

# Brian O'Donnell

<https://www.linkedin.com/in/brianodonnellwm>

## SUMMARY

Public health informatician passionate about making technology that works for the common good. Fifteen years experience supporting a variety of “ICT4D” projects, from open data for development finance to national-scale DHIS2 systems, with direct implementation and research experience in fourteen countries. Dependably delivers tools that push boundaries of what digital health *can* do; persistently listens for what digital health *should* do.

## EXPERIENCE

### University of Oslo (UiO)

*Technical DHIS2 Implementer (100% position)*  
*Senior Adviser (20% position)*

Oslo, Norway

July 2021 - Present\*  
Sep 19 - Jul 21

*Developing open-source DHIS2 metadata toolkits and implementation guidance based on standard health indicator frameworks from WHO, CDC, and UNICEF, and providing technical support to users localizing these toolkits within their national health information systems. \* Includes 20% position while on study leave, Oct 23-Oct 24*

- **Requirements gathering and prototyping:** I have developed DHIS2 implementation toolkits for a variety of health programs, such as hypertension control, acute febrile illness, infant immunization, TB program monitoring, HIV case surveillance, and zoonotic surveillance, with inputs from WHO and country partners.
- **Software design:** I wrote and published the “System Design Guide” for DHIS2 Tracker (individual-level data collection and analytics module, adapted for use in 89 countries) on the official DHIS2 Docs site. In-country travel to collect design inputs for new DHIS2 core features, such as analytics for non-Gregorian calendars (Nepal, 2022), and row-based data entry to digitize paper registers in bulk (Ghana, 2023).
- **Partnerships and ecosystem development for NCDs:** I head the global DHIS2 implementation team’s portfolio on Noncommunicable Diseases (NCDs), including: acquiring and leading a \$1 million partnership with World Diabetes Foundation to develop DHIS2 tools for NCD monitoring; starting a novel partnership with Resolve to Save Lives to design more user-friendly hypertension control programs with DHIS2 Tracker; coordinating promotional activities such a three-part CDC FETP webinar series (420 participants) on routine health information and NCDs. Presented at 2024 Global Goods Innovators Summit on behalf of DHIS2.
- **Machine learning for climate & health:** I support a major Wellcome Trust project at UiO by documenting country use cases of DHIS2’s CHAP data pipeline for AI-driven forecasts of climate-sensitive disease.
- **Documenting integrated HIS architectures:** I create model software to demo how DHIS2 fits within a standards-based health information architecture, such as transforming WHO’s Digital Adaptation Kit into a DHIS2 Tracker program for antenatal care; developing FHIR profiles based on the DHIS2 HIV Case Surveillance tracker, and diagramming integration of surveillance data between DHIS2 and SORMAS.
- **Analytic visualizations for public health decisions:** I develop dashboards, dummy data, and indicators to demonstrate analytics from DHIS2 toolkits, in collaboration with WHO, CDC, and other subject experts.
- **R&D:** I developed a prototype R Shiny app to render case “relationship” data from Covid-19 Case Surveillance DHIS2 Tracker programs into epidemiological network models, and wrote R scripts to test DHIS2’s analytics engine performance during Covid-19 immunization campaigns.

### Folkehelseinstituttet (Norwegian Institute of Public Health)

*DHIS2 Implementation Adviser (100% position)*  
*Senior DHIS2 Adviser (20% position)*

Oslo, Norway

October 2017 - July 2021  
July 2021 - December 2022

*Designed, configured, tested, and monitored customized DHIS2 systems for capturing patient-level records at point of care, with a special emphasis on performance feedback tools to support high quality and timely care during pregnancy.*

- **Partnerships and capacity strengthening:** Daily collaboration with the Palestinian Institute of Public Health and International Centre for Diarrheal Disease Research, Bangladesh on DHIS2 systems ranging from a national scale point-of-care e-Registry in Palestine (~220,000 pregnancies in West Bank and Gaza) to a modified Android-based registry linking community and facility MCH staff in Bangladesh (~8,000 pregnancies recorded)
- **Software design:** On strict research deadlines, co-designed with researchers and developers a point-of-care maternal health e-Registry in DHIS2 Tracker with add-on digital health innovations, such as appointment reminder SMS, clinical decision support, performance dashboards, and biometric identification; wrote user requirements, field-tested, and deployed custom DHIS2 Android app for Bangladesh use case; on-site field design and research meetings for a cumulative 12 weeks in Bangladesh and 4 weeks in Palestine
- **Feature development:** Built and implemented DHIS2 Quality Improvement Dashboards and Targeted Client Communication with scheduled SMS, including novel DHIS2 program indicator types and external SMS scripts; wrote and imported new program rules to support clinical workflows; developed a functional DHIS2 Tracker Android app to execute the WHO HEARTS CVD Risk Algorithm with patient inputs.

