National ID Programs: Challenges with a Key Component of Digital Public Infrastructure

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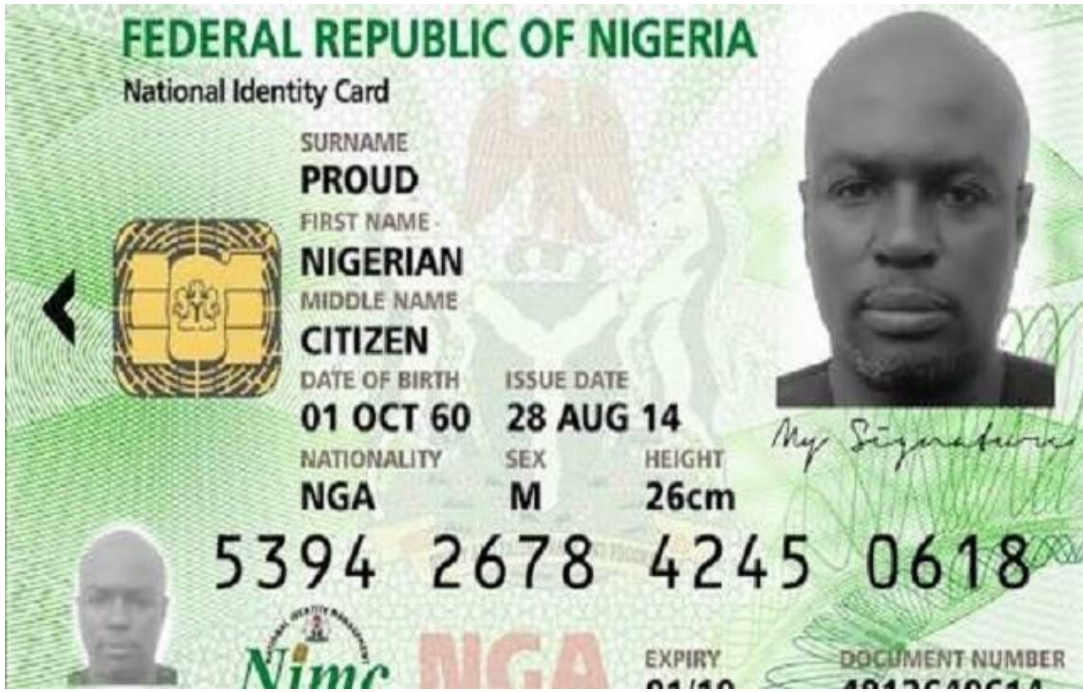
National Identity Programs

- Long history in high-income countries, often introduced for surveillance and security purposes (e.g., passports)
- Expanding in developing countries
  - Goals: surveillance and security, fair and democratic elections, foster national unity, improve government administration and service provision
- Sustainable Development Goal 16.9:
  - "By 2030, provide legal identity for all, including birth registration"
- Key component of digital public infrastructure



https://www.360nobs.com/wp-content/uploads/2016/03/nimc-640x431.jpg

Technological Advances in National ID Systems

- Incorporating electronic and biometric information into ID cards
  - As of 2012, over 1 billion people in developing countries had biometrics captured
- Electronic IDs support growth of electronic government (e-government) and can provide links to both public and private services
- Can also reduce costs and human error and increase administrative efficiency

