UAEM

UNIVERSITIES ALLIED FOR ESSENTIAL MEDICINES

University Report Card: Global Equity & Biomedical Research

2016-2017 Canadian Iteration Methodology

DETAILED METHODOLOGY

This document provides a comprehensive overview of the methodology to be used in evaluating Canadian universities for the first Canadian version of Universities Allied for Essential Medicines' (UAEM) University Report Card project. In addition to delineating our detailed methodology for data collection and scoring, we also address quality control and data reliability considerations.

PROJECT OVERVIEW

SUMMARY:

UAEM's Canadian Report Card project evaluates 15 of Canada's research-intensive universities on their contributions to biomedical research on neglected health needs, access to medicines, and education concerning access and innovation issues. The Report Card uses both publicly available and self-reported information to evaluate academic institutions on three key questions:

1. To what extent are universities investing in innovative biomedical research that addresses the neglected health needs of resource-limited populations?
2. When universities license their medical breakthroughs for commercial development, are they doing so in ways that ensures equitable access for all marginalized and vulnerable populations in high, middle and low-income countries? What steps are they taking to ensure innovative treatments are made available at affordable prices?
3. What efforts are universities making to educate the next generation of global health leaders about the crucial impact that academic institutions can have on global health through their biomedical research and licensing activities?

PURPOSE:

We view the University Report Card as an advocacy tool for universities to assess their own progress in investing in innovative biomedical research that addresses neglected global health needs and additionally, their progress in ensuring that this research is made accessible to all. The Report Card is also an opportunity for students and faculty members to hold their universities accountable for their public commitments to neglected areas of global health.

RATIONALE:

Universities are major drivers of medical innovation. Between 1/4 and 1/3 of new medicines originate in academic labs [1], and universities have contributed to the development of one out of every four HIV/AIDS treatments.[2] There is enormous potential for universities to leverage their investment in biomedical research to advance global health. The size and scope of this impact, however, depends on decisions about where to focus research, how to share new discoveries, and what to teach a rising generation of young global health leaders.

More than 1 billion people worldwide suffer from 'neglected diseases' – illnesses rarely researched by the private sector because most of those affected are too poor to provide a market for new drugs.[3] Furthermore, 10 million people die each year simply because they can't access lifesaving medicines that already exist – often because those treatments are just too expensive.[4] With new global health challenges such as Zika and antimicrobial resistance, the lack of transparency in research, including for clinical trials, and the lack of alternative models for efficient and sustainable innovation, the gap between vulnerable populations and affordable treatment threatens to widen even further.

Universities can use their unique positions as public interest, largely publicly funded research institutions to address both of these challenges. By prioritizing research on global diseases neglected by for-profit research and development (R&D), they can pioneer new treatments that will benefit millions in low- and middle-income countries (LMICs). And by sharing their medical breakthroughs under open, non-exclusive licenses, or licenses that promote lower prices not only for LMICs but also underserved populations in high-income countries (HICs), universities can help poor patients worldwide access new, lifesaving treatments. Universities can also play a critical role in educating their students about these issues in order to empower them to take on these global health challenges in their own work.

Some universities are already taking these steps – along with teaching students about the challenges of neglected disease innovation and treatment access. However, few have tried to systematically measure universities' contributions in these vital areas. UAEM's University Report Card fills that gap. The first iteration of the Report Card, released in 2013, evaluated both American and Canadian institutions together. However, major Canadian universities differ in key respects to their American counterparts in regards to biomedical research funding. For example, the primary federal agency responsible for medical research in Canada is the Canadian Institutes of Health Research, and although it is comprised of <u>13 institutes</u> focusing on specific areas of research, it is significantly smaller than the U.S. National Institute of Health, which is comprised of of <u>27 institutes and centers</u>. Additionally, all major Canadian research universities (as defined by being a member of the U15) are public universities, whereas as a large majority of research-oriented academic institutions in the U.S are private.[5] These discrepancies are difficult to standardize when evaluating resources being allocated to global equity in biomedical research across Canadian and American universities so we have chosen to evaluate universities within each country separately. This will be the first entirely Canadian iteration of the University Report Card, following the release of a U.S.-specific iteration in 2015. A detailed report of changes between the 2013 methodology and the new methodology provided below can be found **here**.

GENERAL NOTES ON METHODOLOGY:

Selection of Universities
Rather than rank Canadian universities based on the amount of Canadian Institute of Health Research (CIHR) and the Natural Sciences and Engineering Research Council (NSERC) funding received to determine a specific number of universities to evaluate, the Canadian iteration specifically evaluates the universities that are members of the U15.

The U15 is a non-governmental organization designed to represent the interests of its member universities concerning research and development for the Canadian government. Collectively, the members of U15 represent 47 percent of all university students in Canada, 71 percent of all full-time doctoral students in the country,[5] 87 percent of all contracted private-sector research in Canada, and 80 percent of all patents and startups in Canada. The universities that are currently members of the U15 are (in alphabetical order):

University of Alberta
University of British Columbia
University of Calgary
Dalhousie University
Université Laval
University of Manitoba
McGill University
McMaster University
Université de Montréal
University of Ottawa
Queen's University
University of Saskatchewan
University of Toronto
University of Waterloo
University of Western Ontario

While the University Report Card aims to equip student and faculty-led advocacy on individual campuses, we also see the inherent value in communicating with national bodies that seek to represent the interests of universities collectively. The U15 is an organization committed to advancing an agenda centered on enhancing and optimizing the Canadian research environment by informing public policy and building partnerships with both the public and private sectors. We believe that the principles underlying global equity in biomedical research are an important aspect of that agenda. It is for this reason, alongside the fact that the U15 accounts for 79 percent of competitively allocated research funding in Canada, that we will be evaluating U15 member institutions specifically.[6]

1. Kneller, Robert The importance of new companies for drug discovery: origins of a decade of new drug, Nature Review Drug Discovery, 2010
2. Sampat, Bhaven Academic Patents & Access to Medicines in Developing Countries, American Journal of Public Health, 2009
3. Hotez PJ, Molyneux DH, Fenwick A, Kumaresan J, Sachs SE, Sachs JD, et al. Control of neglected tropical diseases. N Engl J Med. 2007; **357**(10): 1018-27.
4. World Health Organization. Equitable access to medicines: a framework for collective action. Policy Perspectives on Medicines, 8: 1-6. WHO, Geneva, Switzerland.
5. http://u15.ca/our-members
6. http://u15.ca/our-impact

Selection of Evaluation Metrics and Comparability of Data Across Institutions
While we acknowledge there will be variation across universities selected for evaluation (e.g. in levels of research funding, student body size), we also recognize that these institutions are public universities. This homogeneity among Canadian universities will allow for more direct comparisons than would be possible with a mix of public and private institutions. Regardless, UAEM has selected evaluation criteria intended to minimize the impact of any variations that may arise.

Importantly, all metrics that analyze continuous variables account for variation in school size and funding by normalizing the absolute number to the overall level of combined CIHR, NSERC and Gates Foundation funding. For example, when evaluating a university's investment in neglected disease (ND) research, Antimicrobial Resistance (AMR) and neglected aspects of HIV/TB/Malaria, our metric is calculated by dividing a given institution's overall medical research funding devoted to ND and related research projects (from the >100 funding sources included in the G-Finder report) by the total CIHR + NSERC + Gates funding to generate an "ND Innovation Index". This enables us to adjust for confounding by institutional size and allows for a meaningful comparison of performance across institutions.

For categorical metrics, we have developed pre-defined sets of discrete categories by which all universities can be uniformly evaluated, and for which performance is likely to be independent of variation in university size, funding, capacity or resources.

