

Information and Communications Technology in support of NHI



4th Biennial Conference

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Introduction



- The Health system in South Africa is undergoing transformative changes
- Appropriate information systems form the basis of successful NHI implementations
- How is the CSIR, from an ICT perspective, supporting the transformation of the health system in South Africa?
- Two national strategic initiatives:
 - Development of a Normative Standards Framework for eHealth in South Africa
 - NHI population enrolment and linkage to facilities

eHealth definition

World Health Organisation defines eHealth as “the use of ICTs for health to, for example, treat patients, pursue research, educate students, track diseases, and monitor public health.”

Electronic Health Records

Vital Registrations

Consumer Health Informatics

Mobile health (mHealth)

Telemedicine

“Historically, health information systems in South Africa have been characterised by fragmentation and lack of coordination, prevalence of manual systems and lack of automation, and where automation existed, there was a lack of interoperability between different systems.”

Dr. Aaron Motsoaledi,
Minister of Health,
eHealth Strategy South Africa, 2012-2016



Normative Standards Framework (NSF) for eHealth in South Africa

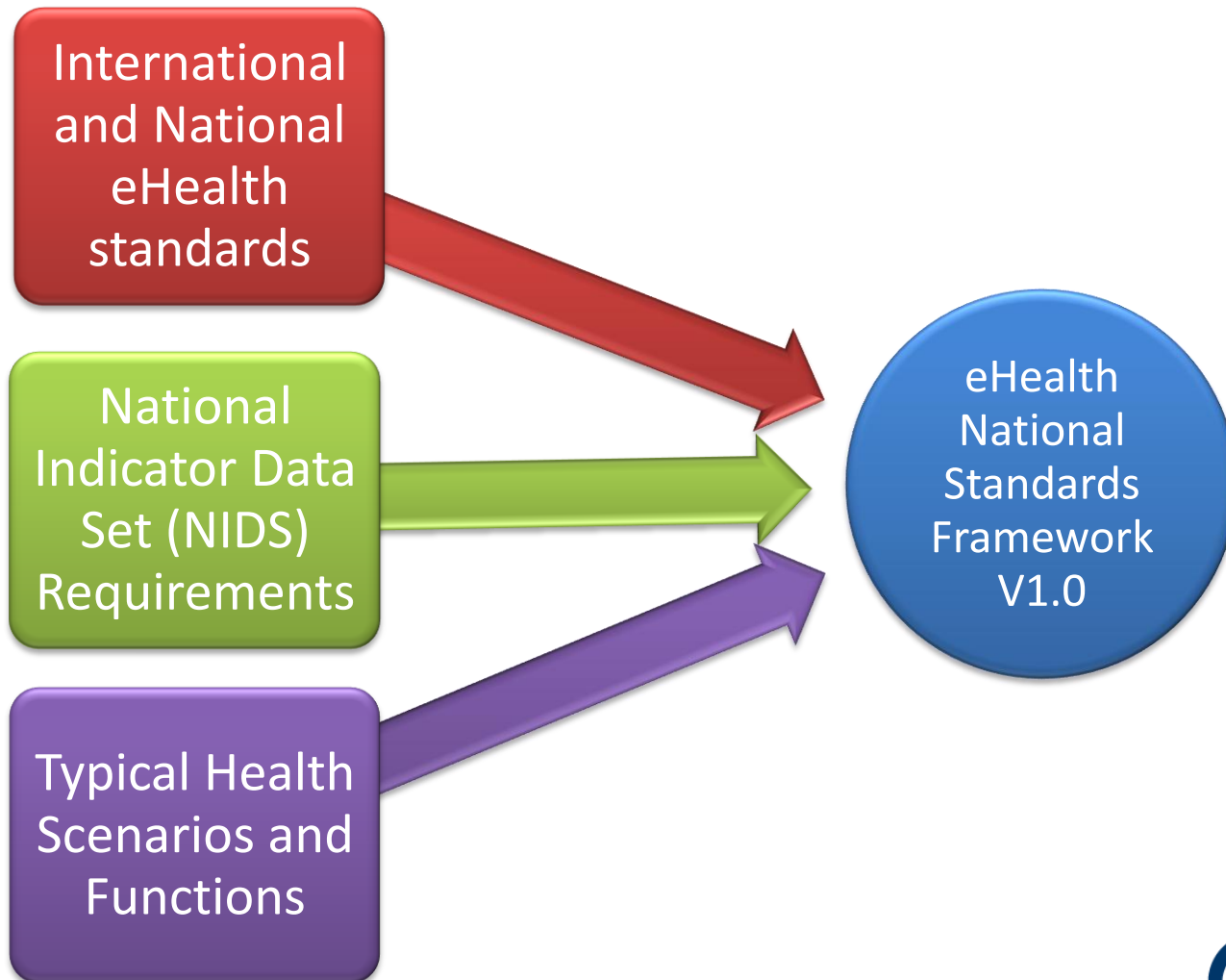
Commissioned by the National
Department of Health