- **Process improvement:** Developed standard operating procedures for monitoring Tracker activity; training materials to develop security capacity for system admins; facilitated Java8 and DHIS2 system upgrade in Palestine
- **Custom monitoring tools:** Wrote RMarkdown script to report on appointment reminder SMS through DHIS2 API; SQL Views for DHIS2 user activity reports; R Shiny dashboard for monitoring of SMS and dashboard interventions
- **Digital Public Goods:** Co-wrote DHIS2 Tracker Implementation Guide with UiO; presented e-Registry design principles at first-ever DHIS2 Tracker Implementation Academy in Ghana (March 2020); supported RMNCH aggregate package and Immunization tracker package for DHIS2's Digital Health Data Toolkit with WHO

## Akros

*Informatics Project Manager*  
*Linkages Informatics Program Manager*  
*Health Informatics Officer & Global Health Corps Fellow*

## Lusaka, Zambia

November 2016 - October 2017  
 July 2016 - November 2016  
 June 2015 - July 2016

*Co-designed, built, and managed low-cost and sustainable health information systems in DHIS2, including Android and J2ME based mobile data collection initiatives in sanitation, HIV prevention, and education*

### **DHIS2 implementation**

- End-to-End client relationship management, from user stories and system requirement specifications to end user training, for the NGO Pact's DREAMS database, which collected data from over 500,000 adolescent girls and young women participating in the PEPFAR-supported DREAMS HIV prevention programs in Zambia
- Co-managed technical support and training of DHIS2 instance for community-level sanitation in Zambia, a national database covering 34,000 villages and 2,000 users, from setting up J2ME-based DHIS2 apps on Nokia phones to creating dashboards with District Health Officers
- Developed DHIS2 instance supporting an Integrated Community Case Management (iCCM) system for a ZCAHRD led randomized controlled trial on community health worker reports of patient referrals, stock-outs, and supervision
- Developed DHIS2 indicators for Zambia's first Education Management Information System (EMIS), a DHIS2 mobile-to-web application sponsored by UNICEF and DfID, piloted in Namwala District
- Developed DHIS2 mobile-to-web tool and training guides for community reporting on rural land tenure, delivered to a central repository that maps land ownership and provides ownership certificates, together with TetraTech, the Chipata District Land Alliance, and USAID
- Managed pilot DHIS2 Android tool to help LINKAGES community groups in Port of Spain, Trinidad and Paramaribo, Suriname to efficiently capture programmatic HIV indicators and monitor HIV-vulnerable individuals through HIV counseling, testing, and treatment, and facilitated partnerships with PEPFAR, USAID, FHI360, Family Planning Association of Trinidad & Tobago, Ministry of Health-Suriname, and Trinidad & Tobago's HIV coordination unit

### **Technical assistance and capacity strengthening**

- Taught Akros DHIS2 trainings in Washington DC, Botswana, Trinidad & Tobago, South Africa, Zambia, Zimbabwe and Kenya for various INGOs and Ministries of Health.
- Data scoping interviews and user story writing for the DREAMS Innovation Challenge to provide recommendations for the Zambia National AIDS Council's new NAC-MIS data reporting tool, coordinated with JSI and AidData
- Directed internal Research & Development Team meetings and wrote Akros R&D Strategy document, and provided technical inputs for successful grant applications to Feed the Future (Ethiopia nutrition tracker) and E8 (Southern Africa regional malaria elimination database)
- Consolidated global best practices for community health information systems (CHIS) through Akros participation in the Health Data Collaborative, including writing chapters on training and supportive supervision for CHIS end users.

## Innovations for Peace and Development

*Task Team Leader*

- Led student team of six to create experimental designs for testing development interventions
- Traveled to Kathmandu, Nepal to research donor use of aid management information systems
- Geocoded project-level foreign aid data from over 20 donors in Uganda through USAID-funded research

## Austin, TX, USA

August 2013 – June 2015

## The World Bank Group

*Short Term Consultant, Independent Evaluation Group*

- Contributed data analysis to World Development Report 2016 on information technologies and project frameworks

## Austin, TX, USA

February 2015

## United States Agency for International Development

*Intern, Africa Bureau*

- Created ArcGIS Online web application with interactive visualizations of USAID programs in Ethiopia
- Compiled database of Ethiopian diaspora organizations for targeted outreach

## Washington, DC, USA

June 2014 - August 2014

## AidData

*Project Manager*

*Post-Baccalaureate Fellow*

- Designed and executed innovative methodology to collect development finance data through open sources and

