

# Transnational Health Records: A US/Mexico Case Study

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## ABSTRACT

In this paper I describe a transnational health records implementation project between health professionals in Colorado and the Mexican state of Guanajuato that was started in 1999. While submitted as a work-in-progress, I hope in the course of the next few months to develop a fleshed out case study and a proposal for fieldwork in Mexico to take place over the summer.

## Author Keywords

Transnational health records, EHR, medical informatics, migrant workers

## ACM Classification Keywords

J.3 Life and Medical Sciences: Medical information systems

## General Terms

Human Factors

## INTRODUCTION

While looking for potential research topics, I came across a summary report given for a specialized meeting on migrant workers in April 2000[1]. The report described an agreement between the Salud Family Health Centers, Department of Family Medicine at the University of Colorado School of Medicine, the Secretary of Health of Guanajuato and the University of Guanajuato School of Medicine in Leon to form a project called GUACO. There were several aspects to GUACO, the main one which addressed the lack of communication between Mexican health providers and their US counterparts who share patients migrating between the two locations. They were in the process of designing a computer system to allow health providers in both Colorado and Guanajuato to share medical information on patients as well as a database that included demographic, epidemiological and clinical data. The process was described in a few paragraphs with promises of articles in the medical, medical informatics, and public health literature as well as plans to expand the

database to include migrants from other areas of Mexico and the U.S. When trying to follow up, I was unable to find any subsequent publications, so wondered if this was another case of a failed IT implementation due to all the multitude of factors that could have gone wrong. I soon found out that some aspects of the project take hold, with the exchange of health professionals between Colorado and Guanajuato still taking place. There were also a few papers published on some of the more clinically-oriented aspects of the project. However, the director of the project indicated that the medical informatics implementation itself failed, for a variety of reasons. The director initially thought the project was too old to be of use and that the group was very “naïve” going into the project, but I indicated the importance of analyzing even “failures” since other people embarking on similar projects would probably run into the same issues. The director agreed to cooperate and hoped that I could get feedback from both sides of the project in order, saying he thought they all were friends enough to be frank about what went wrong. Whether this will turn out to be true in practice might be optimistic. An initial search for people named as being involved with the project showed that some people had moved on, with several becoming politicians which probably makes it less likely they will be able to share their experiences candidly. Additionally the length of time that has passed might challenge the accuracy of people’s memories, making it necessary to incorporate more historical/archival methods in order to reconstruct the past. Nevertheless, I feel that re-examining the project brings up interesting questions across a variety of domains that would be great to address in an interdisciplinary workshop. The initial report focused more on the clinical questions and database implementation so I hope to be able to examine organizational, cultural and design/HCI aspects of the project to do a case study.

## PRIOR WORK

There is considerable medical informatics literature about what we can learn from “failed” IT implementations. Kaplan et al hosted a workshop at AMIA 2006 on health care IT failure which was summarized in a 2009 JAMIA paper [2]. They pointed out that “IT-related failures in health care often are covered up, ignored, or rationalized so mistakes are repeated”. They also mention “culture clash” when “translating” among specialties, stakeholders, clinicians, and implementers. Fraser et al presented a 2010 AMIA paper about implementing medical information

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systems in developing countries with lessons learned, ending with the importance of evaluating both success and failures [3]. Berg et al [4] emphasized socio-technical approaches for understanding ICT development in health care and mentioned the potential problems when a health care institution bought an application developed in another country. Greenhalgh et al [5] did a systematic literature review which found a multitude of different approaches in over 100 studies on electronic patient record implementation including institutional ethnography, critical feminist sociology, and actor-network theory.

