

DEPARTMENT OF GLOBAL HEALTH

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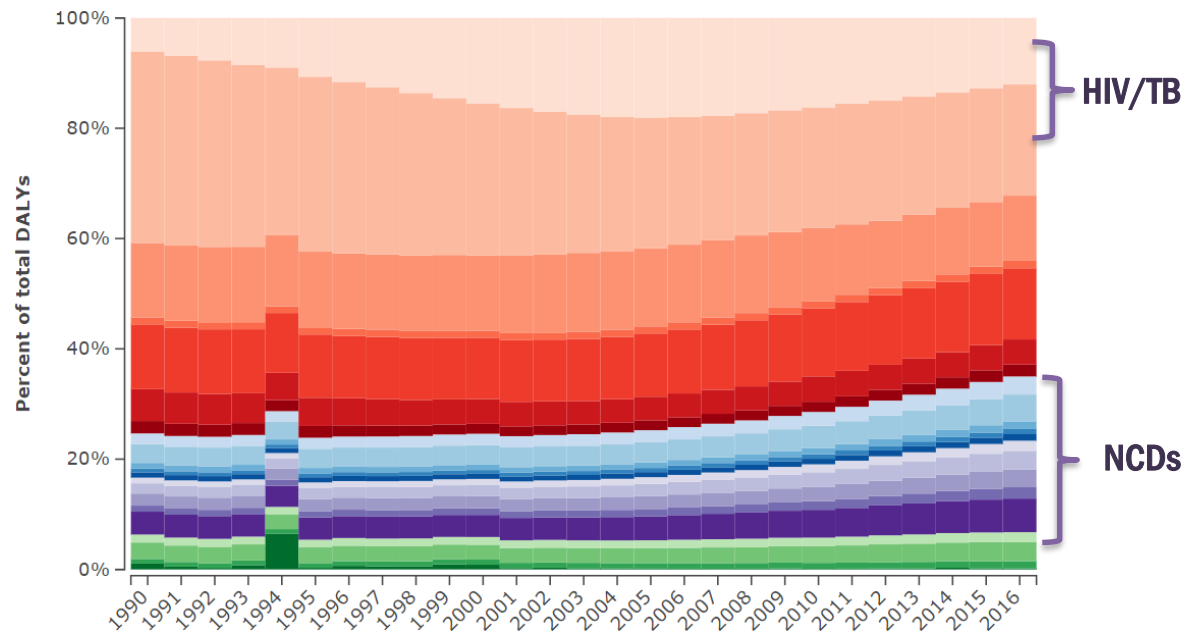


Implementation Science for Integration of HIV and Non-Communicable Disease Services in Sub-Saharan Africa: A Systematic Review

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Non-communicable diseases (NCDs) are an increasing, preventable cause of disease burden in Sub-Saharan Africa¹ and threaten the progress of HIV prevention and treatment programs.



¹Bezinger et al, 2016

HIV and NCD Integration



- **ART scale-up in Sub-Saharan Africa has addressed adult mortality**
 - People living with HIV are aging and at increased risk for NCDs²
- **Co-morbid NCDs impact treatment outcomes, e.g.:**
 - Patients with depressive symptoms have 42% reduced odds of optimal ART adherence³
 - Polypharmacy reduces ART and NCD medicine adherence⁴

