TEAM
femr +
Real data - Real people

Annual Report

July 2014 - July 2015

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INTRODUCTIONS

From the Co-founders

Sarah D. Draugelis

It is with pleasure that I share this summary document with my colleagues and with all that have contributed to and who use fEMR. This project began in 2011 after the untimely death of a young patient on the island of La Gonave, Haiti, largely because of a lack of communication on the part of the volunteering clinicians, of which I was a part. While unfortunately many great things are started because someone was put at risk, I have since believed in the global and significant impact that communication may have, especially in areas of high need. I read once that the sad truth of the rural destitute poor is that of anonymous death without the dignity of being a statistic- an unfortunate truth that Team fEMR has begun to change. We have created the capacity for research and improvement of foreign mobile clinics even though the volunteer efforts are from non-contiguous agencies. I am thrilled to say that we are well on our way to shifting the global approach to short-term volunteer medical relief from being fragmented, to becoming a united effort in helping the world's most vulnerable patients. I thank you for your time and efforts in joining this pursuit, and hope that we join forces as academics and as humanitarians, and that we continue to advocate for those who are unable to do so themselves.

Kevin D. Zurek

It has been a privilege to be part of the passionate and creative community responsible for creating fEMR. After crossing paths with Sarah and Erik in 2013, I found it difficult to believe that certain medical teams did not have the capacity to record information and communicate electronically. Not long after arriving in a low resource environment one quickly realizes that basic resources are often not readily available. Creating an information system for efficient data collection in some of the most remote areas of the world presents unique technical challenges that are well suited to be solved by open source (and free!) software. By facilitating a common digital platform for open communication and consumption of data, we can continue challenging ourselves to improve the current paradigm of transient medical care. Team fEMR is thankful for every contribution as we continue to build an information system that will support the next generation of collaboration in global health – whether it's via software, feedback, or partnerships.

Erik C. Brown, M.D., Ph.D.

From my first medical brigade to Honduras in 2006, I knew that we, the transient medical team, gained so much more than we gave to the patients. Visiting people in underserved regions, observing the conditions they lived in, and receiving they're smiles and praise is humbling, educational, and inspiring. Before I even set foot in Haiti in 2010 after the earthquake, where I met Sarah, it was in my mind that we needed to do something more than just pass through, distribute medications, and then leave without any acknowledgement of the actual effectiveness of what we did or the need for follow-up. Traveling back to Haiti in 2011, to the same areas we visited in 2010, recognizing faces of people who returned to our clinic but not remembering any details of their case made it blatantly obvious that we were undermining our efforts by not keeping basic, easily accessible records of past care to guide our current care. The concept that is manifesting itself as fEMR is our solution. To know how many patients we expect to have run out of antihypertensive medications before we even get on the plane is useful. To know that we should consider a different antibiotic to treat a recurrent infective process is useful. To share information between teams, removing the disjointed nature of otherwise well-intentioned transient medical care, is useful. We are thrilled to see our dream becoming reality and grateful to all those providing support, whether technical, medical, or moral. Together we can give more to those that give us so much. Thank you!

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DEPLOYMENTS

Contributors/Users Origin
Users Clinic Sites

Users

- **Wayne State University, World Health Student Organization, Detroit, MI**
- **Virginia Commonwealth University, HOMBRE, Richmond, VA**
- **University of Tennessee, Chattanooga, TN**
- **Aid for Haiti, Chattanooga, TN**
- **Global Health First Responders, Columbia, MO**
- **Serving In God's Name, Syracuse, NY**

Clinic Sites

- **Morne l'Hopital, Haiti**
- **Port au Prince, Haiti**
- **Cotundo, Ecuador**
- **Paraiso, The Dominican Republic**
- **Bangalore, India**

Summary

fEMR, or 'Fast Electronic Medical Records', is a free and open-source electronic health system designed specifically for short-term medical relief teams volunteering in resource-limited environments. The project is supported by volunteer developers who are often a part of undergraduate computer science courses at Wayne State University. Every term since we began, we have had a new team of developers contributing to the software. During the winter 2016 semester, fEMR will be introduced to graduate level software engineers. With 15 contributors and over 63,000 lines of code, fEMR has become a scalable and open source solution to recording patient information in some of the most remote areas of the world. Pilot testing in the field began in December of 2012, with our first successful implementation in June 2014 and an average of one deployment per month since December 2014. Teams who use fEMR are typically from US Medical Schools and residency programs or small nonprofit organizations, and travel on an annual or semi-annual basis to deliver medical care in resource-poor settings for a week or two at a time. fEMR was created with a streamlined interface so as not to disrupt clinic flow in what is often a high-volume, chaotic environments, and can be implemented with less than one hour of training and without IT personnel in the field.

We are currently working on research examining clinician perception of clinic delay and the improvement in quality of care with the use of fEMR, with the goal of validating the system within the scientific community. The long-term intent is to increase empirical communication not only between the traveling medical teams, but also between the foreign physicians and local stakeholders. Though the tradition is that short-term medical relief efforts are not capable of creating a sustainable impact, we believe that exploiting the presence of these groups and gathering the data they generate can and will create lasting change in low-resource locations.

BUDGET

Since its inception in 2011, fEMR has been built and ran solely by volunteers and on donated equipment. Our team is comprised of a diverse group of individuals from across America, and our users are an extraordinary collection of medical volunteers; often putting themselves at risk in order to bring basic medical care to those who are unable to access life's basic necessities. To date, fEMR has been a community-driven effort with a zero-dollar budget. Though scaling up and continuing to adjust to the exponential growth that we have experienced in our first official year of incorporation will require significant funding, it is impressive to note that hundreds of people have come together in their spare time for a united effort. Moving forward, we are applying for several large-scale grants, are currently accepting donations to cover overhead costs, and look forward to publishing a comprehensive, detailed budget in 2016.

VISION

Open source technology can create a level of continuity in health care delivery not previously feasible. For example, while there are many surgical referrals during any given weeklong clinic, there is rarely any follow up to these recommendations. However, a visiting team can create a record for a patient accessible to a local hospital. Once the local clinician team completes surgery, they can then update the patient record so that the volunteers next traveling to the village can adequately prepare for any necessary follow up care. As such, our next steps are to build a centralized data repository to be shared between all clinicians. While we are working with a hospital system in Haiti to pilot this paradigm, we plan to expand this to other areas of need globally.

> *"… the value of individual patient data for improved patient care is very much a case of 'connect the dots': given that many patients receive services from separate facilities and care providers, some form of electronic record system could compile these data and make them accessible to other health care professionals, leading, for example, to early detection of an influenza outbreak."*
> *-World Health Organization, Global Observatory for eHealth Series, Volume 6*

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