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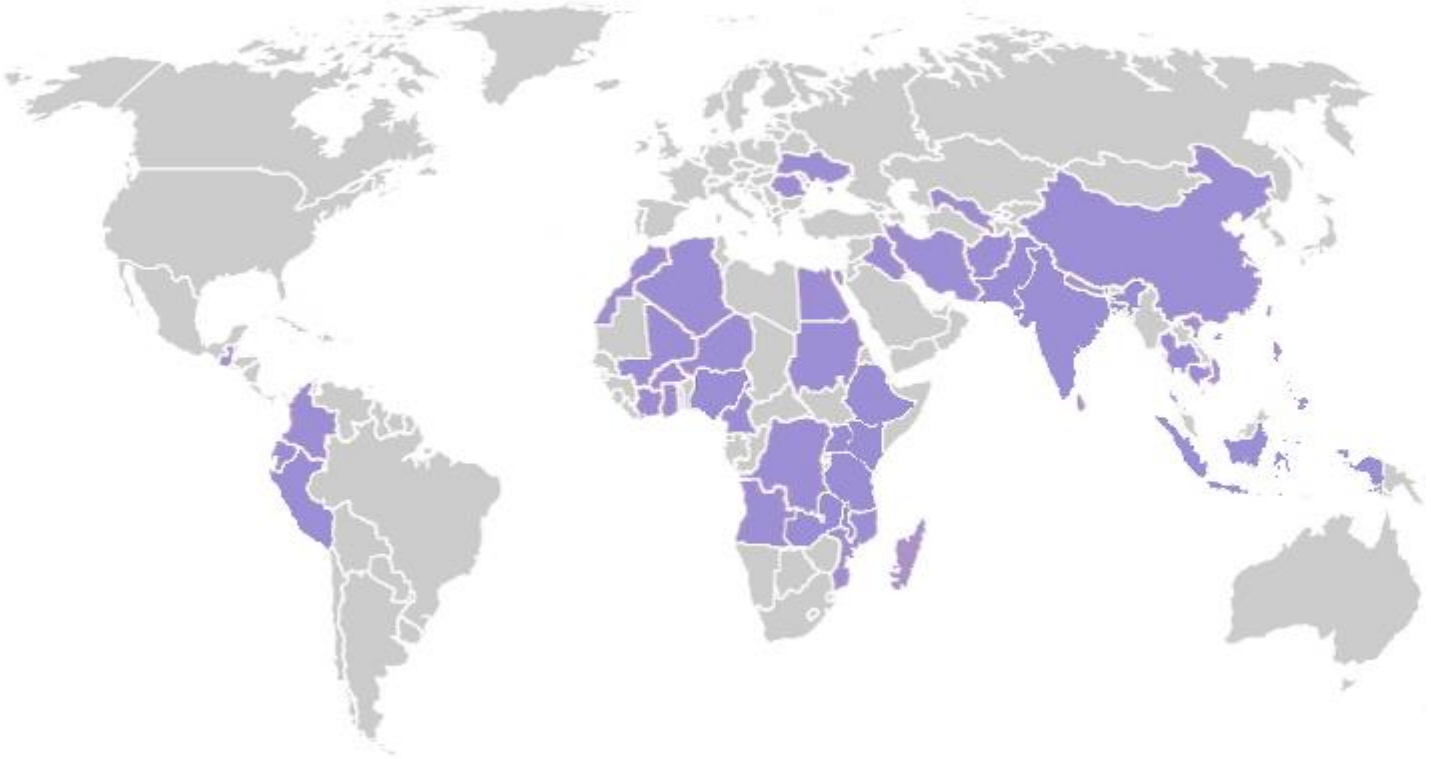
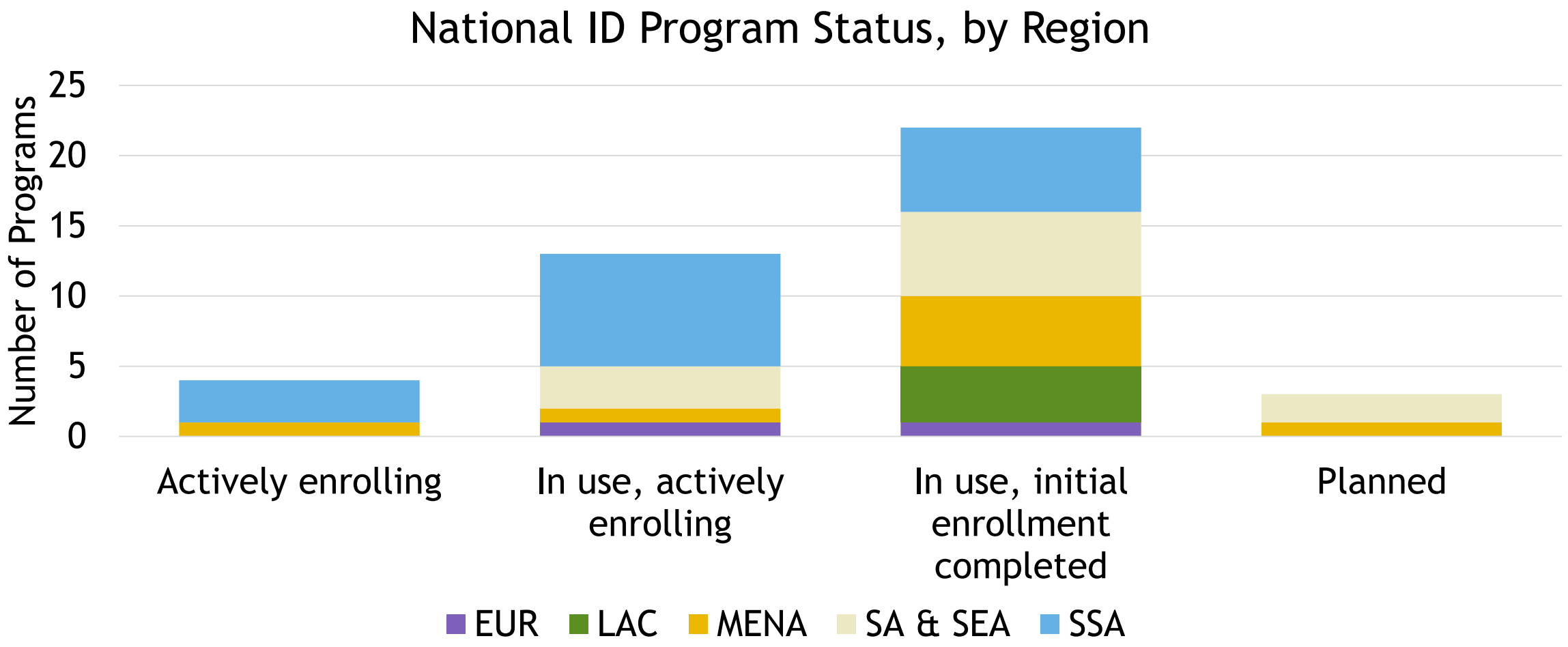
Methods and Sample