Overall Data Quality and Reliability Considerations
A critical aspect of the Report Card methodology is the collection and analysis of data using two broad categories of data extraction:

1. Data obtained by accessing publicly available sources, such as university websites, online grant databases, and search engines; these data are collected by UAEM members, staff, and interns
2. Data obtained by self-report of university officials in response to survey instruments designed and provided by UAEM

We attempt to maintain rigor and minimize biases by systematically collecting and analyzing data according to detailed, predetermined standardized operating procedures (SOPs).
For CATEGORY 1 (PUBLIC DATA), we address data quality and consistency as follows:
● We prospectively developed SOPs and standardized data entry forms, including uniform search terms to which all investigators are required to adhere.
● We performed quality control tests to ensure that investigators were obtaining the same results from the collection procedures.
● Where possible, multiple individual investigators independently and concurrently perform the same data collection and search processes to ensure consistency of data.

For CATEGORY 2 (SELF-REPORTED DATA), we address data quality and consistency, including concerns about questionnaire non-response, as follows:
● Compared to the first iteration of the Report Card, we chose to reduce the number of questions we asked of administrators if answers could be easily verified via public sources by our team of investigators.
● We provide the same questionnaires to all institutions.
● We have developed a standardized process for identifying and verifying contacts to receive questionnaires at each institution.

- We identified between 5 and 10 specific administrators in leadership positions at each university whom we felt are most likely to recognize the value of the surveys and would encourage a response from within their teams. The individual contact details were searched publically via the website and if not via the internal site via students at those institutions. Finally phone calls were made if the contact details could not be ascertained by these means The list includes but is not limited to directors of technology licensing offices, deans of individual schools (law, public health, medicine), and vice presidents for research.
- We use standardized communication strategies to deliver the survey instruments to all institutions and conduct consistent follow up via e-mail; institutions are given at least 1 month to respond to all survey instruments, and each administrator is contacted a minimum of three times to encourage response.
- Where possible, we have asked questions in a manner such that the variable under question is categorical, rather than continuous; this is in an effort to maximize the likelihood of response from institutions.
- We apply standardized scoring of responses across all institutions.
- We measure and report response rates both for the entire questionnaire and for individual questions.
- If more than one person per institution replies, and there is discrepancy in the responses, first we aim to verify the correct answer via verified public sources. If this is not possible, we elect to use the answer that favors the university.

We also review the grading from past years for included universities to make sure that we capture all previously recorded data.

SCORING OVERVIEW:

As in previous iterations and given the purpose of the Report Card, greater weight is allocated to the Innovation and Access sections, with each section accounting for 35% of the total grade. The Empowerment section is worth 20% of the total grade due to the increased challenges in evaluating these specific metrics and the lack of a measurable correlation between these metrics and their impact on increasing access to medicines and addressing neglected diseases in low- and middle-income countries. Finally, the newly added Transparency section is worth 10% of the total grade since we believe that open and collaborative biomedical research is essential to ensuring access and innovation for all.

For each question, the institution is assigned a *raw score* from 0 to 5, based on the data that is gathered. Each question is also associated with a *weighting multiplier* from 0.25 to 2.5, based on the relative importance of each question as determined by UAEM's report card team. The *weighted score* for a given question is the product of the *raw score* and the *weighting multiplier*. To minimize bias due to non-response to CATEGORY 2 (self-reported) questions, we have designed the Report Card such that each section is a mix of CATEGORY 1 (public data) and CATEGORY 2 (self-reported) questions.

DETAILED METHODOLOGY – BY SPECIFIC SECTION AND QUESTION:

NOTE: Please let us know if you would like to be provided links to or copies of any of the forms, documents, SOPs, or other materials referenced below. For further information please contact: reportcard@essentialmedicine.org.

Scope and Definitions

For the purposes of this iteration of the UAEM Report Card, "neglected diseases" (NDs) are defined as diseases that disproportionately affect low- and middle-income countries. Our list of NDs and research areas was based on the criteria set by the GFINDER 2014 survey on global neglected disease innovation funding and the World Health Organization's list of recognized neglected tropical diseases. The scope of the research areas included was further focused in adding terms of subject matter and application. Notably, this definition of ND includes Ebola, Zika, Antimicrobial resistance, AIDS, HIV, tuberculosis, malaria, diarrheal diseases, meningitis, and pneumonia; however, for several of the diseases there are substantial restrictions to include only aspects or subsets of these diseases that are truly neglected. For example, we did not include all research on HIV, only research pertaining to pediatric HIV, HIV diagnosis, diagnostics, microbicides, and vaccines.

In regard to "Alternative Research and Development (R&D)", our working definition for this iteration of the UAEM Report Card is derived specifically from the inclusion criteria developed and used in the UAEM Re:Route Report. Alternative biomedical research initiatives must apply de-linkage plus one or more of the following innovative mechanisms:

      a. a pull mechanism

      b. a push mechanism

      c. pooled funding and/or an IP pooling mechanism

      d. broad collaboration

      e. open approaches to R&D (open source, open data sharing, open innovation)

Working definitions for each of these mechanisms are available in the UAEM Re:Route Report.

SECTION 1: INNOVATION

I-Q1: What percentage of the University's total funding received from **CIHR, NSERC,** and the **Gates Foundation** is dedicated to global health research, training and collaborations?

CONTINUOUS
Weighting Multiplier: 1.5

Possible choices (raw score):
- 0% (0 points)
- 1-5% (1 points)
- 6-10% (2 points)
- 11-20% (3 points)
- 21-40% (4 points)
- 41-100% (5 points)

Data Collection: CATEGORY 1 AND 2. Public Datasets are collected from the CIHR, NSERC and Gates Foundation online grant data (narrowed to global health focused grants). We search by university for total funding received in FY 2015 and 2016 from the CIHR and NSERC databases and from Gates specifically for global health. For the Gates Foundation, this includes global health grants listed under global development or policy, global health, advocacy, and country programs. Data is aggregated by university.

Quality Maximization Strategy: Publicly available and standardized data sources are used for evaluation, drawing directly from reputable Canadian government databases and foundation websites. To ensure accuracy of data compilation, multiple investigators independently perform the same collection and analysis process where possible, with results compared for deviations/errors. The total funding from CIHR, NSERC, and the Gates Foundation serves as the denominator to normalize the data for this metric so that universities with large research budgets are not unfairly advantaged in this evaluation.

I-Q2: What percentage of the university's total biomedical research funding received from **CIHR, NSERC,** and the **Gates Foundation** is devoted to projects focused on neglected diseases (NDs), neglected aspects of HIV/AIDS, Tuberculosis, Malaria, and/or antimicrobial resistance (AMR)?

CATEGORICAL (Percent Range)
Weight Multiplier: 1.5

Possible choices (raw score):
- 0% (0 points)
- 0.01-0.5% (1 points)
- 0.51-1.0% (2 points)
- 1.01-1.50% (3 points)
- 1.51-2.0% (4 points)
- >2.0% (5 points)

Data Collection: CATEGORY 1. For each institution, we calculate an index score based on total grant funding received for research on neglected diseases in FY2015 as reported in G-FINDER reports for this year (numerator), and the total combined funding reported by the CIHR, NSERC and Gates Foundation for this year (denominator). The G-FINDER report is considered the most comprehensive and authoritative database of neglected disease grants, and includes funding for NDs from >100 sources, including government, industry, and philanthropic foundations.

