Challenges in the Clinic-Laboratory-Interface

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Why worry about the laboratory?

- Clinicians rely on a variety of skills
    - Clinical examination
    - Special investigations
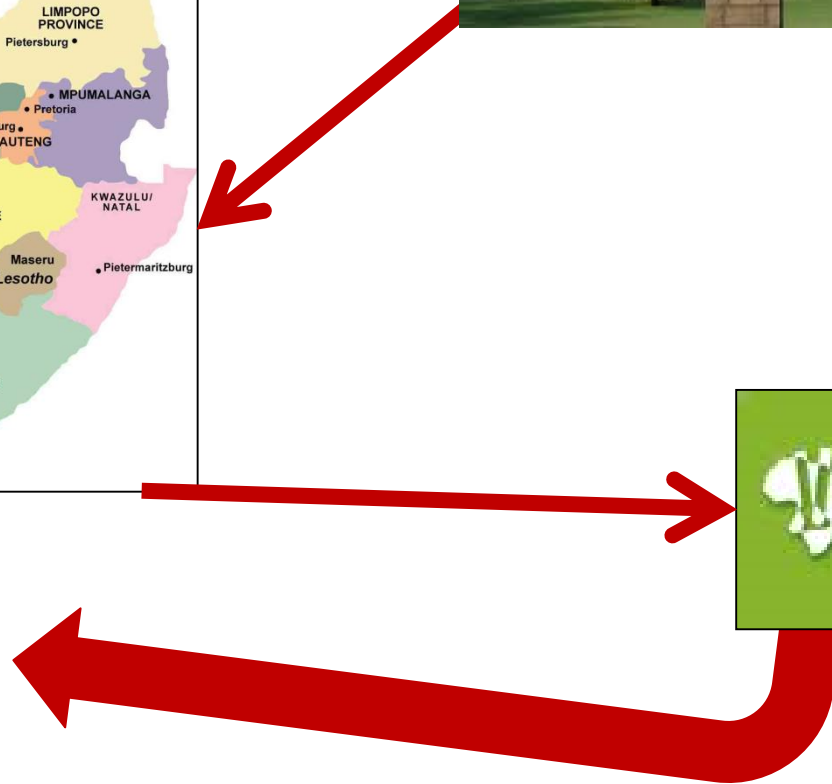   - Intuition?