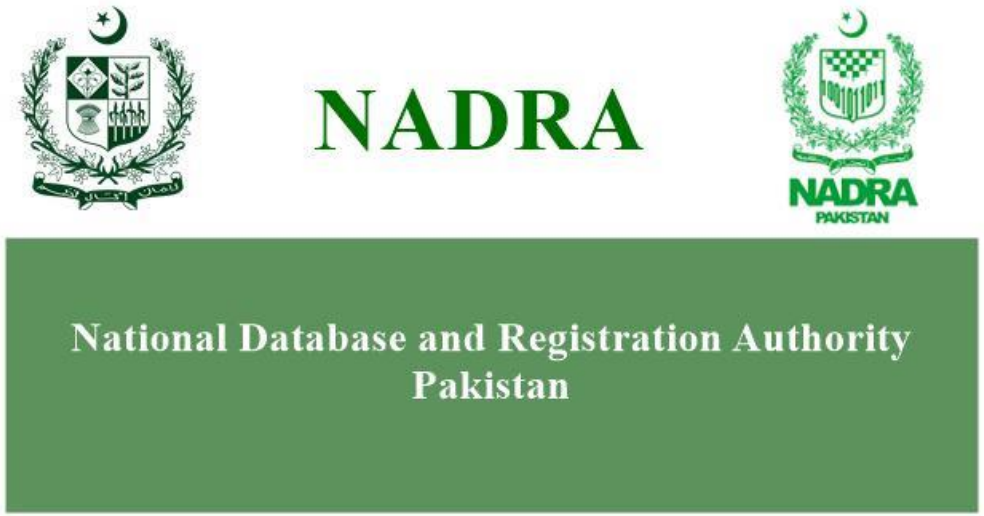
- 42 countries with 2013 populations over 15 million and GDP per capita under US$10,000, and with a national-level ID program
- 34 national ID programs introduced since 2000, including 17 since 2010
- Reviewed 417 country-specific and general documents
- Coded design and implementation information by country and analyzed trends and patterns