Quality Maximization Strategy: The G-FINDER report is recognized as an authoritative study that draws on expertise from investigators with a variety of backgrounds, including academia, industry, and the nonprofit sector. In order to effectively compare investment in ND research across institutions with varying total research funding, we calculate ND investment as an index variable, rather than comparing absolute dollar amounts. The total funding from CIHR, NSERC, and the Gates Foundation serves as the denominator to normalize the data for this metric so that universities with large research budgets are not unfairly advantaged in this evaluation. To create a larger range of values for analysis across universities we divide all percentages by the highest percentage found and assess these values using the above grading scale.

I-Q3: What percentage of the university's total medical PubMed publications are focused on global health?

> CATEGORICAL (Percent Range)
> Weighting Multiplier: 1.0

Possible choices (raw score):
- 0% (0 points)
- 1.00-2.00% (1 points)
- 2.01-3.00% (2 points)
- 3.01-4.00% (3 points)
- 4.01-5.00% (4 points)
- >5.01% (5 points)

Data Collection: CATEGORY 1. For each institution, the total number of citations specific to global health and/or affiliated with a university's department of global health is tabulated as reported through PubMed. A comprehensive search query ("international health" OR "global health" OR "global public health" OR "World Health Organization" OR "the WHO" OR "LMIC" OR "lower middle income country" OR "lower-income" OR "middle-income" OR "global governance" OR "public health politics" OR "global health institute" OR "low and middle-income countries") has been created to acquire a broad perspective on scientific and nonscientific research pertaining to global health within a university from the period between January 2015 and August 2016. The number of publications associated with each university is delineated using the PubMed filter option, and an aggregate number of global health research publications is obtained for each university. To normalize across universities, this number is divided by a total number of publications for each institution within this same time period.

Quality Maximization Strategy: Key terms associated with global health are utilized in the search, including "global health" and "international health." The search query is constructed to encompass as many publications associated with global health as possible to capture each university's broad research efforts in this arena. Therefore, the total number of publications is obtained solely from PubMed as it contains citations for both scientific and nonscientific research. PubMed is a comprehensive and widely used source for research publications. We use a single search engine to avoid repeats of the same publication and thus over-reporting the number of publications from each university. Multiple investigators independently collect and compile the same data to ensure accuracy. In order to create a larger range of values across universities for analysis we divide all percentages by the highest percentage found and assess these values using the above grading scale. If the standardized value of ND publications (as defined in IQ4) is higher than this value of global health publications, we substitute this value for the ND value.

I-Q4: What percentage of the university's total medical PubMed publications is focused on neglected diseases, neglected aspects of HIV, TB, malaria, antimicrobial resistance, and/or access to medicines in low- and middle-income countries?

> CATEGORICAL (Percent Range)
> Weighting Multiplier: 1.0

Possible choices (raw score):
- 0% (0 points)
- 1.00-2.00% (1 points)
- 2.01-3.00% (2 points)
- 3.01-4.00% (3 points)
- 4.01-5.00% (4 points)
- >5.01% (5 points)

Data Collection: For each institution, the total number of citations specific to neglected diseases is tabulated as reported through PubMed. A comprehensive search query is created to encompass these diseases and their associated areas of research from the period between January 2015 and August 2016. The number of publications associated with each university is delineated through the PubMed filter option, and an aggregate number of neglected disease specific research publications is obtained for each university. To normalize across universities, this number is divided by a total number of publications for each institution within this same time period. For a complete list of included search terms, please see the Annex (p. 22).

Quality Maximization Strategy: CATEGORY 1. Our list of diseases includes those from the criteria set by the G-FINDER 2015 and the World Health Organization's list of neglected diseases. The G-FINDER report is recognized as an authoritative study that draws on expertise from investigators with a variety of backgrounds, including academia, industry, and the nonprofit sector. The search query is constructed to encompass as many publications associated with the listed diseases by 1) including all permutations of common and scientific names for the diseases and 2) additionally pairing each disease identifier with an

associated area of research (e.g. vaccines, diagnostics, etc.). Total number of publications is obtained solely from PubMed as it contains more than 23 million citations for biomedical and life science literature. PubMed is a comprehensive and widely used source for scientific research publications, and a single search engine is used to avoid repeats of publications and thus over-reporting the number of publications from each university. Multiple investigators independently collect and compile the same data to ensure accuracy. In order to create a larger range of values across universities for analysis we divide all percentages by the highest percentage found and assessed these values using the above grading scale.

I-Q5: Does the university have a research center or institute dedicated specifically to neglected diseases and/or neglected aspects of HIV/AIDS, TB, Malaria, or AMR?

> CATEGORICAL
> Weighting Multiplier: 2.5

Possible choices (raw score):
- Responded 0 or failed verification for existing center(s) (0 points)
- Responded with plans to open at least one center/institute (HIV/AIDS, TB, Malaria, AMR or ND) in the next five years (1 point)
- Has a (verified) HIV/AIDS, Tuberculosis, Malaria, or AMR Center (2 points)
- Has more than one (verified) HIV/AIDS, Tuberculosis, Malaria, or AMR Center OR one ND (verified) center (3 points)
- Has an HIV/AIDS, Tuberculosis, Malaria, or AMR Center (verified) AND has (verified) plans to open a neglected disease (as defined by WHO) center within the next five years (4 points)
- Has a (verified) neglected disease center AND one or more HIV/AIDs, TB, malaria, or AMR (verified) centers (5 points)

Data Collection: CATEGORY 1 AND 2. Multiple research administrators at each institution are systematically contacted requesting response to an online survey instrument. For institutions that fail to respond to our requests, multiple investigators will perform a manual web search for a standardized set of search terms, such as "<UNIVERSITY NAME> neglected tropical disease." The top 15 returned results are screened for evidence of possible research centers focusing primarily on neglected diseases at these institutions. Additionally, a verification process is applied for all institutions that report the presence of a specific neglected disease-focused research center. In order to be verified as "Yes" for this question, the research center requires a specific focus on at least one of the neglected diseases included in the G-FINDER definition. After following the links provided by the respondent, if it is ascertained that the center mentioned is not in fact specifically focused on at least one neglected disease (e.g. a general infectious diseases or global health department), then the university receives zero points as it is not considered to meet the criteria listed.

Quality Maximization Strategy: Respondents are given at least 3 opportunities to respond to the survey. For institutions that fail to respond, multiple investigators conduct a systematic review of university websites in order to identify any centers associated with the university and primarily focused on neglected diseases. These measures are taken to avoid false negatives. Additionally, verification is performed to rectify erroneous reporting on the part of universities (to avoid false positives).

I-Q6: How many Grand Challenges Canada grants has the university been awarded between FY2013 and present?

> CATEGORICAL (Number of Grants)
> Weighting Multiplier: 1.5
>
> Possible choices (raw score):
> - 0 (0 points)
> - 1 (1 point)
> - 2 (2 points)
> - 3 (3 points)
> - 4 (4 points)
> - 5+ (5 points)

Data Collection: CATEGORY 1. For each institution, the total number of projects during FY2015 and FY2016 can be found through the Grand Challenges Canada public database under the "Institutions" tab (http://www.grandchallenges.ca/our-innovators/).

Quality Maximization Strategy: Multiple investigators independently tally the total number of grants awarded to institutions to ensure that the amount is consistent and to avoid false reporting.

I-Q7: In the wake of the current Zika epidemic, how has your institution responded to the lack of innovation that currently exists for prevention, diagnosis and/or treatment of this disease?