²Hirschhorn et al, 2012; ³Uthman et al, 2014; ⁴Lundren, et al, 2008

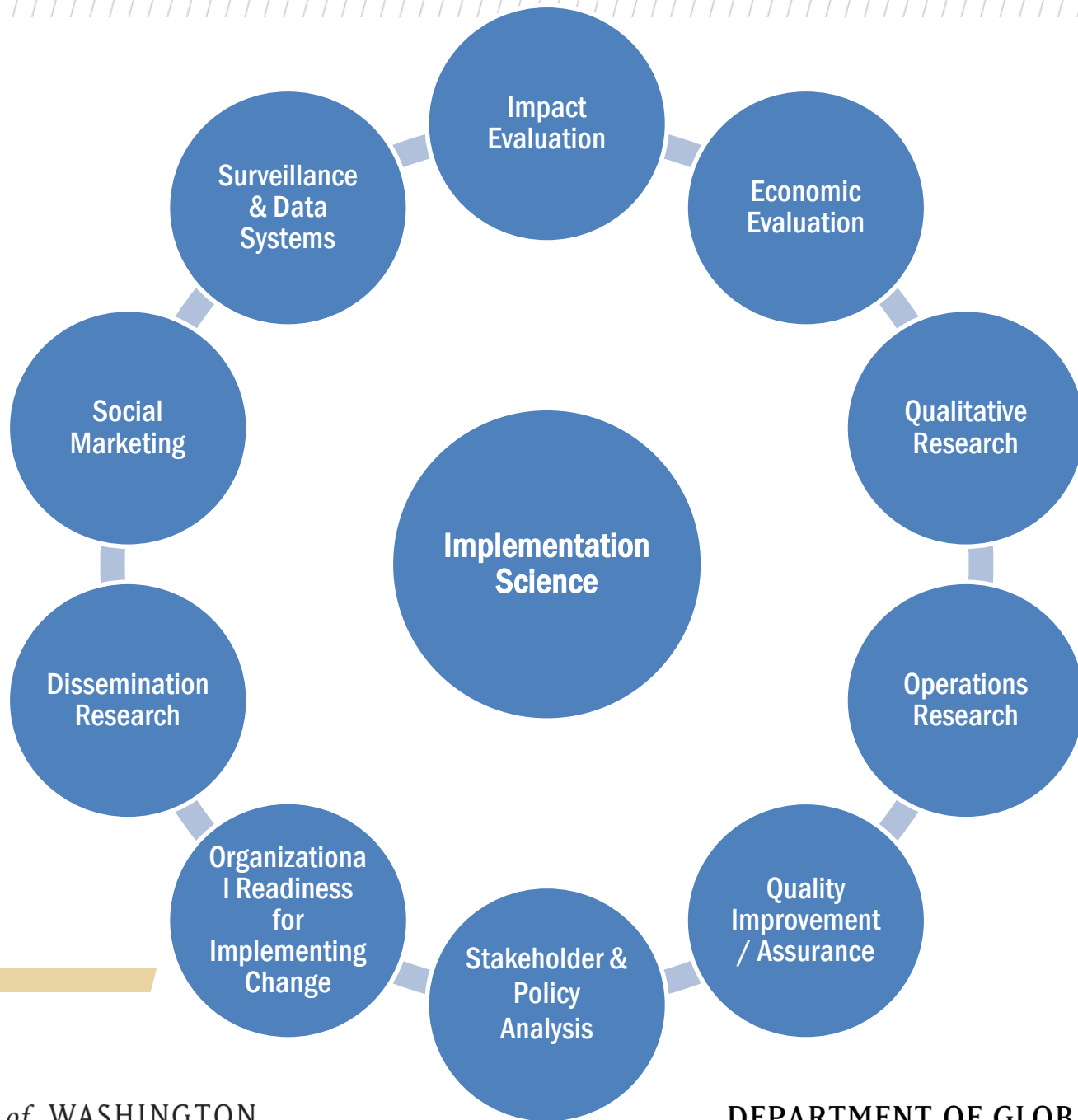
HIV and NCD Integration: leveraging HIV platforms to address NCDs

- HIV platforms were the first chronic care services implemented and scaled in Sub-Saharan Africa,⁵ and offer tools, models, and approaches for NCD services
 - Ability to provide continuity of care, improve retention, and link treatment and behavior change/risk reduction services (attributes critical for successful NCD programs)
- Many health systems are integrating chronic care services into primary care, extending reach for addressing chronic conditions
 - E.g. South Africa is implementing Integrated Chronic Disease Management and re-organizing facility-level service delivery⁶

⁵Rabkin & El-Sadr, 2011; ⁶Ameh et al; 2017

Implementation science (IS) methods can promote HIV and NCD service integration

We define IS as a systematic, scientific approach to ask and answer questions about how to deliver what works in populations who need it with greater speed, fidelity, efficiency, and relevant coverage.