Pathology tests

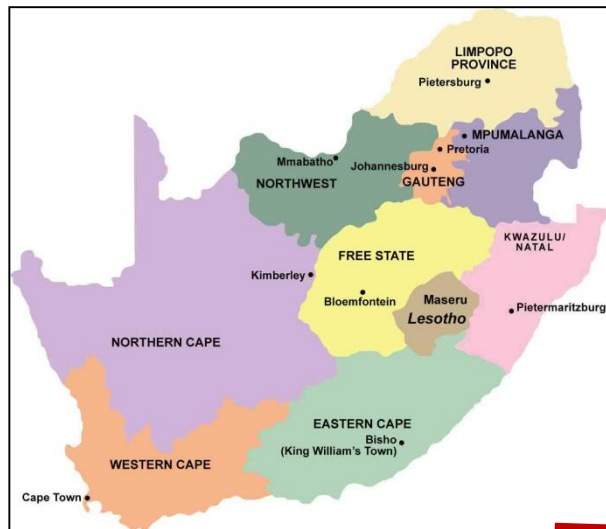- Clinical decisions -diagnosis and monitoring
    - Developed countries   - 70%
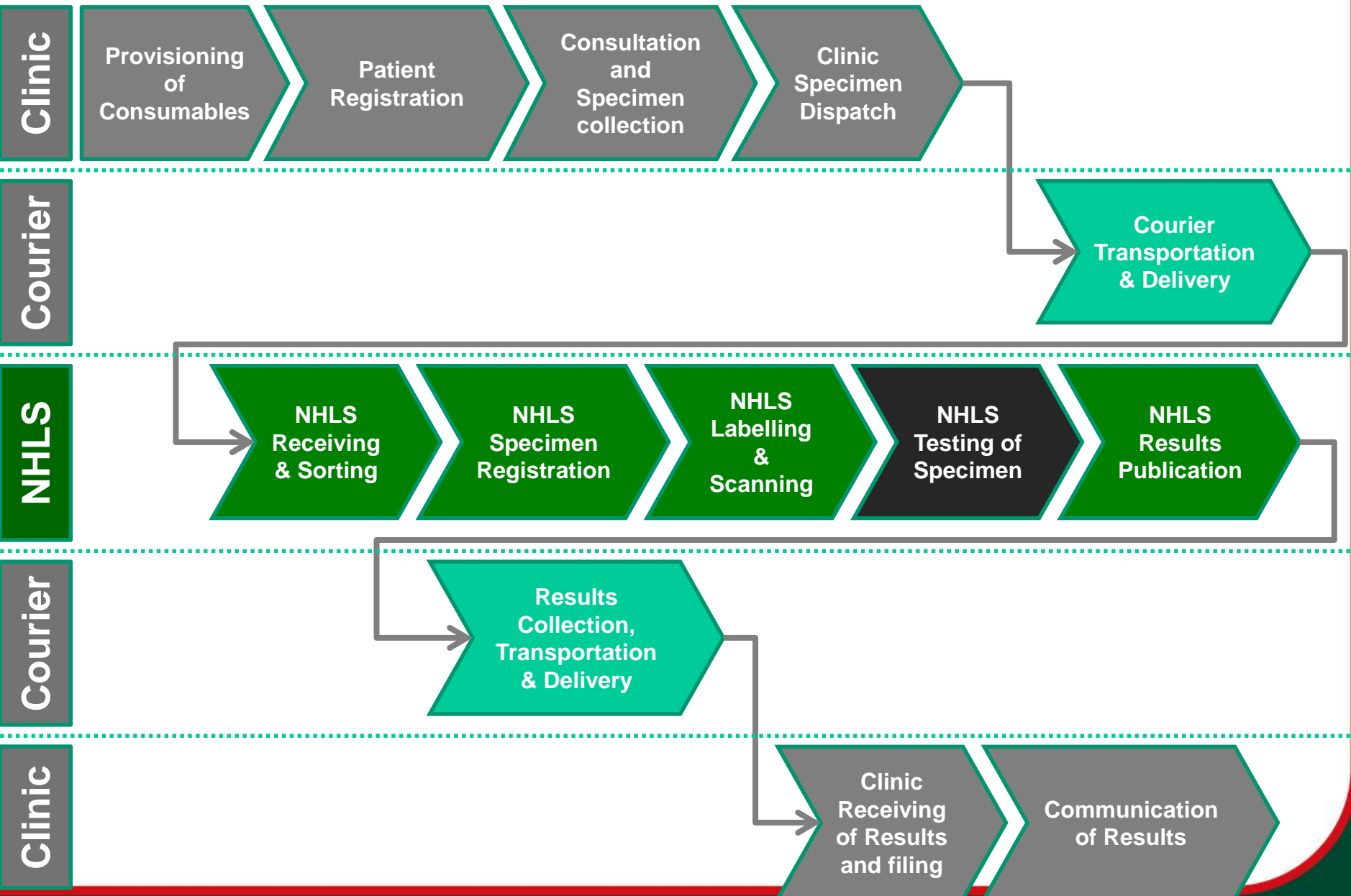   - African countries   - 20%

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Why Clinic-Laboratory Interface?

- Complex
  - Systems approach

SA - Clinic-Laboratory Interface

Laboratory Process Value Chain

Clinic
- Provisioning of Consumables
- Patient Registration
- Consultation and Specimen collection
- Clinic Specimen Dispatch

Courier
- Courier Transportation & Delivery

NHLS
- NHLS Receiving & Sorting
- NHLS Specimen Registration
- NHLS Labelling & Scanning
- NHLS Testing of Specimen
- NHLS Results Publication

