**Notes: GCRF Hub Meeting October 31**

**Accelerator analyses (Will Rudgard and Mark Orkin)**

17 SDGs; accelerator actions: take us forward more quickly across a broad range of SDG targets

UNDP: identifying accelerators and bottlenecks to achieving them

* Step 1: identifying those accelerators that drive progress across SDGs

Mzantsi Wakho cohort data, over two time points, driving the Lancet C&AH publication analysis

* 6 hypothesized accelerators include: cash transfers, safe schools, free schools, parenting support, free school meals, school support
* Linking 11 adolescent outcomes

How to choose accelerators? They may include:

* Interventions: cash transfers, schooling (with no fees, meals)
* Practices for which interventions could be implemented: positive parenting, safe schools
* Should be specific and not vague: improving food security > food support/ no hunger/ access to school meals

Lucie: thinking-in-progress

* Had to be something where there was an evidence-based intervention for, there is a cost-opportunity for policy recommendations, for NGOs
* Sometimes you see research concluding that “it’s bad to be in a rural area” – but that has no actual actionable policy implication; so, we are trying to narrow down accelerators to say:
  + We have issues that we can do something about
  + We have evidence for things that work
* But, still an exercise to think about how to operationalize accelerators, drilling down from UNDP, things to actually test, and recommend
* “Program known to reduce food security” is another layer of accelerator goal to “improve food security”

Studies may investigate one, or multiple potential accelerators

Recommendations for mapping into analysis mode:

* **\*Map out potential accelerator variables** and SDG-outcome variables within datasets
* **\*Logical checks**: theory/evidence on accelerators in LMICs, SSA best case, for adolescents, or at all
  + ET: Check that it makes sense for certain accelerators to be linked to each other at all
  + Chris: suggested a theoretical check, too
* **\*Data checks**: inspecting potential accelerators and SDG outcomes for correlation
  + Examining the frequencies of all the variables you are looking at: declaring missing values
  + Exploratory analysis (2x2 tables/crosstabs, correlation matrix) just to see if these two things have anything going on, if worth putting in a regression
  + A start, to get the feel of the data (MO); sometimes crosstabs give you a good sense of things
* Knowing your data can dictate how you proceed with analysis, and how you select accelerators
  + Data checks to do for any analysis: but this is a step further
  + Control variables to be mindful of
  + Impact of cash transfers: hard to use if 85% already have a cash grant
  + Same on the other side: if very few are satisfied (e.g. having a school counselor, having food parcels) because not enough people getting these services
* Maisha, as an example from Heidi: few variables that can actually be used, so less focus on how good they are as pairs, but just what is usable. For others, more outcomes, beyond theory, strength in the cross tabs, allowing for more measured, focused analysis.
* Some kind of system set up before playing with the data too much.

LS: asking about cognitive development causes and accelerators

* Response: Accelerator is an intervention, cognitive development is the outcome. Intervention found to improve cognitive development can be identified as the accelerator.
* Lucie: not so simple, UNDP conversation (who conceptualized accelerators, but have not operationalized them) – outcomes are SDG goals or goal-targets. And the inputs could be an intervention, like social protection
  + But: social protection is a SDG
  + So, SDGs are a mix of interventions as well as outcomes that we want
  + What we are putting in as accelerators are also a mix.
  + So, kind of have to find something that is sensible. The SDGs are a muddle, as is the real world, as are our studies. So we are having to make sense of these decisions and make decisions that relate to policy.
* ET: What are other things that fit – what are the interventions that improve cognitive development that you could cost, apply, roll out? Building the story. Numbers, as well as stories.
  + Food supply better, keep in school, and no home abuse – then of course we can improve across multiple domain
  + It has to have purpose, and meaning – think strategically about what you put in and not just ‘fishing around’ in a big table.
* Olayinka: Primary and secondary accelerators: like primary colors, some that amplify or fundamentally change when you mix them
  + Cash transfers, feeding program: now making a child stay in school, perform well – cognitive development itself is still an accelerator at a secondary, next level. Stay in school, less likely to use drugs, and so on.
  + A lot of things are like this – building blocks happening at different levels. The basic level things, and then contributing upwards. Outcomes at next level become accelerators.
  + Time-dependent accelerator: timelines of when, and how, to intervene to promote best acceleration, leveling can also happen depending on where it is being delivered
* LC: A visual representation of these? Dominoes that divert, result in cumulative, positive inputs
  + MO: levels mean something else when you get statistical – these are, in effect, are mediators, which often have temporal succession
  + Improved nutrition -> improved cognition -> improved employment
  + First stage analysis with an accelerator and outcome (cognition); then a follow-on analysis with a new accelerator (cognition) and outcome (employment)
  + After the immediate correlations between A and outcome, B and outcome, wonder whether A works via B onto the outcome
* These are tools to explain why some things are both the accelerator and outcome.