Contact with prospective informants helped me find several other related papers [6], [7] covering the GUA-PA project, which seemed to have similar aims to GUACO. GUA-PA was a cooperative effort between Guanajuato and Pennsylvania Departments of Health. Its scope seemed to be more limited to public health surveillance, building on existing CDC systems. Its conclusions are suggestive: “While GUAPA demonstrates that the exchange of health information is technologically possible with relative ease and minor expense, a larger challenge is becoming clear--to surmount political, cultural, and economic barriers that impede provision of health care on both sides of the border.”[7] It does not go into detail about these barriers, but the implication seems to be that the successful pilot study did not go forward due to these barriers. These papers give me a basis of comparison for the GUACO project, especially since at least on the Mexican side it might have involved some of the same people.

A framework that would probably be useful for this project is that of Linstone’s multiple perspectives, as put to effective use by Joan Ash et al [8]. This framework takes into consideration three systems: Technical (data driven, focus on hardware and software), Organizational (policies, procedures, and interpersonal aspects of organization) and Personal (personal implications and individual behavior of key players). According to Ash, “Any large and complex set of issues can be analyzed by selecting important stakeholder groups and gaining their perspectives on these three systems.” In Ash’s study, the groups were defined as clinical, administrative, and informational technology. This seems like a reasonable classification to potentially apply to the GUACO project, though it is not clear how many people from each category I would have access to. Additionally, there is an extra dimension of culture in that Mexican physicians may have had a very different perspective from their American counterparts. Depending on how nuanced these cultural differences are expressed in my analysis, I might turn to frameworks that more actively take culture into consideration such as that of postcolonial computing [9], which offers a lens for examining transcultural encounters in design.

In terms of other work that I hope to draw upon for my analysis and background research, I expect to draw from the work of Luis Castro and Victor Gonzalez who have done

extensive work looking at the transnational social networks of Mexican migrant workers and how they stay in touch with their home communities [10, 11]. Coincidentally most of their research also revolved around migrants from a rural community in Guanajuato. The Pew Hispanic Center has issued several reports on Hispanics and healthcare while the Migrant’s Clinician Network and National Center for Farmworker Health have also been suggested for additional background data on the population ultimately served by these systems.

## INITIAL RESEARCH QUESTIONS

Based on my current understanding of the project I have outlined several initial questions:

- 1) What are the differences between US and Mexican health systems that need to be addressed in a transnational project like this? Much of my initial background research will be finding out about the state of medical informatics in Mexico as well as well as more broadly the Mexican health care system.
- 2) What were the main obstacles and challenges for this project? I hadn’t heard of any similar attempts at this sort of multi-national cooperation in an EHR-related implementation and assume there must have been many complexities that needed to be dealt with. Interoperability is a major issue even with health centers in the same city let alone two countries with very different infrastructures. An initial phone call with one of the organizers mentioned funding issues as well as difficulties with changes in governments after Mexican elections.
- 3) How would a similar project be set up today be different in terms of the technological advances in the past decade? This project was started before the big push for EHR systems in this country.
- 4) Was technology even vital to this project? The initial report indicated that most of the funding went to software development[1]. However a later paper by the group stressed “In the United States, there is a tendency to emphasize high technology as the means to better health. However, the true root causes of health disparities are more likely the result of low-tech issues such as respect and communication”. [12]
- 5) Can we apply lessons from other areas of transnational human-computer interaction to such a project? This would obviously be something to be explored with collaborators at the workshop.

The Multiple Perspectives Framework gives me points of emphasis for some of the question based on its systems. For technology systems, I would want details about the infrastructure, acceptance, maintenance, planning in terms

of software or usability development methods, and impact of commercial developments. For organization systems, I would want to know about the role of bureaucracies and political administrations, both factors that were mentioned in my initial conversation with the director. For personal systems, I would want to know how the person got involved with the project and what background and experiences they had brought to the project. And as an overall question, with the benefit of hindsight as well as changed conditions, what would they advise people starting similar projects today?

## CONCLUSION

With my paper, I hope to give a concrete example of a transnational health records implementation to delve into the challenges involved with such a complex project and inspire similar work in the health HCI and medical informatics communities.

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