Courier
- Results Collection, Transportation & Delivery

Clinic
- Clinic Receiving of Results and filing
- Communication of Results
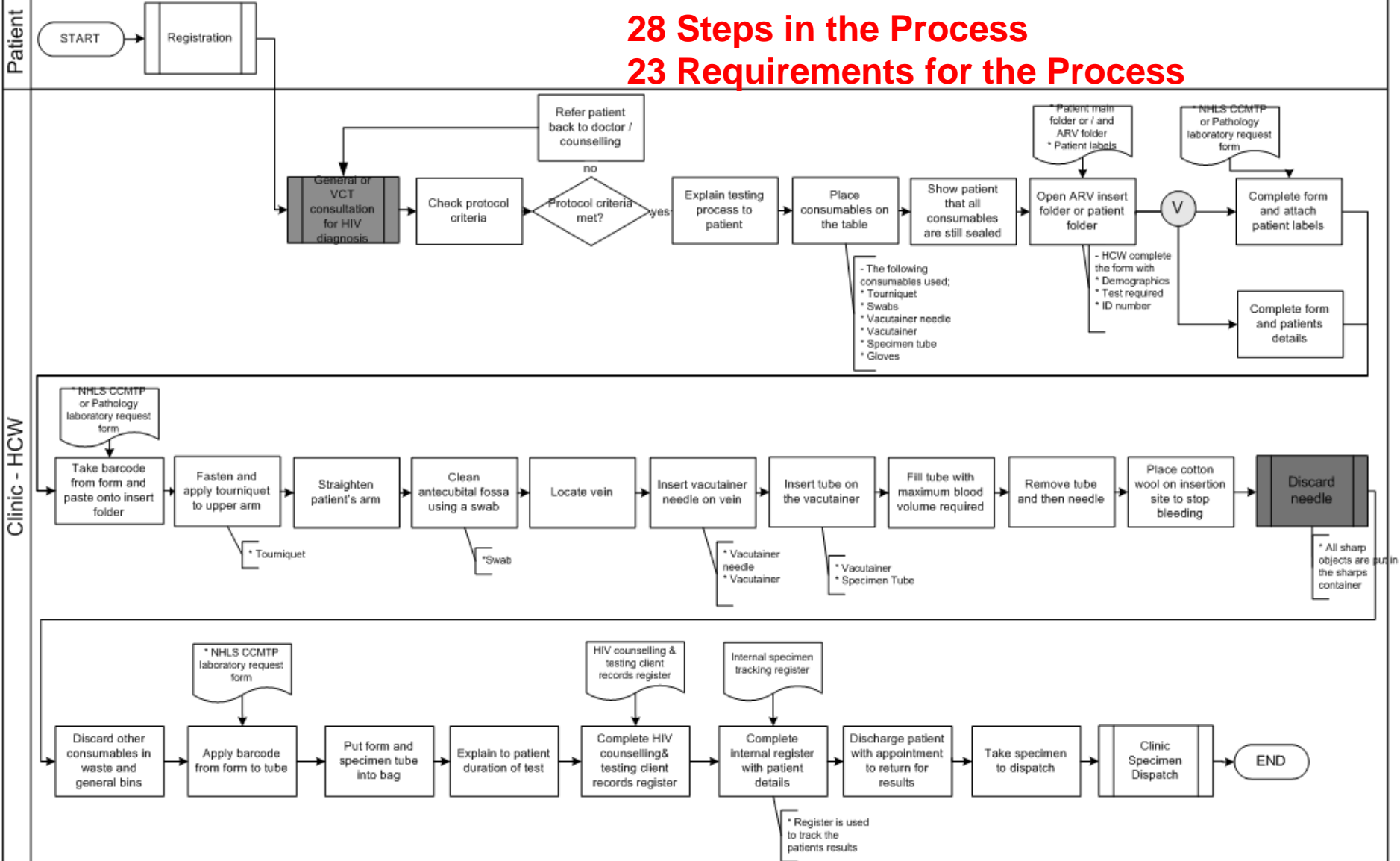
Specimen Collection : HIV and General Blood

28 Steps in the Process
23 Requirements for the Process

Data is limited on performance

Pre-analytic and post-analytic
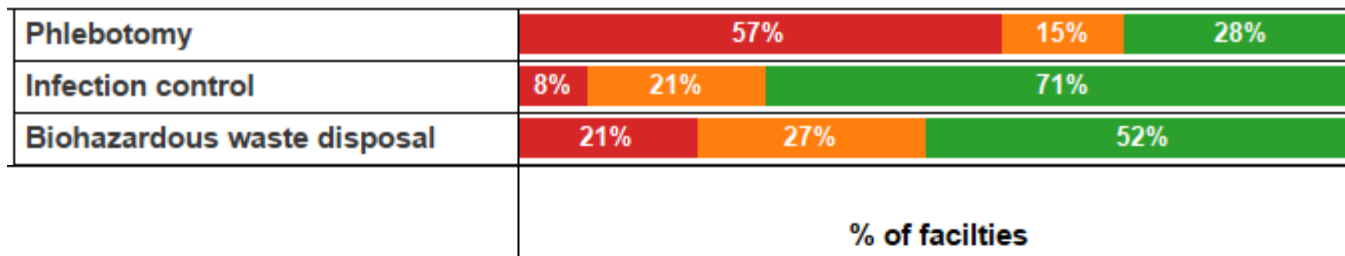
1: Guidance documents
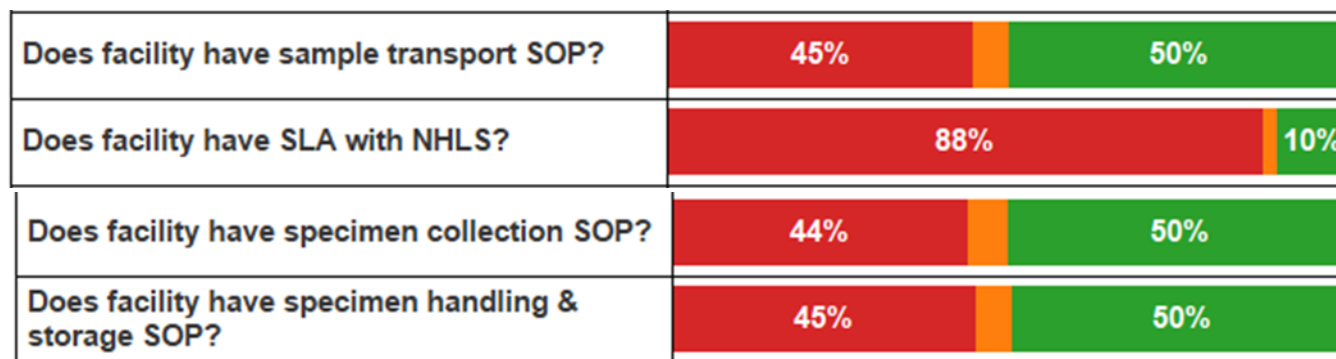
2: HCW training on specimen collection