What are the groupings of accelerators? And typologies? To help us make sense of things. Interlinkages between the SDGs, UNDP visual

* About the population: adolescents specifically, accelerator synergies in adolescents
* Primary in childhood, primary adolescence, secondary later, etc.
* Cross-sectionally versus longitudinally: less strong, but able to find cross-sectional correlations (conceptual sequence even if not temporal)
* Cash transfers and depression: never able to say depression as cause of cash transfer (logic checks about causality), e.g. so building matrix about potential SDGs and accelerators, and question marks around things that could be both.

Population under study: why might they not have received a certain intervention?

* Couldn’t receive free school if not enrolled in schools: thinking about these gaps, how to best capture population

\*Then… can **run single outcome regressions** with accelerators and controls, and then running **multiple outcome regressions** with accelerators and controls

Multiple dependent variables that might all be influenced by inputs

Testing for accelerators:

Cash transfers = accelerators

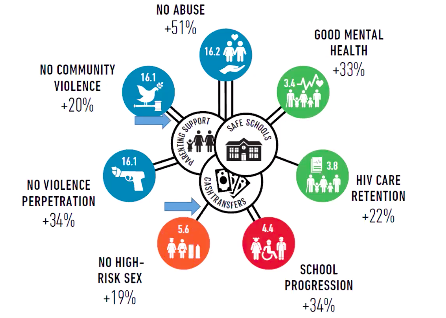
HIV care retention, no abuse, school progression = outcomes

MO giving a bit more context behind this:

* Safe schools as accelerator, with 5 outcomes
* Start with separate regressions, see what they show: one predictor (e.g. safe schools) and look at crosstab (e.g. correlate with mental health) and do these cross tabs separately.
* Then, might run them as regressions, one by one. Safe schools as independent variable (predictor) and good mental health (dependent, outcome variable). Some control variables to add in, too – e.g. different between rural and urban, girls/boys, to put in as a control variable, but not primarily examining it for the moment.
  + A single regression: safe schools – mental health regression with a set of control
  + Single data set, at a single point in time, or two points in time
* Then, five separate regressions, learn quite a lot from these – which controls may be influencing outputs.
* Reviewers: but both predictors and outcomes probably correlated, too! Better mental health often leading to better school progression, e.g. clearly a UNDP accelerator, but what about these correlations between outcomes.
  + Composite model: Stata will say, put in the following commands, do all at once, simultaneously take into account correlations of the outcomes.

Next step from there: if you then add another element and have multiple accelerators identified/multiple independent variables – then enhance the effect of multiple outcomes.

* Synergy between accelerators
* Combination = better than one of those by themselves? Lines showing how many (1, 2, or 3 accelerators) have the impact on the outcome of interest.



Olayinka again brings up typologies – cash transfers versus schooling (these are so different and require different levels of resources/coordination).

* Talking about the complexity of the intervention? or its point of addressing?
* Inputs – and also acknowledging cash transfers as a form of parenting support (interaction of the multiple accelerators)
* Conceptualizing and defining accelerators: are we breaking them into single ingredients? A one-off parenting program e.g.?
* More discussion to take place in January – and later in the day.

Do you receive x, y, z? what is the impact?

We estimate the effect of receiving x and y as independent predictors, combine what those effects might be.