> WRITTEN-RESPONSE (Not Graded)

Data Collection: CATEGORY 1 and 2. Multiple research administrators at contacted institutions are given the option to respond in a textbox. These responses are not included in the official grading of the university, but are displayed on the official Report Card site to showcase how Canadian institutions are responding to the current Zika global health crisis. As well, our own investigators conduct a Google search using keywords: Institution Name + "Zika". The top 15 hits are analyzed for any research projects, publications, seminars or other educational sessions associated with the university and they are listed in the response form.

Quality Maximization Strategy: Since these responses cannot be normalized to account for the institution's size, these responses are optional and not for official grading.

I-Q8: Is any of the university's medical research being done in collaboration with, funded by or driven by alternative models for research and development? (e.g Drug Discovery and Data-Sharing platforms, Prizes, Philanthropy for Drug Discovery, Drug Patent Pools, Public-Private-Partnerships etc.)

- Drug Discovery and Data-Sharing Platforms
- Prize Funding
- Tax subsidy/priority review vouchers
- Innovation fund/platform
- Venture Philanthropy for drug development and discovery
- Drug Patent Pools
- Product Development Partnerships
- Larger Public-Private Partnerships
- Other

CATEGORICAL (Number of partnerships)
Weighting Multiplier: 2.5

Possible choices (raw score):
- No response (0 points)
- Responded but no partnerships provided (1 point)
- 1 partnership option checked (2 points)
- 2 partnership options checked (3 points)
- 3 partnership options checked (4 points)
- 4+ partnership options checked (5 points)

Data Collection: CATEGORY 1 AND 2. University research administrators check off as many options as are applicable. If an option is checked, a textbox below will appear to ask for a detailed list of said research collaboration that is being conducted by the institution and fits the description. Internally, multiple investigators conduct independent Google searches using a specific set of keywords to identify institutions with any medical research being conducted via partnerships with alternative models for R&D (the first ten hits from the Google search are evaluated). As well, investigators search the UAEM Re:Route report, a mapping of alternative R&D initiatives, for the university's name to identify other instances of alternative R&D being conducted in partnership said institution.

Quality Maximization Strategy: Responses from administrators are cross referenced with internal evaluation to ensure consistency and alleviate false positives and negatives. As well, any responses from administrators are further analyzed to make sure that reported research actually fits the definitions used for each type of alternative research and development.

KEYWORD SEARCH: University + "Medical Research" + "Prize Funding", University + "Neglected Disease" + "Prize", University + "Medical Research" + "Data Sharing", University + "Drug Patent Pools", University + "Drug Development" + "Public Private Partnerships"

I-Q9: Is the University currently engaged in or supporting research on Canadian drug pricing mechanisms to ensure equitable access to affordable medicines, or has research in this area been carried out in the past 2 years?

- University-wide Research Initiative
- Academic Chair for Canadian Drug Pricing
- Publication(s)
- Conference(s)
- Educational Seminar(s)
- Other

    CATEGORICAL (Number of initiatives for drug pricing research)
    Weighting Multiplier: 2.5

Possible choices (raw score):
- No response (0 points)
- Responded but no initiatives provided (1 point)
- 1 initiative checked (2 points)
- 2 initiatives checked (3 points)
- 3 initiatives checked (4 points)
- 4+ initiatives checked (5 points)

Data Collection: CATEGORY 1 and 2. University research administrators are able to check off as many options for drug pricing initiatives as are applicable. If an option is checked, a textbox will appear to ask for a detailed list of said research that is being conducted by the institution in relation to drug pricing. Internally, multiple investigators conduct independent Google searches using a specific set of keywords to connect institutions with any Canadian drug pricing initiatives they are leading, by analyzing the first 15 hits.

Quality Maximization Strategy: Responses from administrators are cross-referenced with internal evaluation to ensure consistency and alleviate false positives and negatives. As well, any responses from administrators are further analyzed to make sure that reported research actually directly addresses prescription drug pricing.

KEYWORD SEARCH: University + "Canada" + "Drug-pricing", University + "Canada" + "Drug shortage", University + "Canada" + "Universal pharmacare"

I-Q10: Is the university currently in one or more partnerships with a pharmaceutical corporation either via a specific research project, lab, center, initiative, or other model?

WRITTEN RESPONSE (Not Graded)

Data Collection: CATEGORY 1 and 2. Multiple research administrators at contacted institutions are given the option to respond in a textbox. These responses are not included in the official grading of the university, but are displayed on the official Report Card site to showcase how Canadian institutions are collaborating with the pharmaceutical industry. Additionally, our own investigators conduct a Google search using keywords: Institution Name + search terms related to pharmaceutical corporation partnerships. The top 15 hits are analyzed for any research projects, partnerships, and/or other forms of collaboration between the pharmaceutical industry and the university and these partnerships are listed in the response form.

Quality Maximization Strategy: Since these responses cannot be normalized to account for the institution's size, these responses are optional and not for official grading.

SECTION 2: ACCESS

A-Q1:
Part A: Has the university officially and publicly committed to licensing its medical discoveries in ways that promote access and affordability for resource-limited populations?

        CATEGORICAL
        Weighting Multiplier: 1.0

Possible choices (raw score):
- The university has taken no official action and has no plans to do so (0 points)
- The university has publicly committed to the general principle of global access licensing, but has not endorsed or disclosed specific strategies for promoting access through licensing (2 points); Example: Stanford Nine Points
- The university has publicly committed to a detailed, specific access licensing strategy, but that strategy does NOT emphasize enabling generic production of university-researched medicines for low and middle-income countries (3 points); Example: Statement of Principles for the Equitable Dissemination of Medical Technologies
- The university has publicly committed to multiple detailed, specific access licensing strategies, but those strategies DO NOT emphasize enabling generic production of university-researched medicines for low and middle-income countries (4 points); Example: Statement of Principles for the Equitable Dissemination of Medical Technologies & Stanford Nine Points
- The university has publicly committed to detailed, specific access licensing strategies that DO prioritize generic production of university-researched medicines for low and middle-income countries (5 points); Example: University of California Licensing Guidelines

Data Collection: CATEGORY 1. Multiple investigators, working independently and in parallel, initially review publicly available information. First, investigators obtain information from lists of university signatories to collective global access statements such as the "Statement of Principles and Strategies for the Equitable Dissemination of Medical Technologies" or the "Stanford Nine Points". Next, investigators us a standardized online survey instrument to systematically collect data specific to each university.

Quality Assurance Strategy: Only written statements that are publicly available are accepted as commitments or enumerations of strategy. For each institution, two evaluators conduct independent reviews of public data using the same standardized search locations and terms. Their findings are aggregated, compared, and reviewed for accuracy using the recorded links.

Part B: Does the website of the university's technology transfer office (TTO) make an effort to disclose, explain and promote access licensing commitments and practices?

>CATEGORICAL
>Weighting Multiplier: 1.0

Possible choices (raw score):
- The website makes no reference to promoting global access through socially responsible licensing (0 point)
- The website offers brief, limited, and non-specific statements on access licensing (1 points)
- The website references the university's endorsement, adoption or use of a specific, detailed access licensing policy, but does not post or link to the policy (3 points)
- The website provides or links to the full text of a detailed, specific access licensing document for the university OR offers in-depth explanations, case studies, license examples, press releases or other content focused on access licensing, but NOT both (4 points)
- The website provides or links to BOTH the text of a specific, detailed access licensing document AND additional in-depth content related to access licensing (5 points)

Data Collection: CATEGORY 1. Multiple investigators use a standardized data collection tool in order to review the Website of each university TTO.

Quality Assurance Strategy: For each institution, multiple evaluators conduct independent reviews of public data using the same standardized process. Their findings are aggregated, compared, and reviewed for accuracy using the links they record. If there is no consensus between results, a third or fourth investigator reviews the links and results for accuracy.