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Guidance Documents

SOP`s/ Guidelines/ Policies

	% of facilties
Phlebotomy	57% / 15% / 28%
Infection control	8% / 21% / 71%
Biohazardous waste disposal	21% / 27% / 52%

Results
- 🟩 **Adequate/ Present**
- 🟧 **Partial/ Problematic**
- 🟥 **Poor/ Absent**

5 districts
E. Cape and KZN

Does facility have sample transport SOP?	45% / 50%
Does facility have SLA with NHLS?	88% / 10%
Does facility have specimen collection SOP?	44% / 50%
Does facility have specimen handling & storage SOP?	45% / 50%

5 districts
L/NW/G/WC

Training Activities

Training

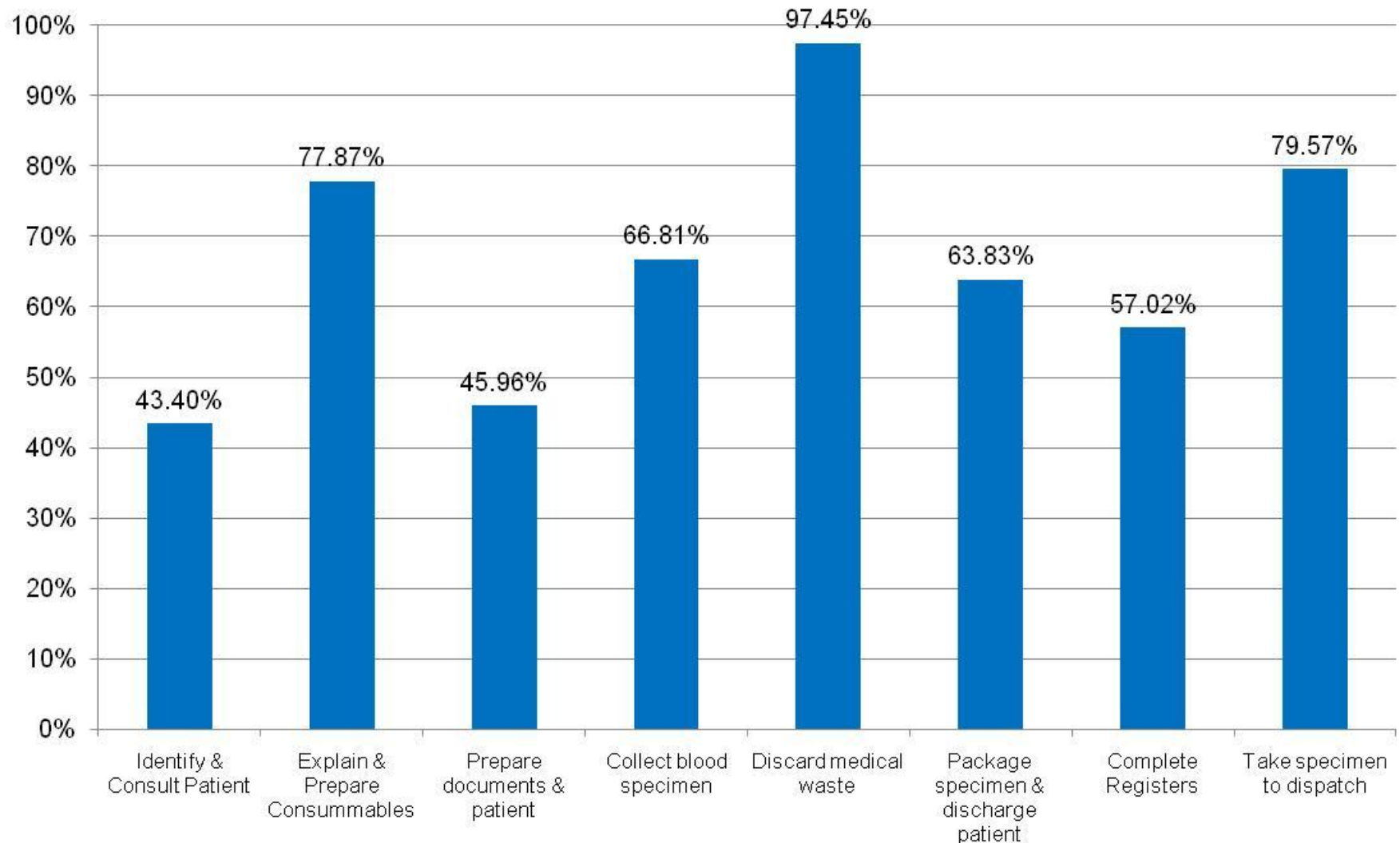|	% of facilties
Phlebotomy & specimen collection	64% — 30% — 5%
Specimen handling & storage	77% — 18%
Infection control	34% — 34% — 33%
Biohazardous waste disposal	43% — 29% — 29%

