Highlights from the Inaugural McGill-Cooper/Smith Internship

Deborah & Nathali | Summer Internship Summary

2020 August 26

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Goals for the Summer

Nathali

- Gain real-world experience in the global health sector.
- Apply knowledge gained in quantitative MScPH courses to real-world problems.

Deborah

- Learn to “do” global health in an ethical and thoughtful way
- Apply quantitative skills from MscPH course work into real-world settings
- Understand how nursing fits into a larger global health context

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Overview of Projects

1. Blantyre Prevention Systematic Review on HIV Prevention Service Delivery Channels
2. COVID-19 Mobility/Policy Analysis
3. Literature Review of Ethics Behind the Use of Novel Data Sources
4. Additional Data Analyses
   a) Validation Study (Nathali)
   b) HMIS15 data (Deborah)
5. Blantyre Prevention Study work plan (Deborah)

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1. BPS Systematic Review on HIV Prevention Service Delivery Channels

Purpose:

- Primary aim = catalogue current and historical HIV prevention service delivery channels (HIV prevention strategies) as identified in Malawi's NSP
- Secondary aim = identify data use and data systems involved with these strategies.

Findings would guide decision making in Malawi once Cooper/Smith begins on-the-ground work for the Blantyre Prevention project.

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1. BPS Systematic Review on HIV Prevention Service Delivery Channels

In collaboration with Andrea, Midanna, and Sara, we:

- Planned the search strategy and verified the protocol with a librarian from McGill.
- Co-created the protocol, conducted the search, and extracted the data.
- Conducted quality appraisals of all full-text studies.
- Organized findings into appropriate tables and appendices.
- Drafted an initial manuscript and slide deck.

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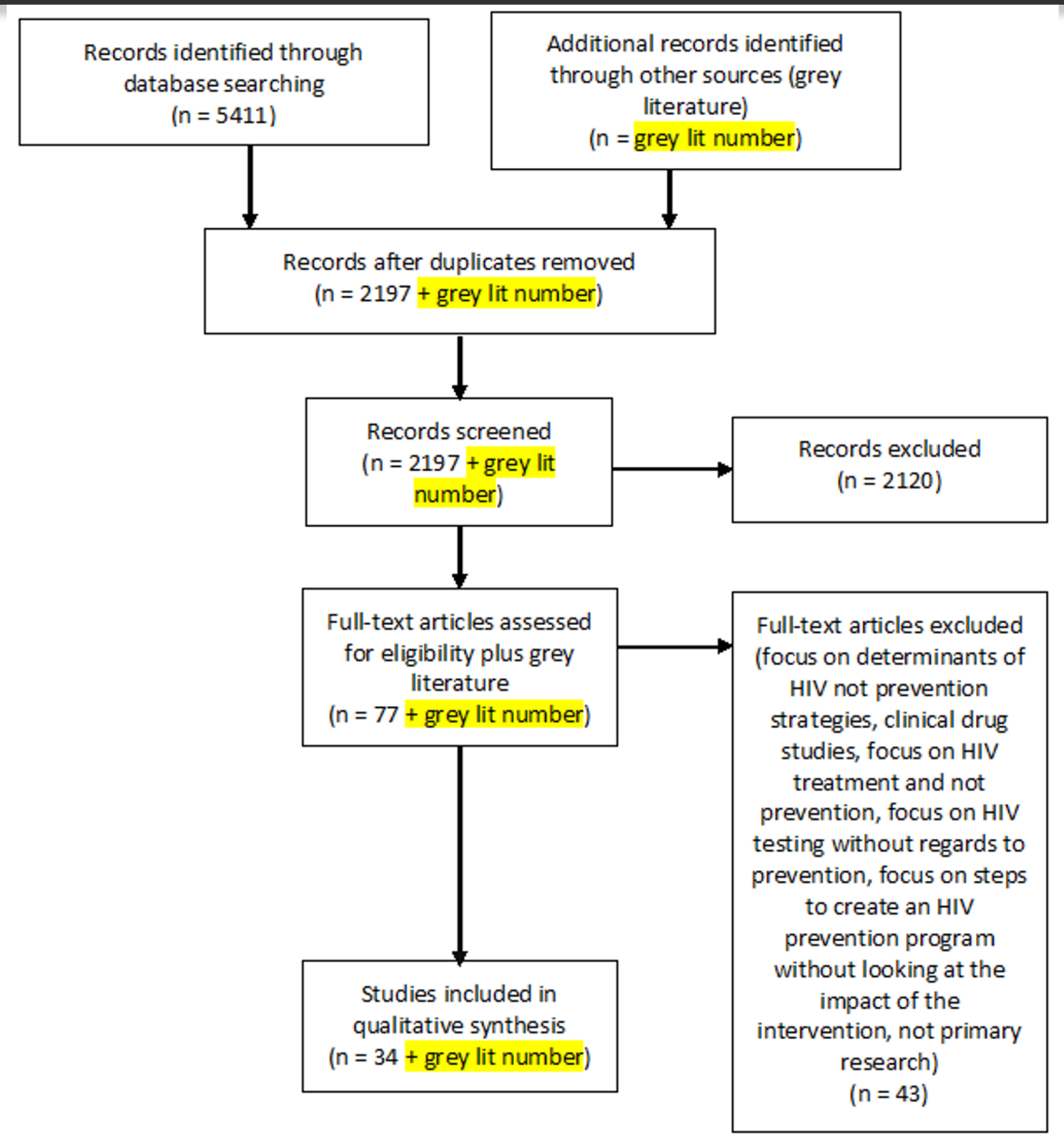
1. BPS Systematic Review on HIV Prevention Service Delivery Channels