Study Objective



- **Understand how IS methods have informed the integration of NCD and HIV services in Sub-Saharan Africa**
 - Highlight critical or under-used research methods
 - Identify research questions to guide future work

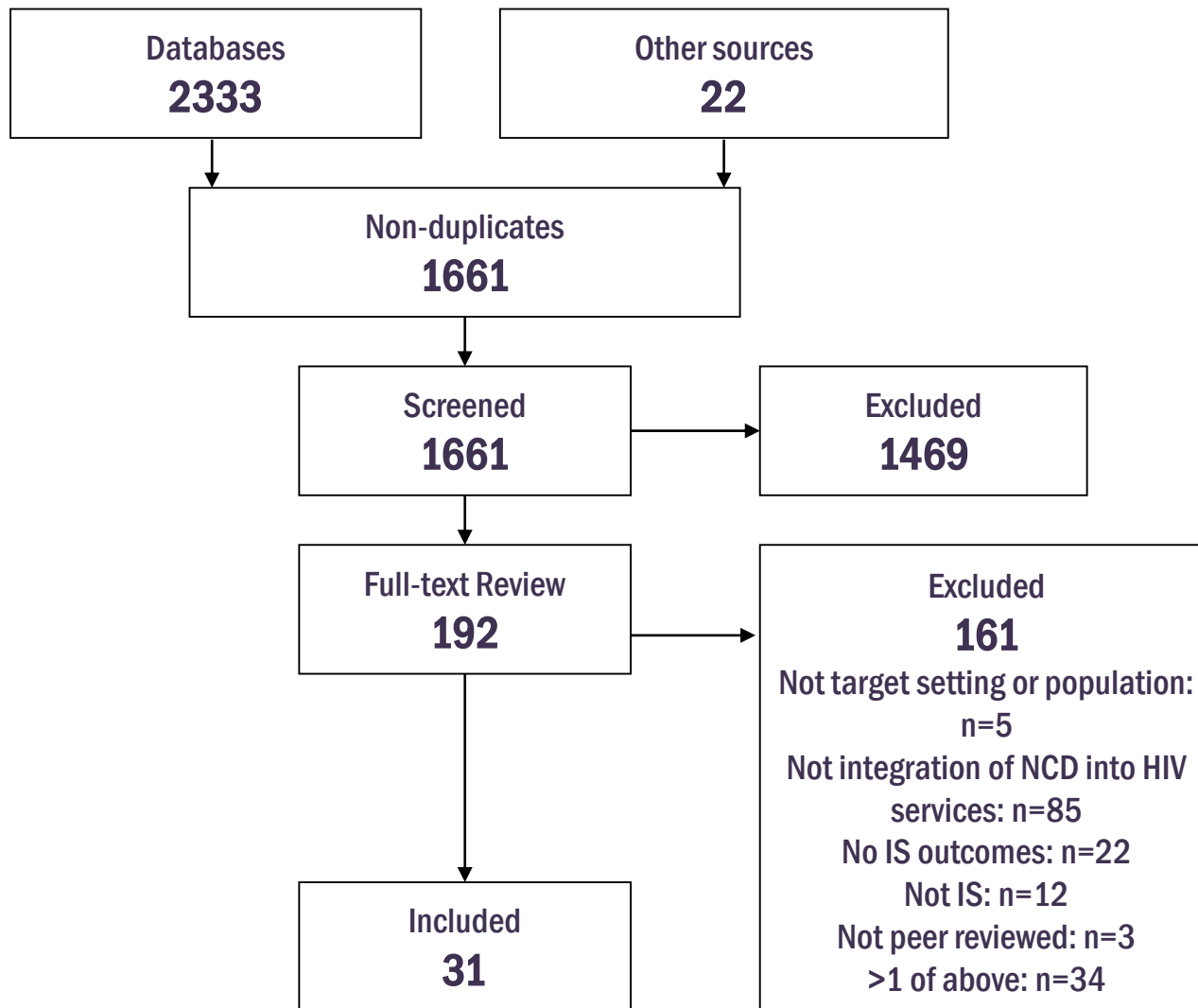
Methods



- **PRISMA systematic review**
 - PubMed, CINAHL, PsycINFO, EMBASE
- **Inclusion:**
 - Based in Low-/Middle-Income Country
 - Evaluated NCD services integrated with HIV platforms
 - Reported at least one implementation outcome⁷
- **Exclusion:**
 - Did not evaluate implementation strategies or explain variation in implementation outcomes
- **Structured data abstraction form**
 - Study details, program details, IS method, implementation specification⁸
- **Two reviewers at all levels**

⁷Proctor et al, 2011; ⁸Proctor et al, 2013

Results: PRISMA Flowchart



Results (1)

| | Studies | Programs |
|---|------------------|------------------|
| N | 31 | 26 |
| Year of Study Publication/Program Start, median (range) | 2015 (2009-2017) | 2011 (2006-2014) |
| IS Discipline, Method, or Tool* | | |
| Impact Evaluation | 2 (6.5%) | 2 (7.7%) |
| Economic Evaluation | 4 (12.9%) | 3 (11.5%) |
| Qualitative Methods | 26 (83.9%) | 24 (92.3%) |
| Operations Research | 0 | 0 |
| Quality Improvement/Assurance | 0 | 0 |
| ORIC | 0 | 0 |
| Stakeholder/Policy Analysis | 1 (3.2%) | 1 (3.8%) |
| Dissemination Research | 0 | 0 |