Results
- 🟩 Adequate/ Present
- 🟧 Partial/ Problematic
- 🟥 Poor/ Absent

5 districts
E. Cape and KZN

Specimen Collection – HIV and General Blood Process Compliance – at Activity Group level (National)

Results management

1: Getting the result back to the patient

2: Reviewing process

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Communication Technology

Email access	64% / 24% / 12%
Fax access	47% / 29% / 24%
Telephone access	15% / 10% / 75%
	% of facilties

5 districts
E. Cape and KZN

Method of receiving lab test results- Paper	96%
Method of receiving lab test results- SMS Printer	90% / 10%
	% of facilties

5 districts
L/NW/G/WC

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Results Management

Question	Red	Orange	Green
Does the facility access results electronically?	70%	15%	15%
Does the facility Forum to review lab support services with NHLS and or DOH?	73%		26%
Does the facility have SOP or system to follow up outstanding results?	23%		70%
Does the facility have SOP or system to monitor results TAT?	10%	18%	72%
Does the facility have SOP or system to recieve, record & file results?	19%	10%	71%

5 districts
E. Cape and KZN

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Results Management

Laboratory test results management

	Absent/ Partial	Adequate/ Present
Test requested in Specimen Tracking Register	58%	42%
Result alerts for abnormal/ urgent specimens	40%	60%
Trouble-shooting: identify & resolve results	58%	42%
	% of facilties	

Results
- ■ **Adequate/ Present**
- ■ **Absent/ Partial**

5 districts
E. Cape and KZN

Quality Management

Quality improvement system

QMS/QA/QI plan	22%	30%	48%
Collection & reporting performance data	31%	41%	28%
Performance data review	37%	40%	23%
	% of facilties		

Results
- ■ **Adequate/ Present**
- ■ **Partial/ Problematic**
- ■ **Poor/ Absent**

Laboratory test utilisation review

Pattern of expenditure of lab testing	82%	15%	
Adequacy/rejected specimens sent to lab	45%	41%	13%
TAT from dispatch to results received	53%	35%	11%
Trouble shooting	48%	34%	18%
	% of facilties		