A-Q2A: Has the university adopted or implemented a policy statement regarding open access publications?

Open access publication enables equitable sharing of scholarly knowledge unconstrained by geographical and financial barriers. If everyone has access to the latest biomedical findings, there is increased opportunity for individuals to innovate.

> CATEGORICAL (Multiple Choice)
> Weighting Multiplier: 1.0

Possible choices (raw score):
- No policy implemented or adopted (0 points)
- A statement encouraging open access from the university is publicly available but there is not clear policy concerning its use (1 point)
- There is a clear statement about university-wide support for open access publications (2 points)
- A school or institute within the university always implements open access publication policies (3 points)
- There is a university-wide policy on open access publications that is actively being implemented (4 points)
- There is a clear statement or university-wide policy and a school or institute always implements open access publishing (5 points)

Data Collection: CATEGORY 1 and 2. University administrators have an opportunity to select an answer and provide a URL link as evidence for an open access policy being implemented at their university. As well, multiple internal investigators compete a Google search using the keywords: "[University Name] + Open Access + Publications", "[University Name] + Open Access + Policy", "[University Name] + Open Access + Statement". The first 15 hits are examined for any evidence of an open access statement or policy being implemented at the university.

Quality Assurance Strategy: Multiple internal investigators independently cross reference externally collected data with internal data to determine whether or not the university does implement a policy of some kind or have a statement available. As well, internally collected data is checked by a third internal investigator to ensure that all inclusion criteria are met.

AQ2B: Does the university provide support for open access publishing?

CATEGORICAL (Multiple Choice)
Weighting Multiplier: 0.5

Possible choices (raw score):
- No, there is no university support provided (0 points)
- Yes, there are informal mechanisms to support and encourage open access publishing (1 point)
- Yes, there are grants/awards/scholarships for open access publishing through the university (2 points)
- Yes, there is a university-wide fund to support open-access publications (3 points)
- Yes, there are two of the above offered (4 points)
- Yes, all of the above are offered (5 points)

Data Collection: CATEGORY 1 and 2. University administrators have the opportunity to select an answer and provide a URL link as evidence for any support given to open access publishing that their institution provides. As well, multiple internal investigators complete a Google search using the keywords: "[University Name] + Open Access + Grant", "[University Name] + Open Access + Fund", "[University Name] + Open Access + Award", "[University Name] + Open Access + Scholarship". The first 15 hits are examined for any evidence of support for open access publishing being provided by the university.

Quality Assurance Strategy: Multiple internal investigators independently cross reference externally collected data with internal data to determine whether or not the university does provide support of some kind for open access publishing. As well, internally collected data is checked by a third internal investigator to ensure that all inclusion criteria are met.

A-Q2C: What percentage of the university's total medical sciences publication output is published in open access publications?

CATEGORICAL (Percent Range)
Weighting Multiplier: 0.5

Possible choices (raw score):
- 0% (0 points)
- 1-10% (1 point)
- 11-30% (2 points)
- 31-50% (3 points)
- 51-70% (4 points)
- 71% or above (5 points)

Data Collection: CATEGORY 1. To determine the total medical sciences publications output (denominator) for a given university in the time period January 2015 August 2016, a search of the PubMed database (http://www.ncbi.nlm.nih.gov/pubmed/) is performed using search terms encompassing all the institutes conducting biomedical research affiliated with the university (including hospitals and independent research institutes, as well as the main campus).

To estimate the total medical sciences output published with open access provisions (numerator) from the period between January 2015 and August 2016, a search of PubMedCentral (a free full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine; http://www.ncbi.nlm.nih.gov/pmc/) is performed as above.

The number of open access publications for each university is then divided by the number of total publications to determine a percentage for each institution.

Quality Assurance Strategy: A comprehensive list of all institutions conducting biomedical research affiliated with a university is generated for all universities surveyed. For each institution, two evaluators conduct independent reviews of public data using the same standardized search terms to verify results.

A-Q3. (Non-Exclusive Licensing)

> Part A: In the past year, what percentage of the university's total research licenses were non-exclusive?

> > CATEGORICAL (Percent Range)
> > Weighting Multiplier: 1.0

> Possible choices (raw score):
> - No response and no data online (0 points)
> - 0% (0 points)
> - 1-20% (1 point)
> - 21-40% (2 points)
> - 41-60% (3 points)
> - 61-89% (4 points)
> - 90% or above (5 points)

Data Collection: CATEGORY 1 and 2. Continuous data on the number of non-exclusive licenses as a percent of total licenses is obtained from Statistics Access for Tech Transfer (STATT) database maintained by the Association of University Technology Managers (AUTM). An online survey instrument is also emailed to TTOs at institutions of interest. For non-responding institutions, at least two follow-up requests are sent via e-mail. If a university submits their survey specifying the percentage of non-exclusive research licenses it is then averaged with the value provided in STATT for FY2016.

Quality Assurance Strategy: This data is collected from AUTM, the preeminent organization of university technology managers, using an annual survey of their members.

Part B: In the past year, what percentage of the university's health technology licenses were non-exclusive?

CATEGORICAL (Percent Range)
Weighting Multiplier: 1.0

Possible choices (raw score):
- No response (0 points)
- 0-10% or no data (1 point)
- 11-30% (2 points)
- 31-50% (3 points)
- 51-70% (4 points)
- 71% or above (5 points)

Data Collection: CATEGORY 2: An online survey instrument is emailed to TTOs at institutions of interest. For non-responding institutions, at least two follow-up requests are sent via e-mail.

Quality Assurance Strategy: As licensing data are typically not publicly disclosed, it is necessary to rely on the good faith reporting of TTOs. However, this question evaluates percentages rather than absolute numbers to compensate for variations in institutional size and licensing volume. Percentage values are further categorized into decile ranges, so that all institutions within a given range receive an equal score.

A-Q4: In the past year, for what percentage of all health technologies did the university seek patents in low- and middle-income countries where they may restrict access?

Part A: for Upper-Middle-Income Countries (including Brazil, Russia, India, China, and South Africa) (as defined by the World Bank)

CATEGORICAL (Percent Range)
Weighting Multiplier: 1.0

Possible choices (raw score):
- No response (0 points)
- 81-100% (1 point)
- 61-80% (2 points)
- 41-60% (3 points)
- 21-40% (4 points)
- 0-20% or no data (5 points)

Part B: Low- and Lower-Middle Income Countries (as defined by the World Bank)

> CATEGORICAL (Percent Range)
> Weighting Multiplier: 1.0

Possible choices (raw score):
- No response (0 points)
- 81-100% (1 point)
- 61-80% (2 points)
- 41-60% (3 points)
- 21-40% (4 points)
- 0-20% or no data (5 points)

Data Collection: CATEGORY 2. An online survey instrument is emailed to TTOs at institutions of interest. For non-responding institutions, at least two follow-up requests are sent via e-mail.

Quality Assurance Strategy: As licensing data are typically not publicly disclosed, it is necessary to rely on the good faith reporting of TTOs. However, this question evaluates percentages rather than absolute numbers to compensate for variations in institutional size and licensing volume. Percentage values are further categorized into decile ranges, so that all institutions within a given range receive an equal score.

A-Q5: Access Provisions in Exclusive Licenses

> Part A: In the past year, what percentage of the university's exclusive licenses of health technologies included provisions to promote access to those technologies in low- and middle-income countries?