*CSIR Meraka, Medical Research Council,
Nelson Mandela Metropolitan University*

eHealth: Interoperability

- Prevalence of heterogenous systems – lack of interoperability
- One of the mechanisms to achieving interoperability of eHealth systems is standards
- Challenges:
 - Systems involve large and disparate data sets including multimedia diagnostic images, patient records, test results, research samples, financial codes, etc.
 - eHealth standards do not address one unified area of technology but multiple areas
 - The eHealth standards arena involves competing or overlapping standards initiatives taking place in different institutions
- Project Objective: ***to establish a National Normative Standards Framework for eHealth; thereby ensuring interoperability of health information systems***

Normative Standards Framework - Process

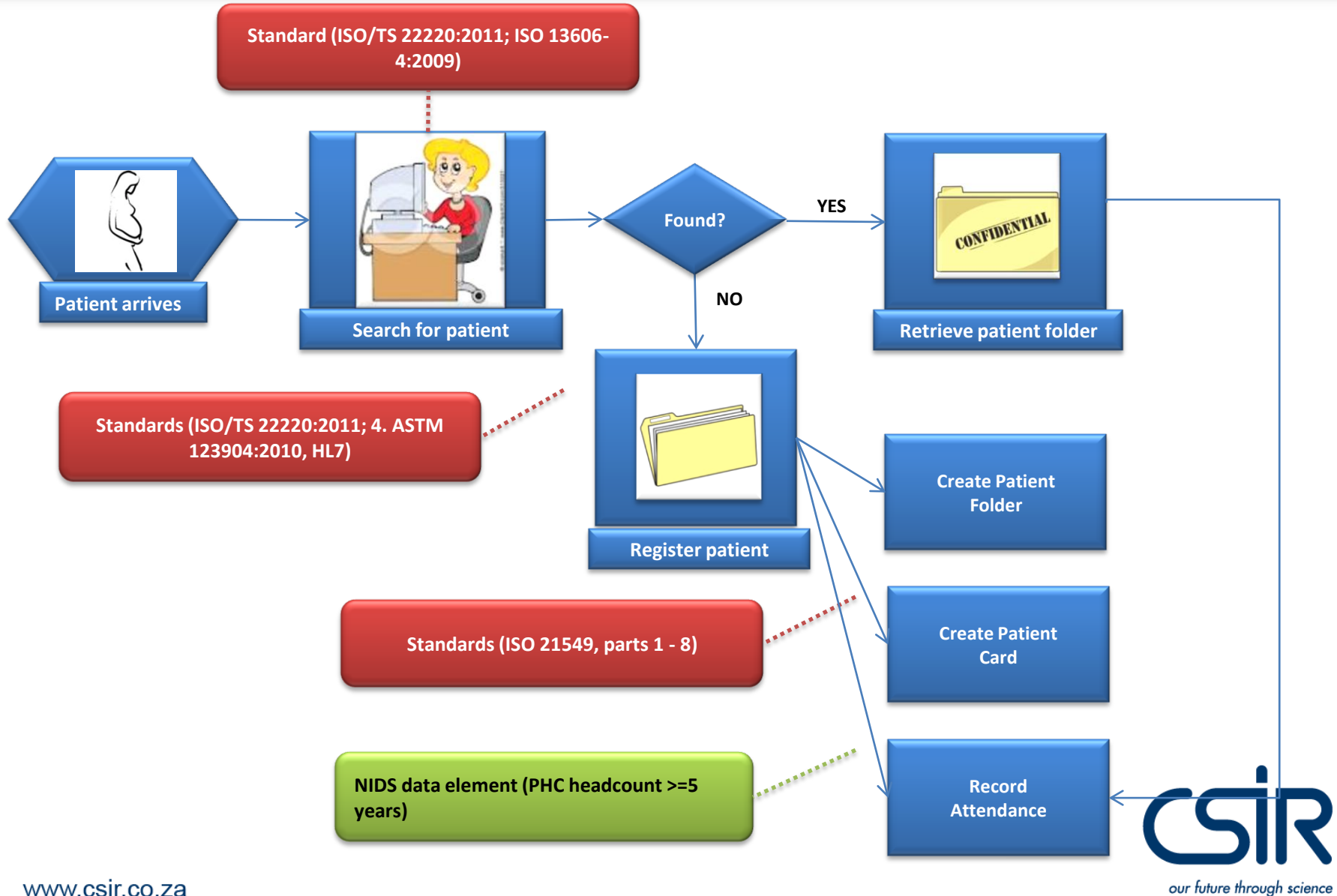


Example of typical health scenario

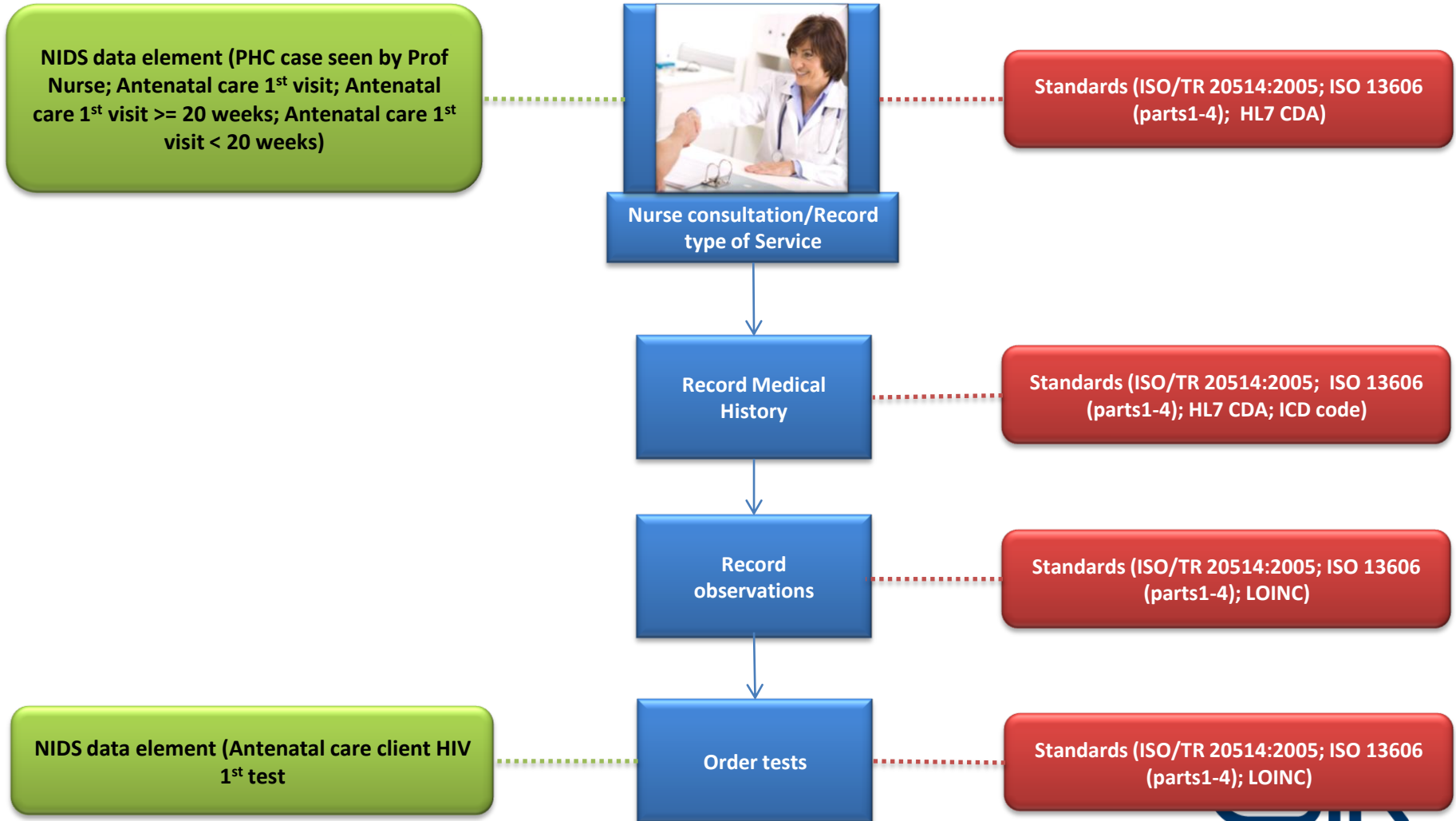


Consultation –
pregnant woman who is diabetic

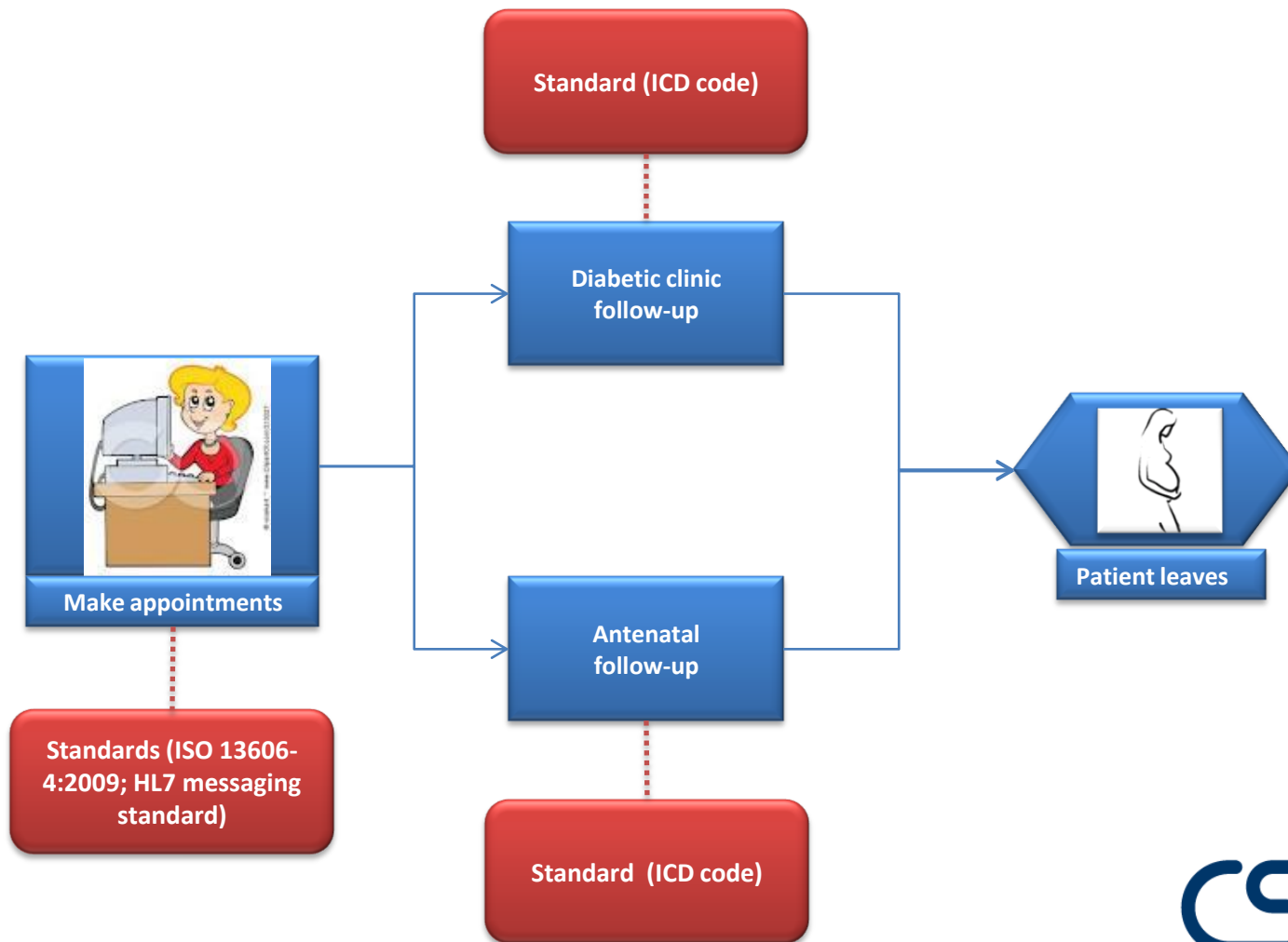
Patient registration related standards



Consultation standards



Schedule appointment standards



Categories of eHealth Standards

Identifier
Standards

Electronic