Program Implementation Status



Program Management

- A variety of government agencies are involved in ID program management
- Private firms are often involved in enrollment, card production, authentication and/or database maintenance

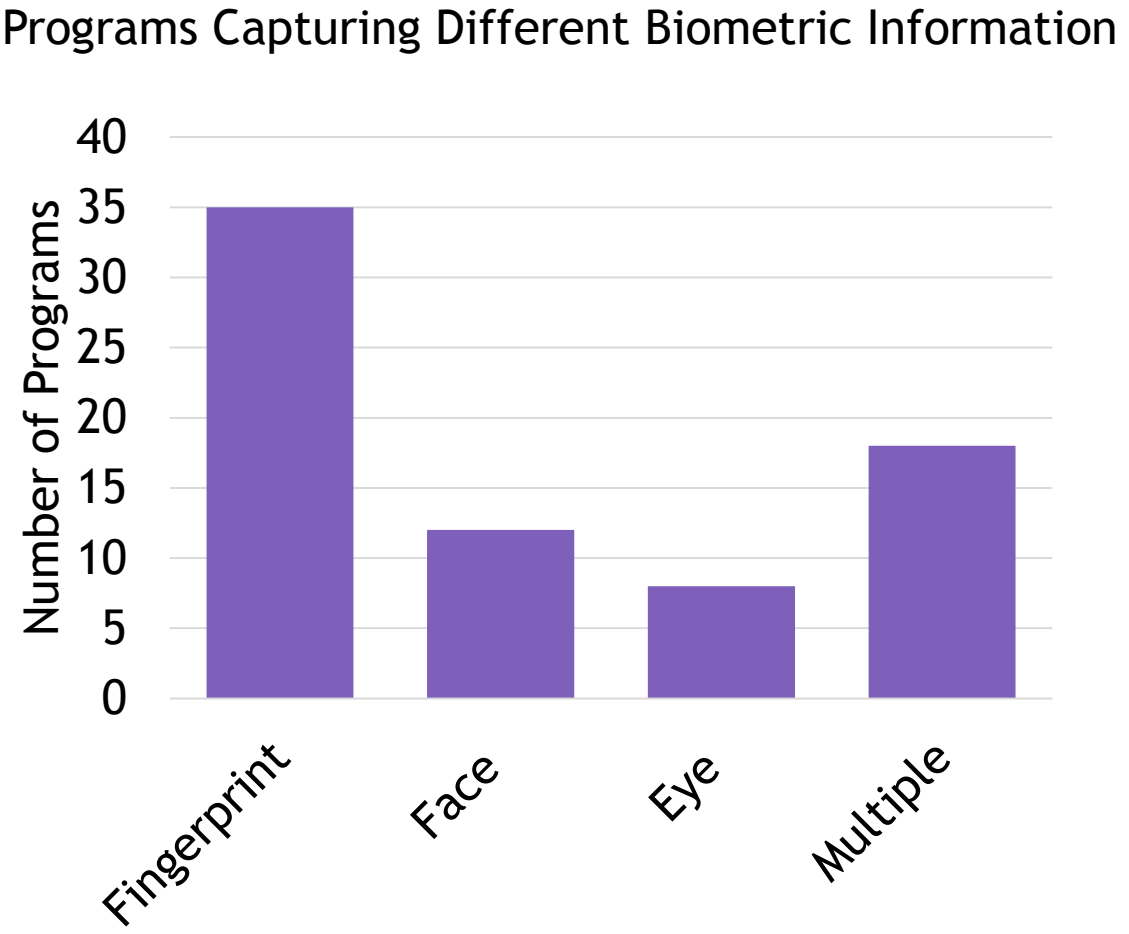


http://www.funvilla.pk/wp-content/uploads/2015/05/NADRA-National-Database-and-Registration-Authority.jpg