> > CATEGORICAL (Percent Range)
> > Weighting Multiplier: 1.0

Possible choices (raw score):
- No response (0 points)
- 0-20% or no data (1 point)
- 21-40% (2 points)
- 41-60% (3 points)
- 61-80% (4 points)
- 81-100% (5 points)

> Part B: What percentage of those access provisions included the biggest low- and middle-income economies (Brazil, Russia, India, China or South Africa) in their scope?

> > CATEGORICAL (Percent Range)
> > Weighting Multiplier: 1.0

Possible choices (raw score):
- No response (0 points)
- 0-20% or no data (1 point)
- 21-40% (2 points)
- 41-60% (3 points)
- 61-80% (4 points)
- 81-100% (5 points)

Part C: In the past year, what percentage of the university's exclusive licenses of health technologies included provisions to promote access to those technologies in high-income countries?

CATEGORICAL (Percent Range)
Weighting Multiplier: 0.5

Possible choices (raw score):
- No response (0 points)
- 0-20% or no data (1 point)
- 21-40% (2 points)
- 41-60% (3 points)
- 61-80% (4 points)
- 81-100% (5 points)

Data Collection: CATEGORY 2. An online survey instrument is emailed to TTOs at institutions of interest. For non-responding institutions, at least two follow-up requests are sent via e-mail.

Quality Assurance Strategy: As licensing data are typically not publicly disclosed, it is necessary to rely on the good-faith reporting of TTOs. However, this question evaluates percentages rather than absolute numbers to compensate for variations in institutional size and licensing volume. Percentage values are further categorized into decile ranges, so that all institutions within a given range receive an equal score.

A-Q6: Has the university shared its best practices for promoting access to medicines through licensing?

- Contributed sample clauses to the AUTM Global Health Toolkit
- Published an article on access licensing practices
- Formally presented on access licensing practices at an academic or professional event, or at another university
- Informally shared or discussed access licensing practices with administrators at other universities
- Other

CATEGORICAL (Numerical)
Weighting Multiplier: 0.5

Possible choices (raw score):
- No response (0 points)
- Responded but no sharing options provided (1 point)
- 1 sharing option checked (2 points)
- 2 sharing options checked (3 points)
- 3 sharing options checked (4 points)
- 4+ sharing options checked (5 points)

Data Collection: CATEGORY 2. An online survey instrument is emailed to TTOs at institutions of interest. For non-responding institutions, at least two follow-up requests are sent via e-mail.

Quality Assurance Strategy: As this data is typically not publicly disclosed, it is necessary to rely on the good faith reporting of TTOs.

A-Q7: Has the university publicly acknowledged the existence/effectiveness of alternative models of research and development as being important to ensuring access to medical innovation?

- Publicly written statement of intent or explanation on official university or TTO website
- Published an article on alternative research and development
- Formally presented alternative R&D models at an academic or professional event, or at another university
- Informally shared or discussed alternative approaches to R&D with administrators at other universities
- Other

  CATEGORICAL (Number of options checked)
  Weighting Multiplier: 1.0

Possible choices (raw score):
- No response and no information available publicly (0 points)
- Responded but no support for alternative R&D (1 point)
- 1 option checked (2 points)
- 2 options checked (3 points)
- 3 options checked (4 points)
- 4+ options checked (5 points)

Data Collection: CATEGORY 1 and 2. An online survey instrument is emailed to TTOs at institutions of interest. For non-responding institutions, at least two follow-up requests are sent via e-mail.

Quality Assurance Strategy: As this data is not all typically publicly disclosed, it is necessary to partially rely on the good faith reporting of TTOs. Multiple internal investigators simultaneously conduct a Google KeyWord search to verify answers where possible.

Quality Maximization Strategy: If URLs are provided in the administrator response, these links are investigated to ensure that they correlate with internal data collection.

A-Q8: Between January 2006 and December 2014, what percentage of completed clinical trials registered on ClinicalTrials.gov conducted by the university had their data shared as summary results on ClinicalTrials.gov or pubmed?

> CATEGORICAL (Percent Range)
> Weighting Multiplier: 2.0

Possible choices (raw score):
- No response (0 points)
- 0% (1 point)
- 1-30% (2 points)
- 31-60% (3 points)
- 61-90% (4 points)
- 91-100% (5 points)

Data Collection: CATEGORY 1 and 2. Data is collected directly from the AllTrials database TrialsTracker, which retrieves all clinical trial data from ClinicalTrials.gov (with their permission). The eligible clinical trials used to calculate the percentage consists of all trials (including interventional trials) between January 2006 and December 2014, except for Phase 0/1 trials and those that have made a formal request to delay results.

Quality Maximization Strategy: Data is collected and published by ClinicalTrials.gov, which is in turn compiled by AllTrials.

SECTION 3: EMPOWERMENT

E-Q1: Does the university offer its students access to global health engagement and/or education?

> PART A: As indicated by the existence of a university center/institute, department, and/or non-degree program in global health.

> > CATEGORICAL
> > Weighting Multiplier: 2.0

Possible choices (raw score):
- No center/institute/non-degree program/initiative (0 points)
- A global health non-degree program or initiative (1 point)
- A global health department or office (2 points)
- A global health center/institute (3 points)
- A global health center/institute & at least one global health initiative or non-degree program (4 points)
- A global health center & at least one global health department or office (5 points)

PART B: As indicated by the existence of a university graduate degree, major/concentration, focus/specialization, certificate, or undergraduate degree in global health.

CATEGORICAL
Weighting Multiplier: 2.0

Possible choices (raw score):
- No global health degree, academic track or certificate (0 points)
- A global health undergraduate major (1 point)
- At least one global health graduate certificate (2 points)
- At least one global health graduate focus/specialization (3 points)
  At least one global health graduate major/concentration (4 points)
- At least one global health graduate degree (5 points)

Data Collection: CATEGORY 1. Multiple investigators, working independently and in parallel, perform a review of university global health centers/institutes, departments, and programs using standardized web search protocol to identify qualifying institutions and determine whether or not they should earn a point for accessibility.

Quality Maximization Strategy: Investigators review the data from the Consortium of Universities for Global Health (CUGH), a >100-member organization of research universities, specifically their Global Health Programs Database (see link to full list in the Annex). Additionally, multiple investigators perform a standardized web search to identify relevant global health engagement and education opportunities available at each university.

E-Q2: Does the university offer graduate courses that address the policy and legal context of biomedical R&D, and more specifically the impact of intellectual property policies, on research priorities and global access to medical innovations?

CATEGORICAL
Weighting Multiplier: 1.0

Possible choices (raw score):
- No courses offered (0 points)
- 1-5 courses (1 points)

- More than 5 courses (2 points)
- 1-5 courses with at least one course focused specifically on IP and access to medicines (3 points)
- 6-10 courses with at least one course focused specifically on IP and access to medicines (4 points)
- More than 10 courses with at least one course focused specifically on IP and access to medicines (5 points)

Data Collection: CATEGORY 1 AND 2. Initial data is collected through a survey questionnaire that is emailed to appropriate deans or other administrators within the schools of medicine, public health, and/or law. Following the initial email, there are two additional e-mail attempts to follow up with universities that do not respond. After this initial round of data collection, 2 to 3 investigators, working independently and in parallel, perform a web search of university course catalogues using a standardized online survey instrument, in order to verify the self-reported university responses, as well as to identify relevant course offerings at non-responding institutions. These university catalogs may also be accessed privately through UAEM member students who are chapter leaders at their respective universities.

Quality Maximization Strategy: Initial data is collected directly from universities using a standardized questionnaire. Additionally, this data is both verified and supplemented by a review of the data from a standardized web search performed by multiple investigators.

E-Q3: Does the university offer graduate courses that address the prevalence of and/or lack of research on neglected diseases, including neglected aspects of HIV, TB, and/or malaria?