| Social Marketing | 1 (3.2%) | 1 (3.8%) |
| Surveillance/Data Systems | 0 | 0 |
| IS Framework* | | |
| None | 30 (96.8%) | 25 (96.2%) |
| RE-AIM | 1 (3.2%) | 1 (3.8%) |

Results (2)

| | Studies | Programs |
|--|------------|------------|
| N | 31 | 26 |
| Study Population* | | |
| Community Members | 4 (12.9%) | 3 (11.5%) |
| Patients | 24 (77.4%) | 20 (76.9%) |
| Providers | 14 (45.2%) | 14 (53.8%) |
| Policymakers | 3 (9.7%) | 3 (11.5%) |
| Implementation Outcomes Reported* | | |
| Acceptability | 17 (54.8%) | 15 (57.7%) |
| Adoption | 1 (3.2%) | 1 (3.8%) |
| Appropriateness | 5 (16.1%) | 5 (19.2%) |
| Cost | 4 (12.9%) | 3 (11.5%) |
| Feasibility | 12 (38.7%) | 12 (46.2%) |
| Fidelity | 1 (3.2%) | 1 (3.8%) |
| Penetration | 8 (25.8%) | 8 (30.8%) |
| Sustainability | 0 | 0 |

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Results (3)

| | Studies | Programs |
|---|----------------|-----------------|
| N | 31 | 26 |
| Service Delivery and Patient Health Outcomes Reported* | | |
| Screening/Diagnosis (e.g. % positive) | 14 (45.2%) | 13 (50.0%) |
| Engagement (e.g. # retained in care) | 9 (29.0%) | 9 (34.6%) |
| Treatment (e.g. # receiving surgery) | 21 (67.7%) | 17 (65.4%) |
| Clinical (e.g. blood pressure reduction) | 4 (12.9%) | 4 (15.4%) |
| Client Satisfaction | 16 (51.6%) | 14 (53.8%) |
| Provider Satisfaction | 11 (35.5%) | 11 (42.3%) |