- Nearly all national ID programs receive government funding
  - 8 receive funding from donors, including UNDP, USAID, IDB, ADB, and others
  - Many programs also receive partial funding from fees for card distribution or for providing services

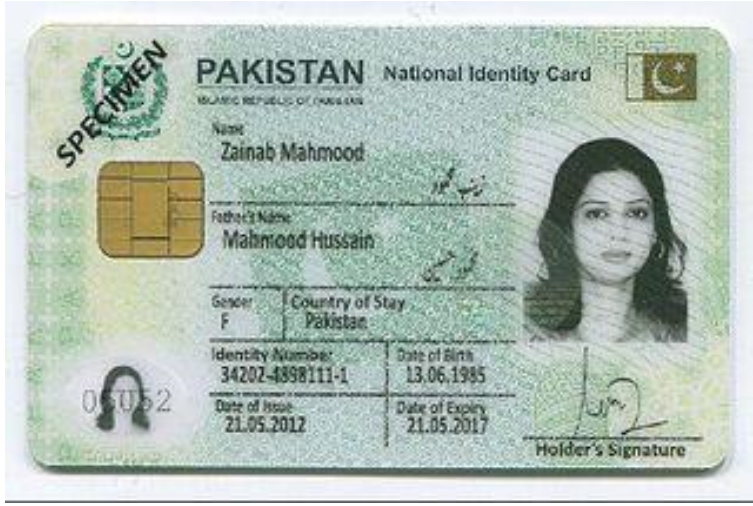
Information Collected

- Most ID programs record an individual's name, date of birth, gender, residence/location information, and take a photograph
- 36 programs collect some kind of biometric information for identification and authentication