CATEGORICAL
Weighting Multiplier: 1.0

Possible choices (raw score):
- No courses offered (0 points)
- 1-5 courses (1 points)
- More than 5 courses (2 points)
- 1-5 courses with at least one course focused specifically on recognized NDs (3 points)
- 5-10 courses with at least one course focused specifically on recognized NDs (4 points)
- More than 10 courses with at least one course focused specifically on recognized NDs (5 points)

Data Collection: CATEGORY 1 AND 2. Initial data is collected through a survey questionnaire that is emailed to appropriate deans or other administrators within the schools of medicine, public health, and/or law. Each contact receives at least two follow-up emails. After this initial round of data collection, multiple investigators, working independently and in parallel, perform a web search of university course catalogues using a standardized online survey instrument, in order to verify the self-reported university responses, as well as to identify relevant course offerings at non-responding institutions.

Quality Maximization Strategy: Initial data is collected directly from universities using a standardized questionnaire. Additionally, this data is both verified and supplemented by a review of the data from a standardized web search performed by multiple investigators.

E-Q4: Has the university hosted a major conference, symposium or campus-wide event in the last 12 months on:

    A. the policy and legal context of biomedical R&D, specifically the impact of intellectual property rights on research priorities and global access to medical innovations?

    B. neglected diseases, including neglected aspects of HIV, TB, and/or malaria, and health needs of low- and middle-income countries?

    C. Drug pricing in Canada and/or in other high-income countries?

    CATEGORICAL
    Weighting Multiplier: 1.0

Possible choices (raw score):
- No - no events (0 points)
- Yes - has hosted one event on either A or B or C (1 points)
- Yes - has hosted two events, both on A or both on B or both on C (2 points)
- Yes - has hosted two events, one on A or both and one on B or both and one on C or both... (3 points)
- Yes - has hosted more than two events, all on A or all on B or all on C (4 points)
- Yes - has hosted more than two events, with events on A, B and C (5 points)

Data Collection: CATEGORY 1. Multiple investigators, working independently and in parallel, perform a review of university-hosted events using a standardized web search protocol to identify events related to topic A, B and/or C.

Quality Maximization Strategy: To ensure comparability of included events by multiple investigators, investigators are informed to include only those events that meet the following criteria:

1. Must be partially or fully funded by the university/school/faculty or hosted on a facility of the school/faculty
2. Must discuss neglected diseases, access to medicines, drug pricing, and/or IP
3. Must discuss perspectives from low- and/or middle-income countries or resource-limited populations
4. Must have more than 30 people in attendance
5. Must state whether pharmaceutical industry was involved either as a partner or funder

E-Q5: Does the university offer any of its students accessible opportunities to study, work, or complete research abroad in global health?

    CATEGORICAL
    Weighting Multiplier: 0.5

Possible choices (raw score):
- 0.5 points for having each of the following global health funding opportunities: grant, scholarship, award, and/or fellowship (maximum of 2 points given)
- 0.5 points for having each of the following global health study abroad opportunities: scholarship and/or fellowship (maximum of 1 point given)
- 1 point for offering a global health practicum and/or partnership abroad
- 1 point for offering engagement in a global health clinic abroad

Data Collection: CATEGORY 1. Multiple investigators, working independently and in parallel, perform a review of university global health opportunities abroad using a standardized web search protocol to identify opportunities.

Quality Maximization Strategy: Data is collected using a standardized web search performed by multiple investigators to ensure consistency of results.

EQ6: Is the university formally involved in a global health partnership with one or more universities based in low- and middle-income countries?

WRITTEN-RESPONSE (Not Graded)

Data Collection: CATEGORY 1 and 2. Multiple research administrators at contacted institutions are given the option to respond in a textbox. These responses are not included in the official grading of the university, but are displayed on the official Report Card site to showcase how universities are working to promote global and collaborative approaches to health. As well, our own investigators conduct a Google search using keywords: Institution Name + "global health partnership" and other key search terms. The top 15 hits are analyzed for any formal global health partnership(s) between the university and a university in the Global South and they are listed in the response form.

Quality Maximization Strategy: Since these responses cannot be normalized to account for the institution's size, these responses are optional and not for official grading.

EQ7: Does the university offer any of its students an opportunity to learn more about alternative models for research and development through courses, workshops, or other opportunities?

CATEGORICAL
Weighting Multiplier: 0.5

Possible choices (raw score):
- 0.5 points for having each of the following: workshop, global health symposium, conference related to alternative models for biomedical research and innovation (maximum of 2 points given)
- 1 point for course offering on alternative models for biomedical research and innovation

Data Collection: CATEGORY 1. Multiple investigators, working independently and in parallel, perform a review of university using a standardized web search protocol to identify opportunities provided to learn about alternative R&D.

Quality Maximization Strategy: Data is collected using a standardized web search performed by multiple investigators to ensure consistency of results.

SECTION 4: TRANSPARENCY

T-Q1. How responsive was the university's Technology Transfer Office (TTO) to emails from UAEM regarding the Innovation and Access sections surveys?

      CATEGORICAL
      Weighting Multiplier: 1.5

Possible choices (raw score):
- No response received throughout entire Data Collection period (0 Points)
- Received submission, but little to no sharing options provided and little to no links provided in the submitted form (1 Point)
- Received submission, sharing options provided and a majority of links and information are provided in detail when asked (2 Points)

Data Collection: CATEGORY 1. Internal investigators go through all response forms after the submission deadline, and internal communication is evaluated for any e-mail/communication with the university's TTO.

Quality Maximization Strategy: Data is collected using a single database of response forms analyzed by multiple investigators to ensure consistency of results.

T-Q2A. For questions relying on public data (CATEGORY 1) in the Access section, was sufficient information available online?

      CATEGORICAL
      Weighting Multiplier: 0.5

Possible choices (raw score):
- No data found for any questions (0 Points)
- Data found for less than half of total questions (1 Point)
- Data found for half of total questions (2 Points)
- Data found for more than half of total questions (3 Points)
- Data found for all of total questions (4 Points)

T-Q2B. For questions relying on public data (CATEGORY 1) in the Innovation section, was sufficient information available online?

    CATEGORICAL
    Weighting Multiplier: 0.5

Possible choices (raw score):
- No data found for any questions (0 Points)
- Data found for less than half of total questions (1 Point)
- Data found for half of total questions (2 Points)
- Data found for more than half of total questions (3 Points)
- Data found for all of total questions (4 Points)

T-Q2C. For questions relying on public data (CATEGORY 1) in the Empowerment section, was sufficient information available online?

    CATEGORICAL
    Weighting Multiplier: 0.5

Possible choices (raw score):
- No data found for any questions (0 Points)
- Data found for less than half of total questions (1 Point)
- Data found for half of total questions (2 Points)
- Data found for more than half of total questions (3 Points)
- Data found for all of total questions (4 Points)

Data Collection: CATEGORY 1. Internal investigators re-examine data collected and response forms.

Quality Maximization Strategy: Cross-referencing with other internal investigators occurs with those who have evaluated the same section for the same university independently.

T-Q3. How much discrepancy exists between university responses in the submitted forms and what is being internally collected using publicly available data for Category 1 and 2 questions?

    CATEGORICAL
    Weighting Multiplier: 1.0

Possible choices (raw score):
- More than 50% of questions contain discrepancies (0 Points)
- More than 30% but less than 50% of questions contain discrepancies (1 Point)
- More than 10% but less than 30% of questions contain discrepancies (2 Points)
- Less than 10% of questions contain discrepancies (3 Points)

Data Collection: CATEGORY 1. Internal investigators go through all response forms after the submission deadline, and internal communication is evaluated for any discrepancies in all Category 1 and 2 labelled questions.