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1. BPS Systematic Review on HIV Prevention Service Delivery Channels - Lessons Learned From the Literature

- Though the National Prevention Strategy lists 16 HIV prevention service delivery channels, majority of published studies were social behavioural change interventions and e-MTCT (primarily Option B+). Grey literature contains more of the other service delivery channels
- We were expecting more studies to use existing data sources (DHS, PEPFAR programme data, etc.), but rather data was collected independently by study investigators
- Interventions that were community led and designed were much more readily taken up by the population

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2. Mobility and Policy Analysis

Purpose: Uniquely combine publicly-available data to see if they can better inform COVID-19 patterns in sub-Saharan African countries.

In collaboration with Dylan & Brandon, we:

- Combined mobility data from Google Mobility Reports, test/case/death data from Our World in Data, and policy data from Oxford's Government Response Tracker using R software to create comprehensive visuals that give a clearer picture of how COVID-19 is playing out in SSA.

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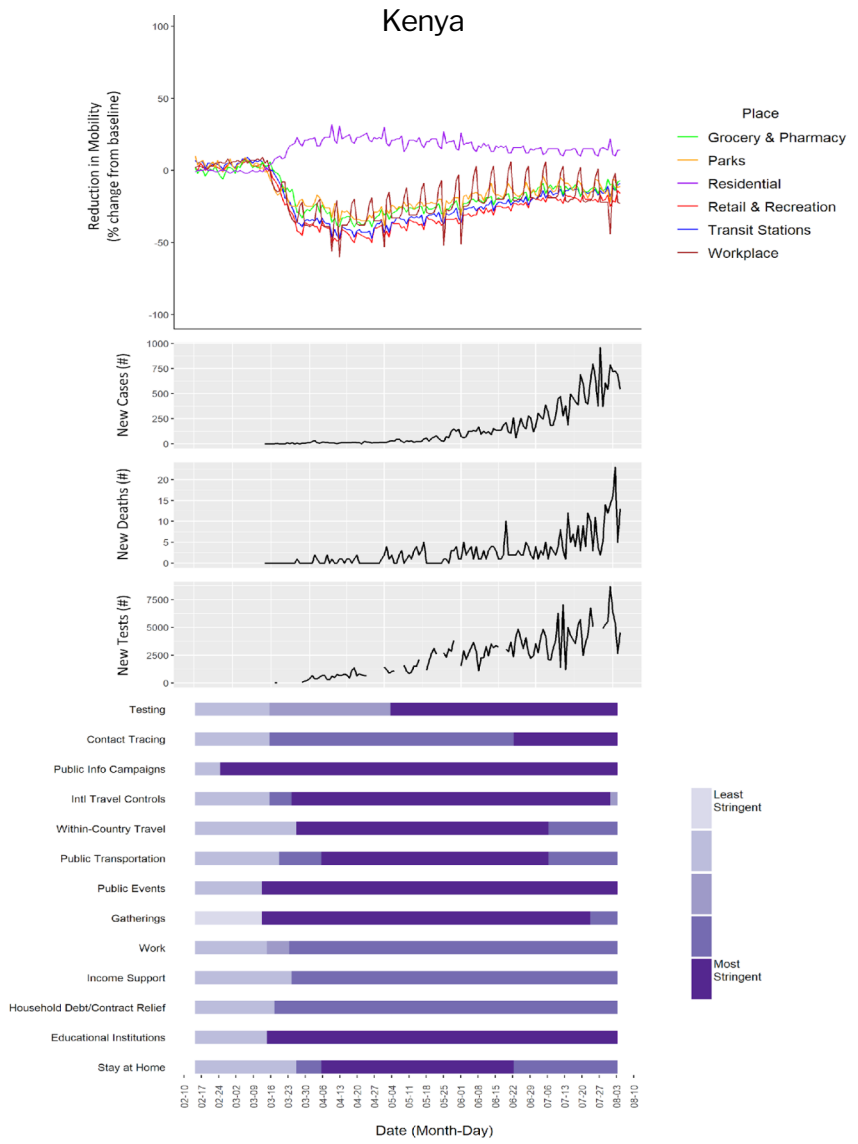
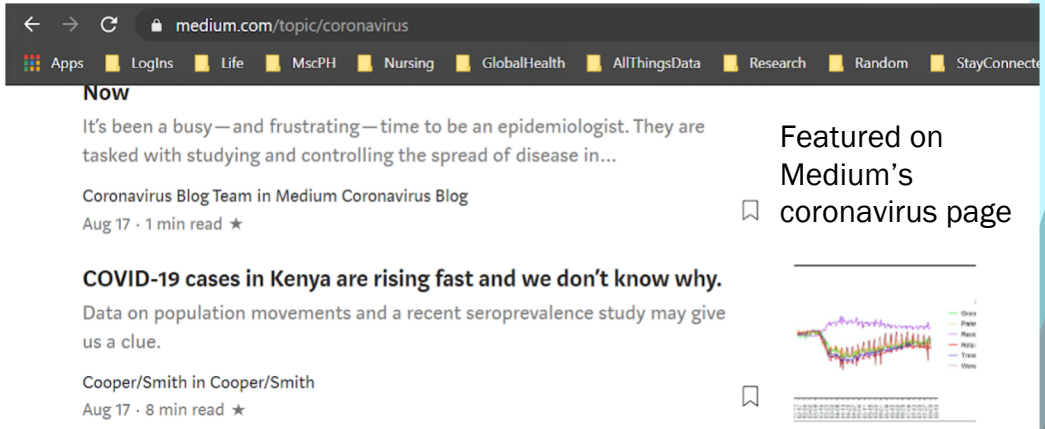
2. Mobility and Policy Analysis - Outputs





Featured on Medium's coronavirus page

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3. Literature Review on the Ethics Behind the Use of Novel Data Sources

Purpose: Identify studies that looked at the use of novel data sources (e.g. mobile operator data, social media, etc.) for research (HIV, TB, Ebola/Emergency Response, Malaria, etc.) and understand how ethics on the use of these data sources were considered in these studies.

In collaboration with Andrea and Midanna, we:

- Searched available literature sources to identify eligible studies.
- Summarized findings into a table that could be used by the team for use in the larger project.