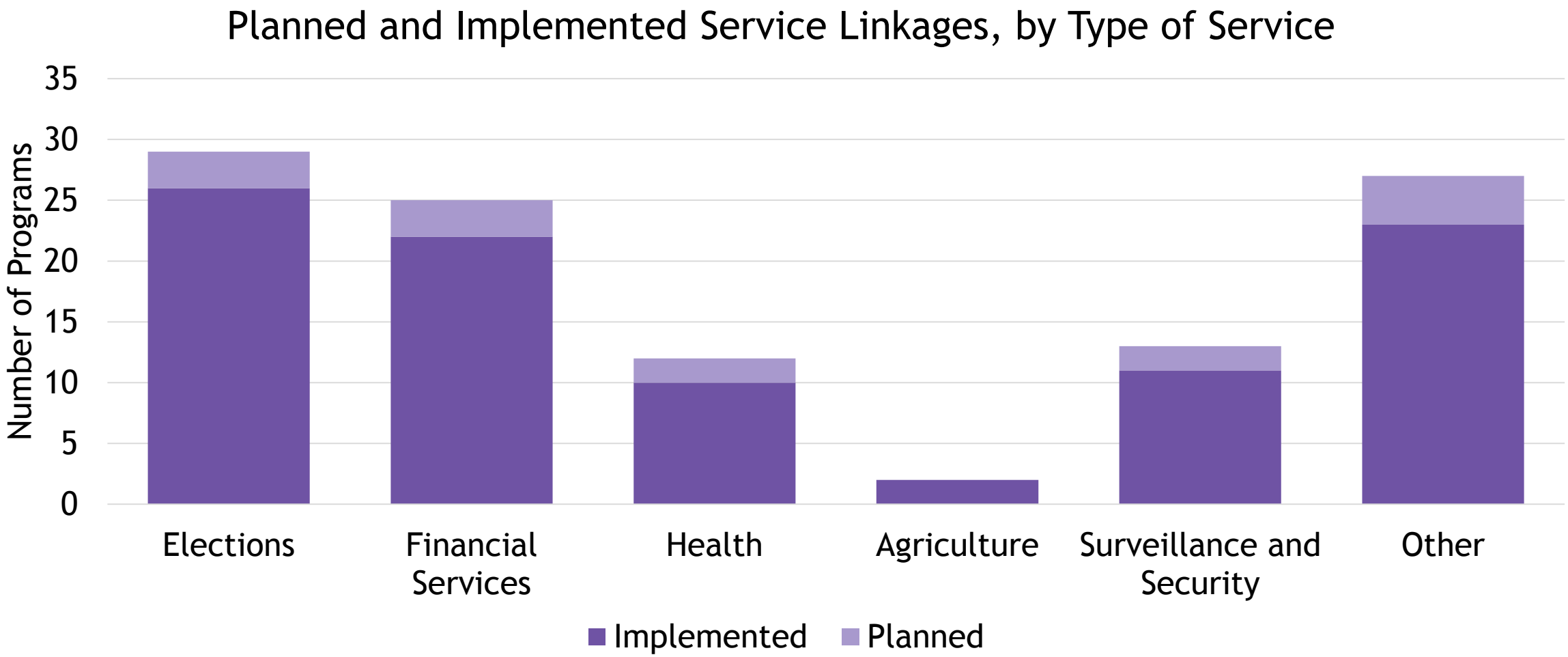
ID Cards

- All but two programs issue a physical credential/card
  - India's Aadhaar and Yemen's Biometric Voter Registration assign a unique ID number but do not issue cards
- 26 programs include an electronic component, such as "smartcard" microchips, machine readable barcodes, or RFID chips
- 19 programs have implemented new electronic ID programs in the past 5 years, often replacing previous programs



https://en.wikipedia.org/wiki/National_Database_and_Registration_Authority

ID Program Service Linkages



Example of Benefits – India's Aadhaar

- Connected Aadhaar numbers with bank accounts for government transfers
  - Automated electronic benefit transfer for 45 million individuals through National Rural Employment Guarantee Scheme (NREGS)
  - Automated government pension payments to 500,000 beneficiaries in Jharkhand
  - Millions of previously unbanked wage seekers gained access to mainstream financial services
- Reduced losses in liquid petroleum gas (LPG) delivery
  - Over 100 million customers now authenticated delivery with ID
  - 30 million duplicate or fraudulent LPG connections removed

Image Credit: Bloomberg

Election Linkages

- Elections are the most common service function of ID programs
  - Voter registration, ID to vote, election monitoring
- Increasing use of biometric information
  - Voter fingerprint authentication in 2017 Kenya elections
  - Planned for 2018 Zimbabwe elections and tested or planned in several other countries
  - Cost and infrastructure challenges

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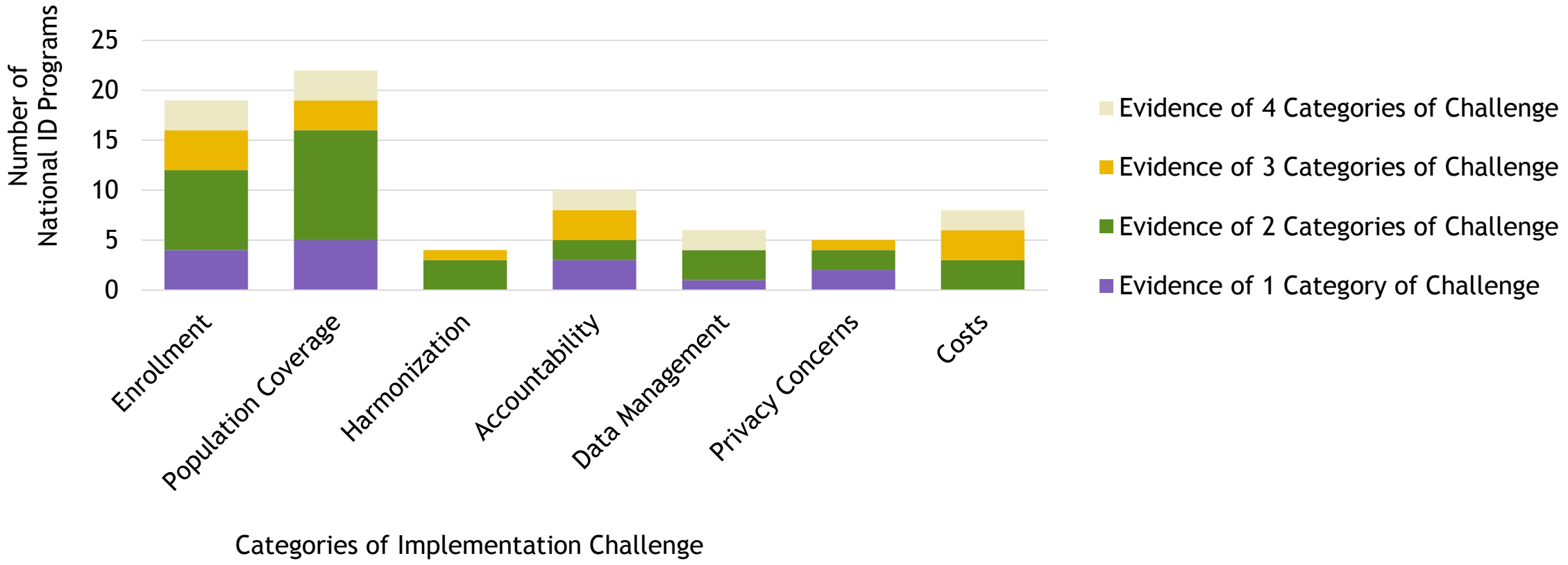
ID Program Implementation Challenges