Results (4)

| | Studies | Programs |
|--|---------|----------------|
| N | 31 | 26 |
| Program Duration (years), median (range) | | 2.5 (1.5, 8.0) |
| Target NCD* | | |
| Hypertension | | 4 (15.4%) |
| Diabetes | | 4 (15.4%) |
| Cancer (cervical cancer) | | 13 (50.0%) |
| Depression | | 11 (42.3%) |
| Other | | 9 (34.6%) |
| Number of Target NCDs | | |
| 1 | | 15 (57.7%) |
| 2 | | 8 (30.8%) |
| 3 | | 2 (7.7%) |
| ≥4 | | 1 (3.8%) |
| Service Delivery Level* | | |
| Community | | 4 (15.4%) |
| Clinic | | 17 (65.4%) |
| Hospital | | 14 (53.8%) |

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| Hospital | | 14 (53.8%) |

Results (5)

| | Studies | Programs |
|---|-----------|------------|
| N | 31 | 26 |
| Service Offered* | | |
| Prevention/Screening | | 18 (69.2%) |
| Referral | | 17 (65.4%) |
| Treatment | | 17 (65.4%) |
| Target Patients | | |
| Patients with NCDs, with or without HIV | | 8 (30.8%) |
| Patients with NCDs and HIV | | 18 (69.2%) |
| Patient Entry Point* | | |
| Community | | 3 (11.5%) |
| Primary Care | | 5 (19.2%) |
| HIV Care | | 23 (88.5%) |
| Stage of Implementation | | |
| Pre-Implementation | | 7 (26.9%) |
| Pilot/One-Time | | 7 (26.9%) |
| Ongoing/Long-Term | | 12 (46.2%) |

*>1 response per study/program possible

ORIC = Organizational Readiness for Implementing Change

RE-AIM = Reach Effectiveness Adoption Implementation Maintenance

NCD = Non-Communicable Disease

Discussion



- **Qualitative acceptability/feasibility studies are common**
 - Patients feel that NCD services in an HIV care setting are acceptable
 - Providers have concerns related to feasibility: lack of space, workload, etc.
- **Only one study used a formal theoretical framework**
 - Suggests need for adaptation/expansion for use in Sub-Saharan Africa
- **Limited reliance on implementation research methods**
 - Impact and economic evaluations for implementation strategies were uncommon
- **Limited range of NCDs and outcomes addressed**
 - No programs targeting stroke, myocardial infarction, or substance abuse
 - Few evaluations of fidelity; none of sustainability

Key Future Research Questions

| | Methods |
|---|--|
| What is the effect of integrated services on disease incidence, morbidity, and mortality? | <i>Impact evaluation Surveillance & data systems</i> |
| What are the most effective and cost-effective models for delivering integrated services? How to apply experience with IS in HIV to NCDs? | <i>Impact evaluation Economic evaluation</i> |
| How can we optimize the delivery of integrated services? | <i>Operations research Organizational readiness assessment</i> |
| How can we improve the fidelity of integrated services? | <i>QI/QA</i> |
| What policy changes are necessary for scaling-up integrated services? | <i>Stakeholder/policy analysis</i> |
| How do we culturally adapt integrated services for across contexts? | <i>Qualitative methods</i> |
| How do we increase the reach of integrated services to marginalized and vulnerable communities? | <i>Dissemination research</i> |
| How do we create understanding and appeal of engaging in health practices that address both NCDs and HIV? | <i>Social marketing</i> |
| What are the most effective ways to build in-country IS research capacity? | |

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DISCLAIMER:

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the U.S. government.

Thank you!

Questions?

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GBD Key

- Neoplasms
- Cardiovascular diseases
- Chronic respiratory
- Cirrhosis
- Digestive diseases
- Neurological disorders
- Mental & substance use
- Diabetes/urog/blood/end
o
- Musculoskeletal disorders
- Other non-communicable