## Williamsburg, VA, USA

August 2012 - August 2013

August 2011 - August 2012

- media reports; enabled research on Chinese aid in Africa which was profiled in *The Guardian* and *The Economist*
- Wrote and implemented successful \$250,000 CIDA research grant for tracking nutrition sensitivity of foreign aid
- Orchestrated data-sharing alliance with UNEP to track global biodiversity conservation finance
- Hired, trained, managed, and evaluated 35 AidData Interns, 10 Research Assistants, and five data specialists
- Crafted management structure in successful \$25 million USAID grant for AidData Center for Development Policy

### **Institute for the Theory and Practice of International Relations Williamsburg, VA, USA**

*Research Assistant*

June 2010 - August 2011

- Categorized foreign aid project data from over 80 bilateral and multilateral donors using 19,000-word codebook

### **South African Department of Social Development**

*Intern*

**Cape Town, South Africa**

Spring 2010

- Implemented briefing on basic tax subsidy reports to preschool administrators

## **EDUCATION**

### **Charité – Universitätsmedizin Berlin**

*Master of Science in Epidemiology*

October 2023 - October 2024

- Relevant courses: Infectious Disease Epidemiology; Biostatistics; Medical Informatics; Pop. Health Monitoring
- Master thesis: developed three clinical risk models in R to predict patient dropout in Nigeria's largest hypertension control program, combining a large DHIS2 dataset (~172,000 patient encounters), with climate and economic data

### **University of Texas at Austin: Lyndon B Johnson School of Public Affairs**

*Master of Public Affairs*

August 2013 - April 2015

Specialization in Information, Innovation, and Technology Policy

- LBJ School Fellow (full tuition, merit-based scholarship),
- JJ Pickle Federal Internship Fellowship (Summer 2014)
- Co-Founder, Technology and Innovation Policy Society, September 2014
- Relevant coursework: Information Technologies, Policy, and Development; Applied Data Mining

### **The College of William & Mary**

*Bachelor of Arts*

July 2007 - May 2011

*Government, Literary and Cultural Studies*

- Graduated *cum laude* (GPA 3.63)
- Includes semester study abroad at University of Cape Town

## **SKILLS**

- Expertise in DHIS2, SQL, R, MS Office
- Experience with Python, STATA, Commcare, Berkeley Madonna, Tableau, ODK, PowerBI, and ArcGIS
- Languages: English (Native), Norwegian (Listening/Reading B2, Speaking/Writing B1), German (A1)

## **SELECT PAPERS**

Mørkrid, K., Ghanem, B., Abbas, E., Khader, K. A., Ward, I. A., Atallah, A., Baniode, M., Bogale, B., Hijaz, T., Frost, K. S., Frost, M. J., Isbeih, M., Issawi, S., Nazzal, Z. A. S., **O'Donnell, B.**, Papadopoulou, E., Qaddomi, S. E., Rabah, Y., Rose, C. J., ... Frøen, J. F. (2023). Quality improvement dashboard for healthcare providers and targeted client communication to pregnant women to improve timely attendance and quality of antenatal care: A multi-arm cluster randomized trial (the eRegCom trial). *Oxford Open Digital Health*, 1, oqad010. <https://doi.org/10.1093/oodh/oqad010>

Venkateswaran, M., Pervin, J., Dolphyne, A., Friberg, I. K., Fjeldheim, I., Frøen, J. F., Khatun, F., **O'Donnell, B.**, Rahman, M., Rahman, A. M. Q., Nu, U. T., Rose, C. J., Sarker, B. K., & Rahman, A. (2024). eRegMat – a digital registry for improved quality of antenatal care: A cluster-randomized trial in a rural area in Bangladesh. *BMC Digital Health*, 2(1), 5. <https://doi.org/10.1186/s44247-023-00059-4>

Bogale, B., Mørkrid, K., **O'Donnell, B.**, Ghanem, B., Ward, I.A., Khader, K.A., Isbeih, M., Frost, M., Baniode, M., Hijaz, T. and Awwad, T., 2020. Development of a targeted client communication intervention to women using an electronic maternal and child health registry: a qualitative study. *BMC medical informatics and decision making*, 20(1). DOI: 10.1186/s12911-019-1002-x

**O'Donnell, B.**, "Is the UN's Force Intervention Brigade an Effective Peace Enforcement Model? Evidence from DR-Congo." 2017. *Urban Challenges and Survival Strategies in Africa*. CAP Press. Edited by Adeshina Afolayan and Toyin Falola. Paper selected for publication from the 2015 Africa Conference at the University of Texas at Austin.