Quality Maximization Strategy: Data is collected using a single database of response forms analyzed by multiple investigators to ensure consistency of results.

T-Q4. Does the university have clear guidelines for conflict of interest policies delineated for partnerships with industry that have commercial interest?

WRITTEN RESPONSE (Not Graded)

Data Collection: CATEGORY 1 and 2. Multiple research administrators at contacted institutions are given the option to respond in a textbox. These responses are not included in the official grading of the university, but are displayed on the official Report Card site. Additionally, internal investigators conduct a Google keyword search and analyze the first 15 hits for any relevant information to verify answers where possible. **KEYWORD SEARCH:** Institution Name + "conflict of interest policies" + "pharma", Institution Name + "COI guidelines", Institution Name + "guidelines" + "commercial interest", Institution Name + "conflict of interest" + "industry".

Quality Maximization Strategy: Since these responses cannot be normalized to account for the institution's size, these responses are optional and not for official grading.

ANNEX

Consortium of Universities for Global Health Members
Of the U15, only U of Manitoba, McGill, McMaster, U of Toronto, and U of Alberta are members of the CUGH.

Disease Search Query for NTDs, AMR, HIV, Malaria & TB
(("Buruli ulcer" OR "mycobacterium ulcerans" OR "buruli" OR "M ulcerans" OR "M. ulcerans") OR ("Chagas OR "Chagas Disease" OR "Trypanosoma" OR ("Trypanosoma cruzi") OR ("T cruzi") OR ("T. cruzi") or "Chagas") OR ("Schistosomiasis" OR "cercariae" OR "Schistosoma guineensis" OR "S guineensis" OR "S. guineensis" OR "Schistosoma intercalatum" OR "S intercalatum" OR "S. intercalatum" OR "Schistosoma mansoni" OR "S mansoni" OR "S. mansoni" OR "Schistosoma japonicum" OR "S japonicum" OR "S. japonicum" OR "Schistosoma mekongi" OR "S mekongi" OR "S. mekongi") OR ("Leishmaniasis" OR "Leishmania" OR "Phlebotominae" OR "Leishmania major" OR "L major" OR "L. major" OR "Leishmania infantum" OR "L infantum" OR "L. infantum" OR "Leishmania braziliensis" OR "L braziliensis" OR "L. braziliensis" OR "kala-azar" OR "kala azar") OR("Yaws" OR "Treponema" OR "Endemic Treponematoses" OR "Treponematoses" OR "framboesia" OR "pian" OR "Treponema pallidum" OR "T pallidum" OR "T. pallidum" OR "Pertenue" OR "endemic syphilis" OR "bejel" OR "Endemicum" OR "Pinta" OR "Treponema carateum" OR T carateum" OR "T. carateum") OR ("Trachoma" OR "chlamydia trachomatis" OR "c trachomatis" OR "C. trachomatis" OR "trachomatis" OR (chlamydia AND blindness) OR (chlamydia AND keratoconjunctivitis)) OR ("African trypanosomiasis" OR "Human African Trypanosomiasis" OR "Sleeping Sickness" OR "African Sleeping Sickness" OR "African lethargy" OR "Congo trypanosomiasis" OR "trypanosoma" OR "trypanosoma brucei" OR "trypanosoma brucei rhodesiense" OR "trypanosoma brucei gambiense" OR "t b rhodesiense" or "t b gambiense" OR "t.b. rhodesiense" OR "t.b. gambiense" OR "T brucei" OR "T. brucei") OR ("Dengue" OR "Severe Dengue" OR "Dengue Fever" OR "Dengue virus" OR "DENV" OR "DEN-1" OR "DEN-2" OR "DEN-3" OR "DEN-4" OR "antibody-dependent enhancement") OR ("foodborne trematodiases" OR "trematodiases" OR "chlonorchiasis" OR "chinese liver fluke disease" OR "chinese liver fluke" OR "chlonorchis sinensis" OR "C sinensis" OR "C. sinensis" OR "fascioliasis" OR "Fasciola hepatica" OR "F hepatica" OR "F. hepatica" OR "Fasciola gigantica" OR "F gigantica" OR "F. gigantica" OR "Fasciola" OR "Opisthorchiasis" OR "Opisthorchis viverrini" OR "O viverrini" OR "O. viverrini" OR "Opisthorchis felineus" OR "O felineus" OR "O. felineus" OR "Paragonimiasis" OR "liver fluke" OR "lung fluke" OR "liver flukes" OR "lung flukes") OR ("taeniasis" OR "cysticercosis" OR "Taenia solium" OR "T solium" OR "T. solium" OR "Taenia saginata" OR "T. saginata" OR "Taenia asiatica" OR "T Asiatica" OR "T. asiatica" OR "beef tapeworm" OR "Asian tapeworm" OR "pork tapeworm" OR "tapeworm") OR ("soil transmitted helminthiases" OR "soil-transmitted helminths" OR "soil transmitted helminths" OR "ascaris lumbricoides" OR "ascaris" OR "ascariasis" OR "a lumbricoides" OR "a. lumbricoides" OR "Trichuris trichiura" OR "T trichiura" OR "T. trichiura" OR "Necator americanus" OR "N americanus" OR "N. americanus" OR "Ancylostoma duodenale" OR "A duodenale" OR "A. duodenale" OR "Helminthiases") OR ("onchocerciasis" OR "onchocerca" OR "onchocerca volvulus" OR "o volvulus" OR "o. volvulus" OR "river blindness" OR "robles disease" OR "robles" OR "wolbachia pipientis" OR "w pipientis" OR "w. pipientis") OR ("echinococcosis" OR "cystic echinococcosis" OR "polycystic echinococcosis" OR "hyatid disease" OR "echinococcus granulosus" OR "E granulosus" OR "echinococcus multilocularis" OR "E multilocularis" OR "E.

multilocularis" OR "echinococcus" OR "echinococcal disease" OR "alveolar echinococcosis) OR ("lymphatic filariasis" OR "elephantiasis" OR "wuchereria bancrofti" OR "w bancrofti" OR "w. bancrofti" OR "brugia malayi" OR "b malayi" OR "b. malayi" OR "brugia timori" OR "br timori" OR "b. timori") OR ("dracunculiasis" OR "guinea worm disease" OR "guinea-worm disease" OR "dracunculus medinensis" OR "d medinensis" OR "d. medinensis" OR "dracunculus") OR ("leprosy" OR "Hansen's Diseaes" OR "Hansens Disease" OR "mycobacterium leprae" OR "m leprae" OR "m. leprae" OR "mycobacterium lepromatosis" OR "m lepromatosis" OR "m. lepromatosis" OR "lepra") OR (("rotavirus" AND "vaccine") OR ("HIV" AND "pediatric") OR ("HIV" AND "fixed dose combination") OR ("HIV" AND "fixed-dose combination") OR ("HIV" AND "fdc") OR ("HIV" AND "microbicide") OR ("HIV" AND "diagnostic") OR ("HIV" and "vaccine")) OR ("tuberculosis" OR "TB" OR "T.B." OR "mycobacterium tuberculosis" OR "M tuberculosis" OR "M. tuberculosis" OR "MTB" OR "Multi-drug resistant Tuberculosis" OR "MDRTB" OR "drug resistant Tuberculosis") OR ("malaria" OR "plasmodium vivax") OR ("Antimicrobial Resistance" OR "AMR" OR "Antibiotic Resistance"))