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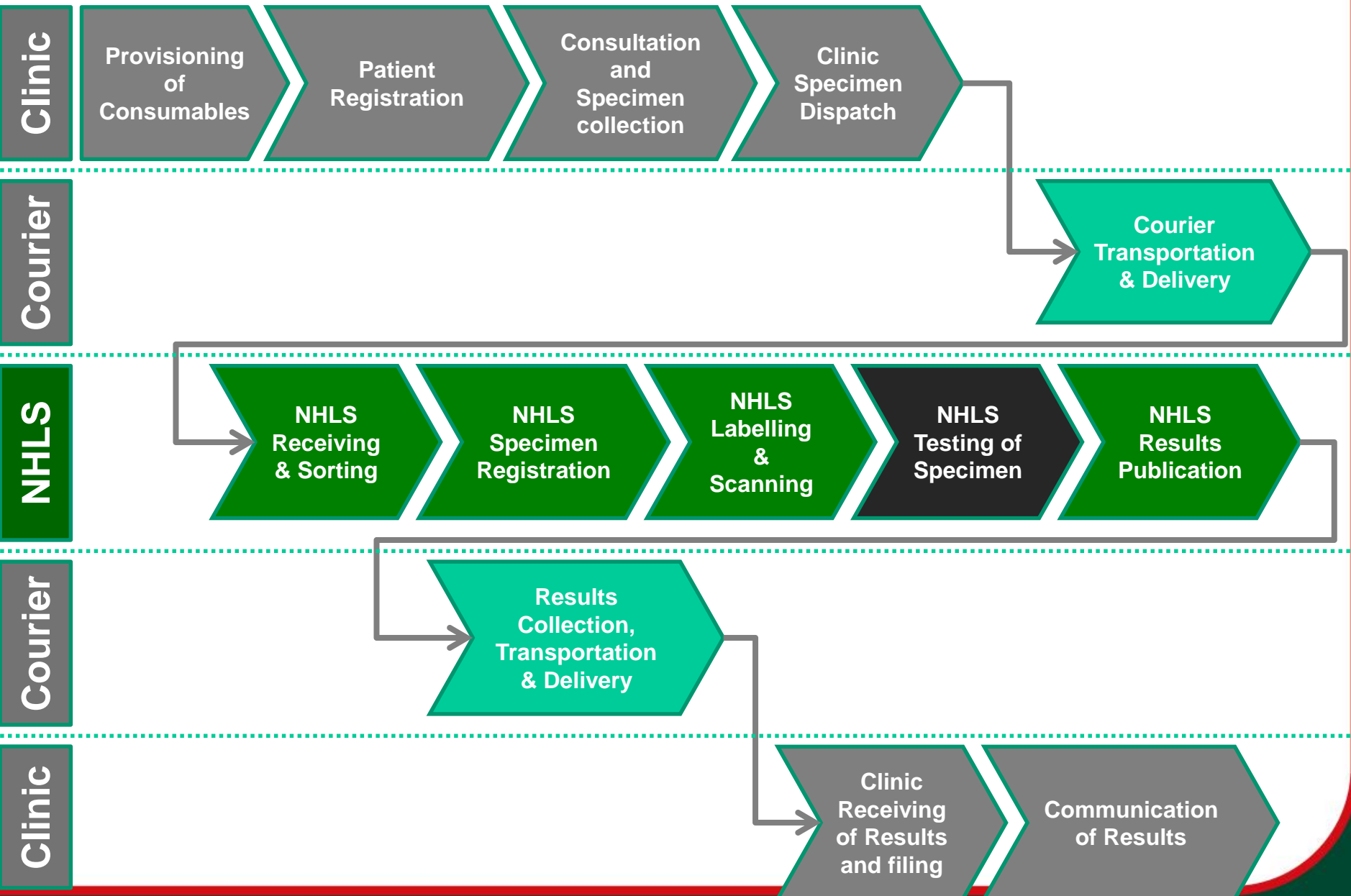Strategic Evaluation, Advisory
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CLI – overarching consensus

- Laboratory 'value-chain'

  – does not function optimally
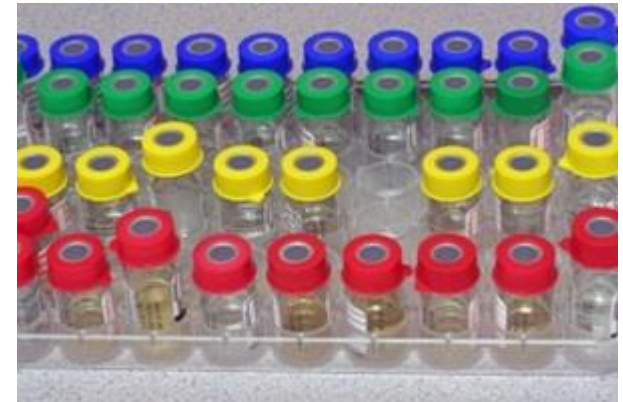
- Often not a "laboratory" issue

- Interface

What are the factors inhibiting the CLI?

1: where is problem?

2: responsible agency?

Laboratory Process Value Chain

Clinic

Provisioning of Consumables → Patient Registration → Consultation and Specimen collection → Clinic Specimen Dispatch

Courier

Courier Transportation & Delivery

NHLS

NHLS Receiving & Sorting → NHLS Specimen Registration → NHLS Labelling & Scanning → NHLS Testing of Specimen → NHLS Results Publication

Courier

Results Collection, Transportation & Delivery

Clinic

Clinic Receiving of Results and filing → Communication of Results

Factors inhibiting the CLI

- Unique identifier

- Unique identifier

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- Unique identifier

Factors inhibiting the CLI

- Lack of systems approach

- Improved training

- Better usage of phlebotomists

  – Policy and practice

- Better review of laboratory services

  – By clinics and districts

- Better utilization of CDW

  – National / provincial

Factors inhibiting the CLI

- Optimized courier service
  - Anything is possible – cost/benefit

- Possible review of NHLS operating times

- Courier – maximize opportunity
  - Link courier to supply chain management
  - Stock management