* Slightly different: this approach allows you to see the independent predictor
* Combine at the beginning, not sure what would be an independent predictor
* Sometimes it only works when you get two instead of one single
  + One great thing sometimes only works in tandem with something else

LC: Does something have to be an accelerator on its own in order to combine and assess that synergy? Or can you have something that doesn’t work on its own, but when combined, has lots of impact? This was debated and is complicated, so decision was made about how to approach it.

* MO: Check between accelerators for interaction effects, so that may capture some of it (the interactions, seeing what works alone vs. together, has an effect)
* Do these two predictors interact? Most frequently, don’t

What is probability of experiencing no abuse given x (parenting support)? What’s the probability then of experiencing no abuse if given x + y (parenting support and cash transfers)? Marginal effects

* Looking at how this shifts – collect questions, issues, that have come up
* Webinars to come together again and take these issues apart – show about where aiming to go

Concept of synergy: other predictors that are also independently associated with no emotional/physical abuse: with no intervention, 25% probability of no abuse, higher probability with receiving other accelerators.

* Not just a linear combination of the effects of these interventions

Predictive margins and marginal effects: use those regression coefficients to estimate the predicted probability of experiencing… [LC: ENGLISH PLEASE!] … use the regression estimates, to say – “what would be the change in my chances of experiencing outcome of interest e.g. abuse, if I were to get one of these accelerators”

* Receiving, vs. not receiving the accelerator
* Simplifying for LC to understand: Giant tables to get a stronger sense of 0, 1s satisfying the criteria: big fancy matrix of what we have, don’t have, what outcomes are
* Added bonus from these additional things = marginal effects
* MO: simple version to send around; if you have predictor 1 (parenting), predictor 2 (cash) and predictor 3 (food) all in line with outcome; spreadsheet shows levels of gains depending on which are ‘turned on’
* Policymakers can get behind a bar graph showing impact per predictor, simplifying

**Accelerator typologies:**

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| **Formal vs.** | **Informal** |
| Solar power | CBO provision |
| Malaria prevention | Buddy support |
| Cellphone data |  |
| Sanitation |  |

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| **Adolescent-received vs.** | **Caregiver/home-received** |
| Parenting skills training | Cash transfer |
| Savings training |  |
| Sex education |  |
| Substance use reduction |  |

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| **Policy vs.** | **Practice/programming** |
| Legislation | Good parenting as routine practice |
| Age of consent | Good parenting interventions |
| Ban on corporal punishment | Boost self-esteem programmes |
| Mandatory reporting of VAC |  |
| Universal/obligatory education to higher level |  |

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| **Composite vs.** | **Simple** |
| Not being depressed -> access to services | School meals + free school |
| Viral load suppression | 12 months retention on ART |

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| **Early (<10?) vs.** | **Current (10-19?)** |
| Breast-fed vs. formula-fed | Sex education (not abstinence-only) |
| Attended ECD / preschool | Out of home care |
| Experienced parental death | Risk behavior |
| Brought up/cared for by grandparent | Teen pregnancy |
| Illness/disability | School achievement |
| Premature babies |  |
| Malaria |  |
| Durability |  |
| Stable caregivers in infancy |  |
| Free antenatal care |  |
| Text messages to mothers to remind about immunizations |  |

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| **Universal vs.** | **Targeted** |
| Free school/free primary school education | Positive parenting for adolescents living with HIV |
| Health care | Post-abuse services |
| Transport | Help with HIV disclosure to children (adult HIV or child HIV) |
| Pension | Antenatal care |
| School feeding | Keep adolescent mothers in school |
| Uniform/textbooks | HIV/AIDS support groups |
| Social care support for parenting | Adolescent-friendly clinics |
| Abortion services | Regular visits to adolescent mothers |
| Sporting activities |  |
| Physical activities/section |  |
| School feeding |  |
| Parenting programmes |  |
| Provision of role models in schools |  |

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| **Primary vs.** | **Secondary** |
| School | Drug abuse reduction |
| Antenatal clinics | Cognitive stimulation |
| Food/nutrition | Reduce rates of depression |
| Immunization |  |
| Birth registration |  |
| Befriending programmes |  |
| School reading programme |  |
| School feeding programme |  |
| Place libraries in schools |  |
| School buses |  |