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3. Literature Review on the Ethics Behind the Use of Novel Data Sources

Data Source	Citation	Study Type	Region	Disease	How was the data used?	Ethical Convenings/Considerations
Call Detail Records	Queiroz, L., Melo, J. L., Barboza, G., Urbanski, A. H., Nicolau, A., ... Nakaya, H. (2020). Large-scale assessment of human mobility during COVID-19 outbreak. https://doi.org/10.31219/osf.io/nqxrd. (preprint)	Implemented	South America	COVID-19	Cell phone data of millions of people was used to assess the population mobility in São Paulo, Brazil to examine if social distancing policies were followed.	The study authors collaborated with In Loco (contains more than 60 million cell phones in its database and records more than 1.8 billion visits at physical locations every month). Through anonymous tracking, In Loco can detect the most likely home location of a device and devices' locations across the country. Data was de-identified so name or social security number could not be linked to the data. Four of the study authors work for In Loco. No ethical approval was sought because anonymized data was used.
	Okano, JT., Sharp, K., Valdano, E., Palk, L., Blower, S. (2020). HIV transmission and source-sink dynamic in sub-Saharan Africa. *Lancet HIV.* 7(3), e209-e214. doi:10.1016/S2352-3018(19)30407-2	Theoretical	Africa	HIV	CDR data was used to identify population-level movement patterns and used in the mathematical model.	No ethical convenings mentioned and no mention of receiving ethics approval. Unclear where data sources for CDR came from but data from 1.19 million unique SIM cards in Namibia was used.
	Tessema, S., Wesolowski, A., Chen, A et al. (2019). Using	Implemented	Africa	Malaria	CDR was used to estimate population mobility patterns and	Ethical approval was obtained from the Institutional Review Boards of the University of Namibia and the
	parasite genetic and human mobility data to infer local and cross-border malaria connectivity in Southern Africa. *Elife*. 8:e43510. doi:10.7554/eLife.43510				combined with parasite genetic data and travel history of malaria cases	University of California, San Francisco (Identification numbers 15–17422 and 14–14576). Informed consent was obtained from all participants or the parents of all children who participated in the Zambezi study. For the Kavango study, IRB approval was obtained but no informed consent was collected as all samples (used RDTs) and de-identified data were collected

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4. Additional Analyses

Recently we began working on two data analysis projects that are ongoing and that we will continue working on this week.

- Nathali: Validating a regression model that looks at the correlation between STI diagnoses and HIV positivity in Malawi hospitals, health centres, clinics, etc.
- Deborah: Examine HMIS15 data to see if COVID-19 disrupted health service delivery