- Improved IT/communications backbone
  - Partial / limited control within health
  - Urban / rural

Factors inhibiting the CLI
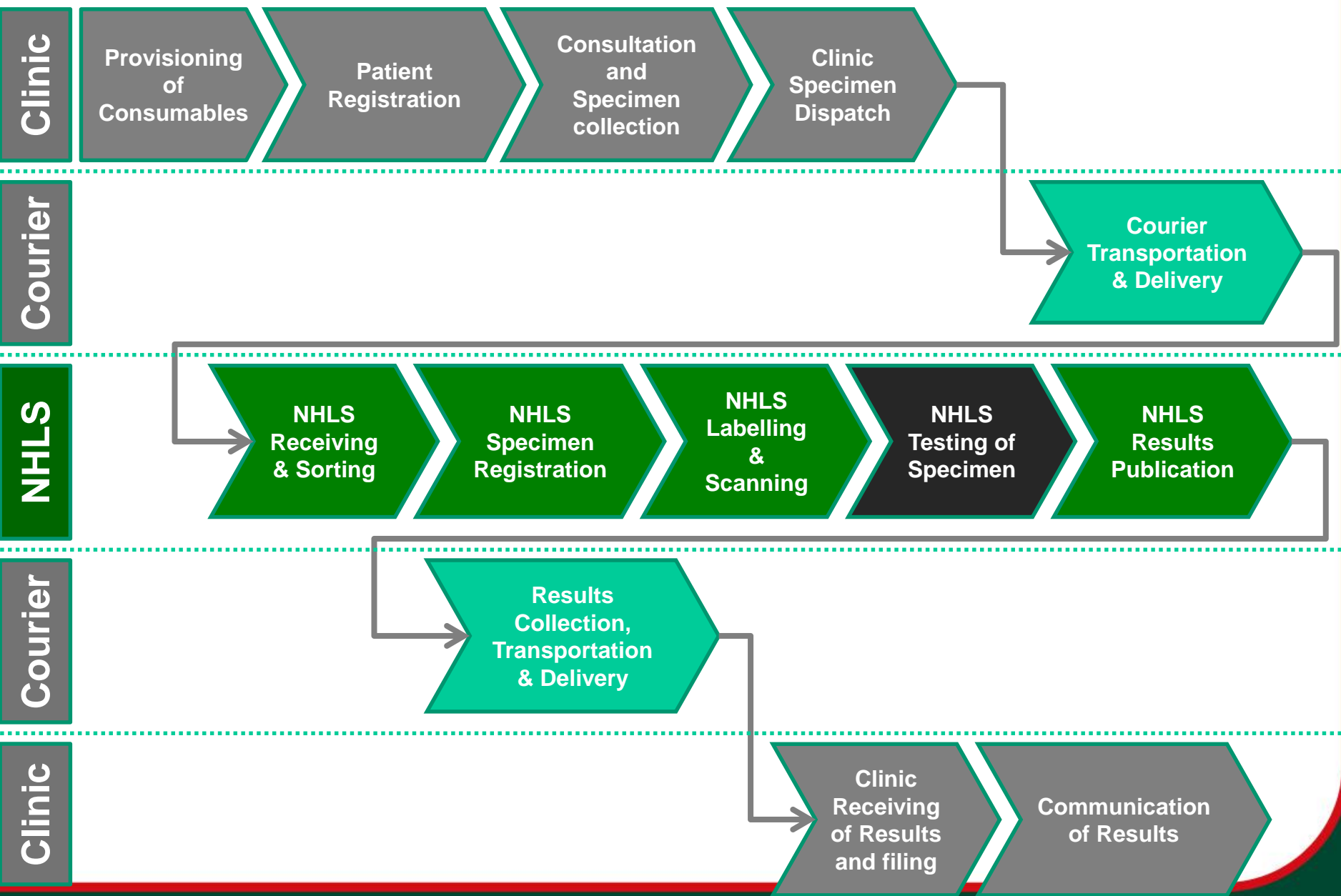
Over arching themes