Health Record
Standards

Health Smart
Card Standard

Messaging
Standards

Structure and
Content
Standards

Terminology and
Classification
Standards

Security and
Access Control
Standards

Recommended Standards

Standard	Description
ISO/TS 22220:2011	Identification of subjects of health care
ISO/TR 20514:2005	Electronic Health Record – Definition, Scope and Context
ISO 13606 (1- 4)	Electronic health record communication (Part 1 - 4)
ISO 18308:2011	Requirements for an Electronic Health Record Architecture
ISO 21549 (1- 8)	Patient Healthcard Data – (Part 1- 8)
ISO 170090 (1 – 3)	Public Key Infrastructure (Part 1 – 3)
ISO/TS 27527:2010	Provider Identifier Standard
HL7	Health Level Seven
DICOM	Digital Imaging and communication in medicine
HL7 CDA	Clinical document architecture
HL7/ASTM standard	Continuity of Care Document (CCD)
ICD Codes	International classification of diseases codes
SNOMED CT	Systematized nomenclature of medicine – clinical terms
LOINC	Logical observation identifiers names and codes
NAPPI	National pharmaceutical product index
ICHI	International Classification of Health Intervention
CPT	Current Procedure Terminology
MIOS 5.0	SITA – Minimum Interoperability Standards for SA Govt. systems