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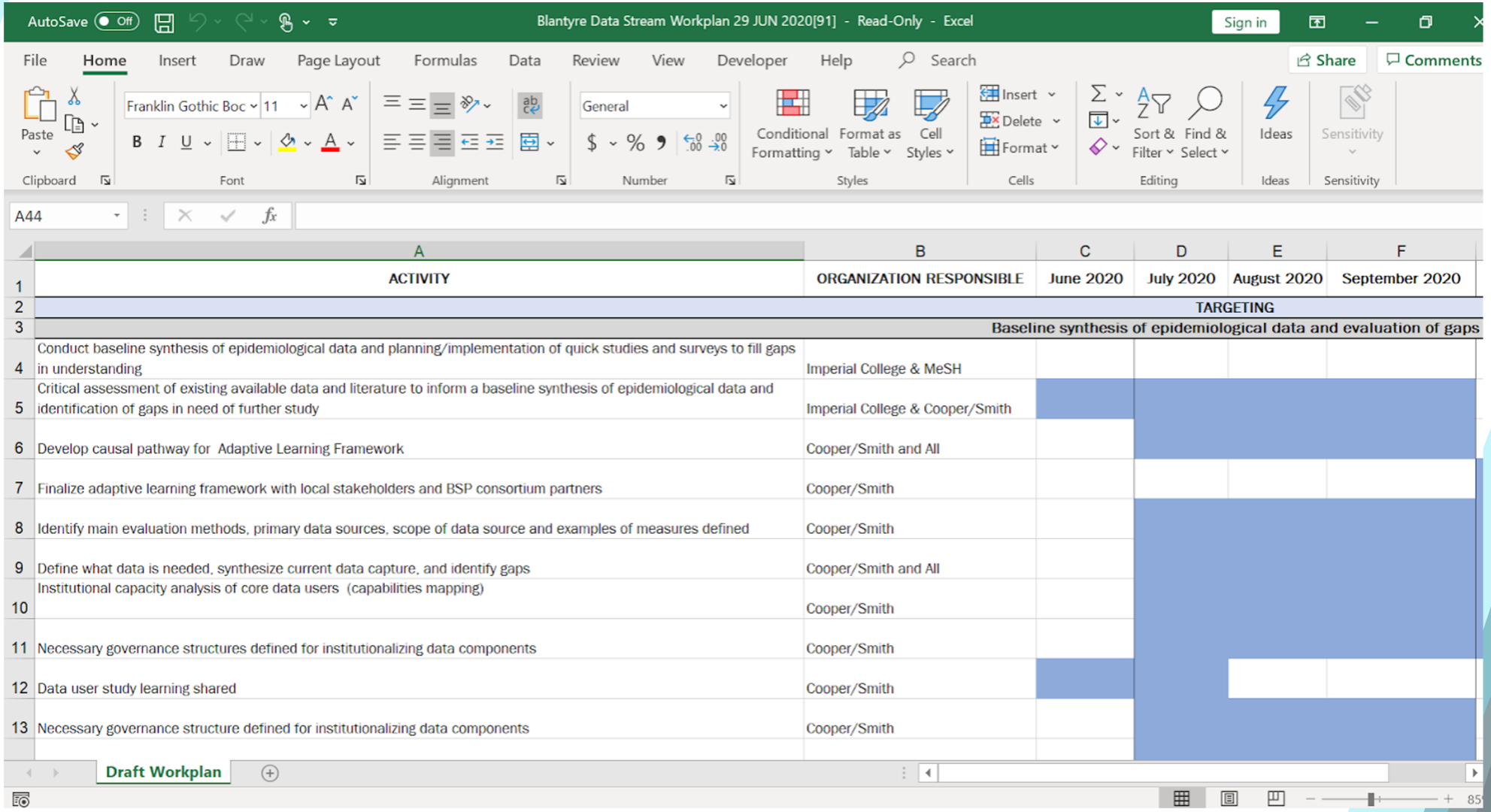
5. BPS Work Plan



	A	B	C	D	E	F
1	ACTIVITY	ORGANIZATION RESPONSIBLE	June 2020	July 2020	August 2020	September 2020
2	TARGETING					
3	Baseline synthesis of epidemiological data and evaluation of gaps					
4	Conduct baseline synthesis of epidemiological data and planning/implementation of quick studies and surveys to fill gaps in understanding	Imperial College & MeSH				
5	Critical assessment of existing available data and literature to inform a baseline synthesis of epidemiological data and identification of gaps in need of further study	Imperial College & Cooper/Smith				
6	Develop causal pathway for Adaptive Learning Framework	Cooper/Smith and All				
7	Finalize adaptive learning framework with local stakeholders and BSP consortium partners	Cooper/Smith				
8	Identify main evaluation methods, primary data sources, scope of data source and examples of measures defined	Cooper/Smith				
9	Define what data is needed, synthesize current data capture, and identify gaps	Cooper/Smith and All				
10	Institutional capacity analysis of core data users (capabilities mapping)	Cooper/Smith				
11	Necessary governance structures defined for institutionalizing data components	Cooper/Smith				
12	Data user study learning shared	Cooper/Smith				
13	Necessary governance structure defined for institutionalizing data components	Cooper/Smith				

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Did We Meet Our Learning Goals for the Summer? Yes!

Nathali

- Gain real-world experience in the global health sector.
- Apply knowledge gained in quantitative MScPH courses to real-world problems.

Deborah

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Thank you!

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Feedback

- Start the Mitacs process earlier

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