- Communication

  - All levels

- QA across the entire value chain

  - Have to "own" the process

- HR across entire value chain

  - Task shifting / augment

- Appropriate space, storage, training

- More POCT responsibility to NHLS

  - Task dumping

  - Role of phlebotomists
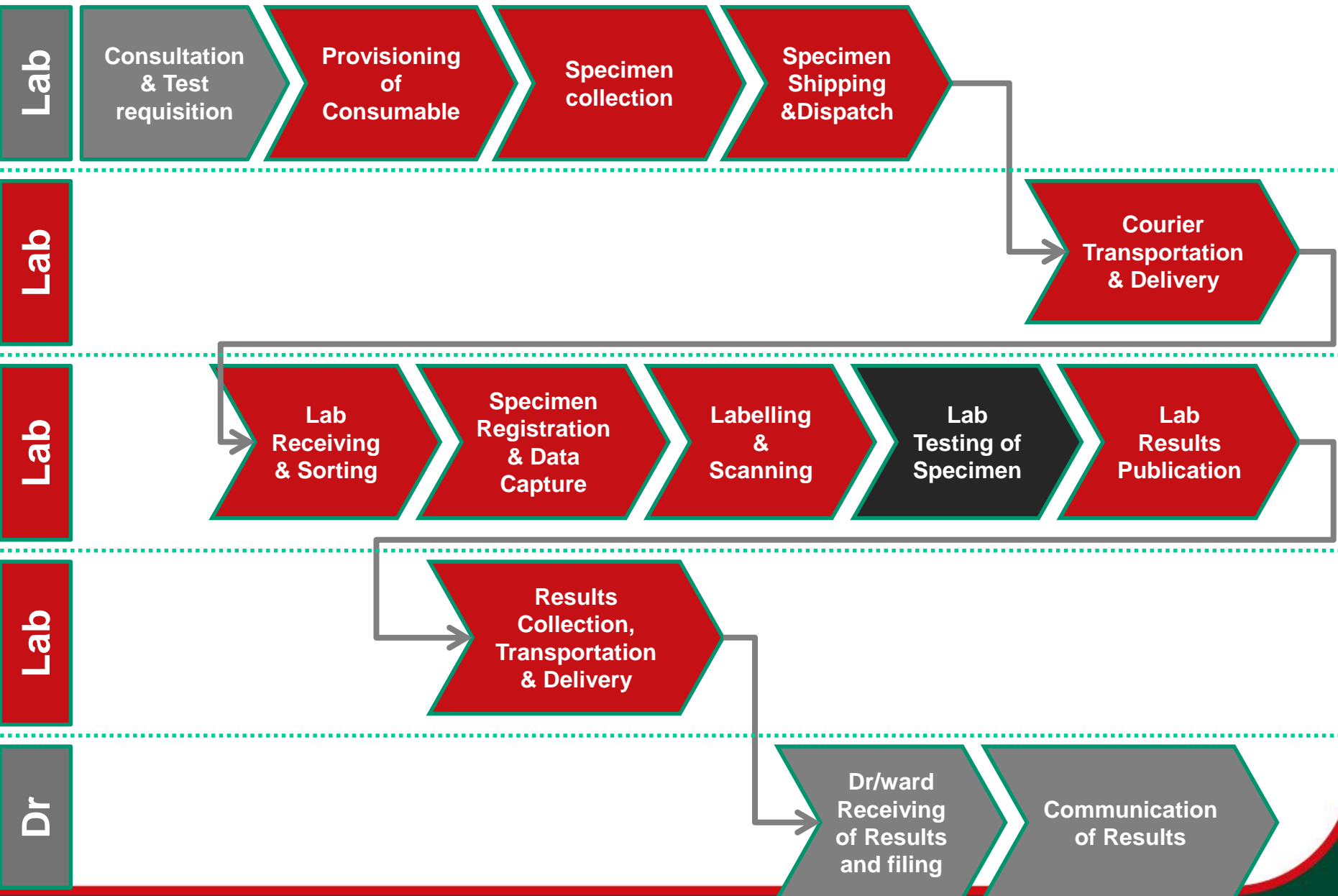
NHLS breadth of practice?

Laboratory Process Value Chain - Public

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Courier
- Results Collection, Transportation & Delivery

Clinic
- Clinic Receiving of Results and filing
- Communication of Results

Laboratory Process Value Chain - Private

Lab
- Consultation & Test requisition
- Provisioning of Consumable
- Specimen collection
- Specimen Shipping &Dispatch

Lab
- Courier Transportation & Delivery

Lab
- Lab Receiving & Sorting
- Specimen Registration & Data Capture
- Labelling & Scanning
- Lab Testing of Specimen
- Lab Results Publication

Lab
- Results Collection, Transportation & Delivery

Dr
- Dr/ward Receiving of Results and filing
- Communication of Results

Concluding thoughts

- It is clear that the system is not optimal

- Multiple areas
  - Simple to complex
  - Unique identifier
  - Getting the result back to the patient

- Multiple major stakeholders
  - Each needs to deliver
  - Relationships important

- Increasing NHLS scope of work enticing
  - Requires multi-level agreement

Acknowledgements

- PEPFAR/CDC grants since 2008

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  - District-based lab coordinators

Thank you