Next Steps

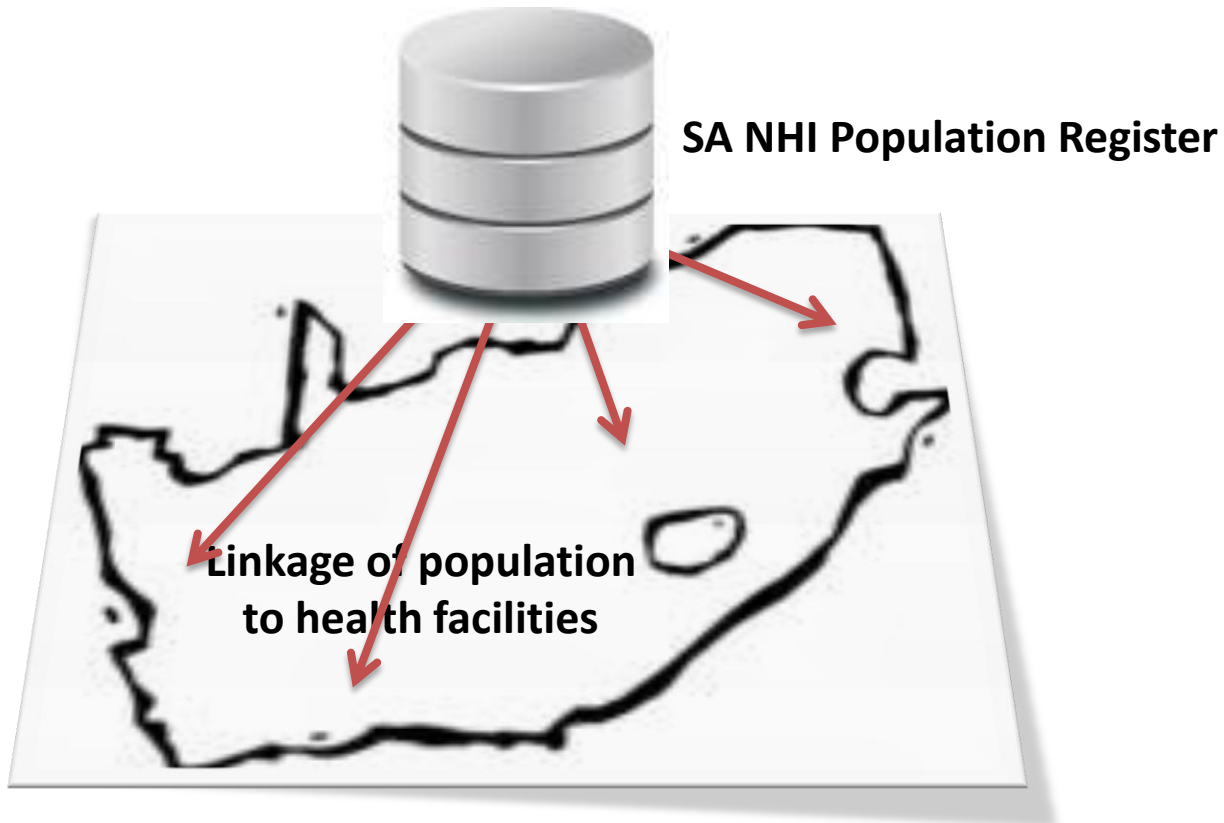
- Approval of Normative Standards Framework V1.0 – NDoH
- Development of an assessment tool
- Audit of existing health information systems against NSF using assessment tool
- Recommendations for roadmap towards interoperability

NHI Population Enrolment and Linkage to Facilities

Commissioned by the National
Department of Health

Meraka, DPSS, BE, MDS

Project Objective



NHI population enrolment and facility linkage - Process

Initialisation of the NHI population register

- DHA
- DoH
- Other sources, e.g. IEC, census, etc.
- Assessment of facility linkages

NHI population register design

- Enterprise engineering approach
- Use TOGAF model
- Bus. requirements
- Technology requirements

NHI PR Demo

NHI PR requirements;
Gaps in existing data sources;
Strategy for filling in gaps;
Pilot implementation;
Lessons learned;
Acquisition Strategy



Conclusion

- NDoH is leading the transformation of the South African health system and is at the forefront of unlocking the power of ICTs to support the 'new' health system in South Africa – CSIR supporting this transformation with key strategic projects
- South African eHealth vision – **“a fully automated and integrated health information system”**

Thank you