Implementation challenges of national ID programs, by number of different categories of challenges faced.



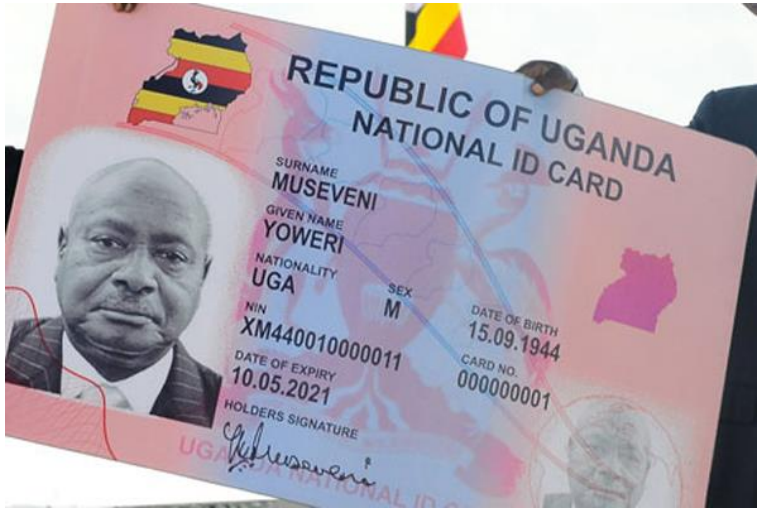
Enrollment and Population Coverage Challenges

- Resource challenges
- Staff training or capacity
- Centralization of decision-making
- Populations not understanding enrollment benefits
- Reaching rural and remote populations
- Enrolling the poor, women, or minority groups

http://www.redpepper.co.ug/national-id-issuance-starts-this-week/

Enrollment Example - Uganda National ID

- ID program originally launched in 2010, but delayed
  - Reports of scandal over procurement
  - Only 400 ID cards produced by July 2012
- Mass registration exercise conducted at parish level (5-10 villages)
  - Allocated resources to reach 18,000,000 citizens [more than eligible population]
  - 15,775,522 individuals registered in 2014 (98.7% of eligible population)
- Continuous registration (of newly eligible individuals) at sub-county level (5-10 parishes)
- Not all enrolled individuals have received ID cards



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Enrollment Example - Pakistan National ID

- Enrollment challenges from 2001-2005 due to limited technical capabilities
- Proliferation of counterfeit IDs in this period
- Expanded registration efforts:
  - Established offices in every district
  - Mobile enrollment infrastructure
  - Cards linked to services
  - Subsidized registration fees
- Increased registration from 54 million in 2008 to 98 million in 2014 (98% of eligible population)
- Resource intensive

