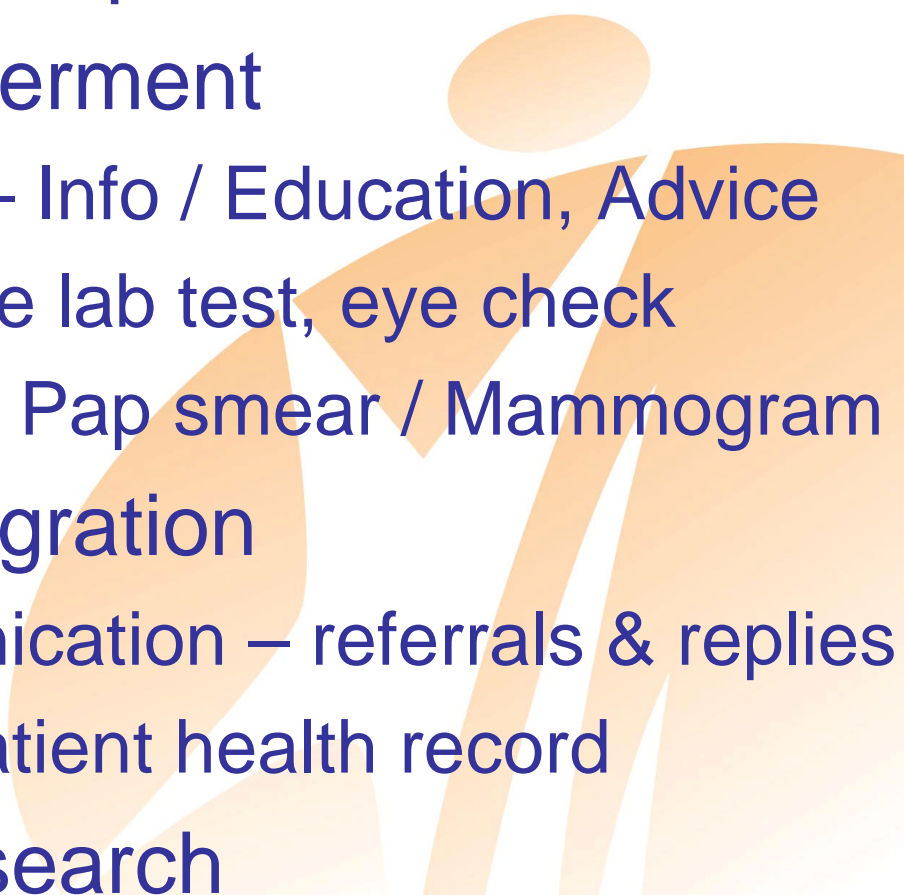
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Care Delivery

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Patient Involvement /
Empowerment
- Internet, Mobile

Future in Health IT...

- Clinical Quality Improvement
 - Patient Empowerment
 - Patient Portal – Info / Education, Advice
 - Prompt overdue lab test, eye check
 - Prompt due for Pap smear / Mammogram
 - Healthcare integration
 - Better communication – referrals & replies
 - Longitudinal patient health record
 - Healthcare Research
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- A large, stylized orange silhouette of a person is positioned on the right side of the slide. The figure is composed of simple, rounded shapes for the head, torso, and limbs, creating a minimalist and modern aesthetic. It is semi-transparent, allowing the text behind it to be partially visible.

Thank you