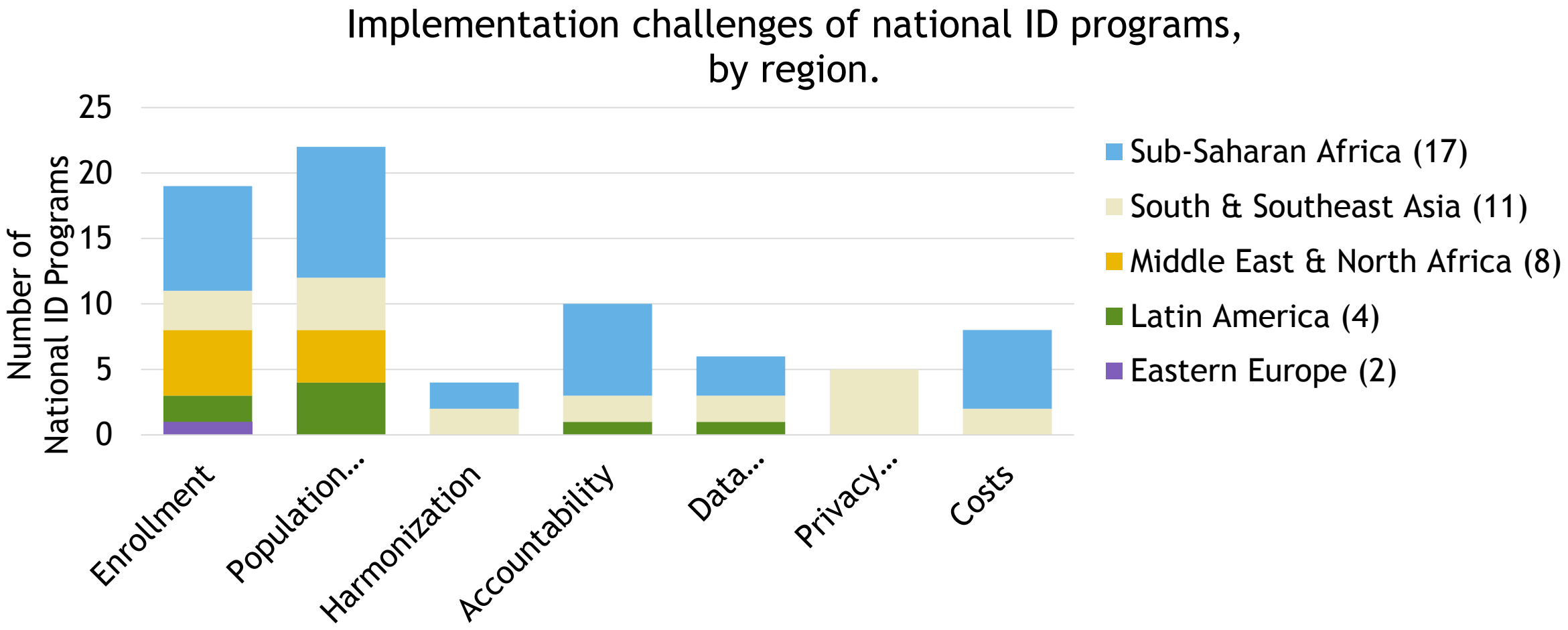
http://pakistan.onepakistan.com.

Other Implementation Challenges

We find evidence of other implementation challenges in 25 programs, including 8 reporting challenges in two or more areas:

- Harmonization of competing ID programs (4 programs)
- Accountability concerns (10 programs)
- Data management (6 programs)
- Threats to privacy of individual information (5 programs)
- High program costs (8 programs)

Trends in Implementation Challenges, by Country Characteristics



Trends in Implementation Challenges, by Program Characteristics

- Private partnerships: no differences for countries with and without, except for coverage challenges
- Donor support: more challenges with accountability and enrollment, fewer challenges with population coverage
- Electronic cards: more challenges with enrollment and population coverage
- Biometric data collection: more challenges with data management and with privacy concerns

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Please direct comments or questions about this research to Principal Investigators C. Leigh Anderson and Travis Reynolds at epar.evans.uw@gmail.com.