

IPRO 340: Improving health care information systems for a community health network

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Project Introduction:

I PRO 340 “Improving Healthcare Information Systems for a Community Health Network” Has examined the process used at various ACCESS Health Centers to refer patients from their primary physician to specialists for further medical testing. Through on-site interviews with medical assistants and referral coordinators, I PRO 340 has assessed uniformity throughout centers and identified both advantages and disadvantages with the current processes. These interviews and further analysis have led I PRO 340 to develop an ideal referral process that combined practices already in place and unique ideas created by the team. This information has been and will continue to be disseminated to ACCESS Health Care administrators with the goal of providing a more efficient process that allows for the best care for all patients.

Background:

This is the first semester that I PRO 340 has been working with Access to assess their referral process and the thoughts and feelings of the employees involved in the referral process at Access Health Clinics. Access is a network of community health care centers that serve the poor and underserved people in the Chicago area. The mission of Access is to provide high quality, cost effective, safe, comprehensive, primary and preventive health care in underserved Chicagoland communities. Currently the referral processes are different at many of the health care centers and many referrals are being sent out of network, to non-Access or Mt. Sinai clinics. The referral process begins when a Doctor needs to attain the expertise of another Doctor in order to effectively treat a patient’s illness. The detailed steps that occur after the referral is ordered is what our team, and Access, is interested in finding out. Access is particularly interested in having our team discover whom the Doctors are referring their patients to. Whenever a referral is ordered that is out of the Access network, either Mt. Sinai or any other clinic not affiliated with Access, Access loses revenue. Along with a loss of revenue, Access has a desire to provide a continuum of care to their patients. This involves making sure that patients are receiving the same high quality of care that they would receive at an Access clinic when

they are referred to a non-Access health center. Other aspects in the continuum of care involve being efficient in getting patients appointments quickly, making sure patients attend their referral appointments, and evaluating how good the quality of care the patients receive is. From our assessment, we will provide Access with what we believe to be the 'Ideal Referral Process.' We will also provide a map that could be used at their clinic to aid patients in locating their referral appointments. The implementation of any of our proposed solutions would occur in the next semester's IPRO. The ethical and scientific issues we came across were maintaining patient confidentiality and becoming familiar with medical lingo. Each member of our team has had to learn how to use Microsoft Visio in order to make flowchart diagrams that represent each clinic's referral process.

Purpose:

Access decided to have our team address the referral process as our problem for this semester. Access wants our team to work on this problem to discover whom the Doctors are referring their patients to and why. Whenever a referral is ordered that is out of the Access network, either Mt. Sinai or any other clinic not affiliated with Access, Access loses revenue. Our team's purpose is to assess the referral process and assess the perceptions and feelings of employees involved in the referral process. We have also determined what changes need to be made to the referral process and see what can be done to make the referral process easier and less stressful for the employees involved.

Research Methodology:

The assessment of the referral process in the Access clinics was challenging and we used the following methodology:

To gather the data we needed, we conducted 10 health center interviews across the Chicagoland area. In order to conduct these interviews, each team member went through interview training. Through the interview training we learned how to make a comforting environment for the interviewee to ensure that we could obtain all the information we needed. Two team members were used at each health center, one took notes and the other one asked the questions. We did this to ensure that we got all of the information documented and so that we could double-check each other's work to ensure the best quality. Each interview contained two sets of questions. The first set of questions was detailed questions aimed at obtaining the clinic's step by step procedures for the referral process. This questionnaire contained around 40 questions. The second set of questions dealt with the employee thoughts and perceptions of the referral process. The answers were kept confidential, and we assured them of such, so that we could get brutally honest answers and they would not be afraid to share their thoughts.

After the interviews were conducted, one person from the interview team would type up the notes while the other person made a flowchart diagram documenting the referral process. We then sent the notes to Sarah so that she could check for any syntax errors and perform an overall quality check. The flowcharts were sent to Vitaliy so that he could

make sure that everything was in the correct format. From these notes and diagrams Khoa performed a cross analysis of the information gathered and made a list of similarities and differences. Once we found that we had more similarities than differences, we concluded that 10 health centers was an adequate sample of all of the Access clinics. All of the information from the health centers along with the cross analysis, was used to create what we deemed to be the ‘Ideal Referral Process.’ This research methodology ensured that we addressed all of the problems presented to us by Access, which included time, cost, errors, quality of care and continuum of care.

Assignments:

In order to achieve our objectives, every team member had to complete work on every aspect of the project. Due to the size of our team we did not have sub-teams, but rather worked together on everything to ensure its successful completion. Below are a list of our tasks, assignments, and project deliverable and milestone dates, which are highlighted in yellow.

Project Deliverable and Milestones	Due Date
Project Plan	25-Sep
1st Interview	29-Sep
Mid-Term Progress Report	23-Oct
Last interview	17-Nov
Analysis completion	28-Nov
Exhibit/Poster	30-Nov
Project Abstract	29-Nov
Final Oral Presentation	30-Nov
Final Report	1-Dec
Team Information	30-Nov
Comprehensive Deliverables CD	1-Dec

Tasks	Date	No. of team member/Hours
Orientation (1) defining the problem. (2) deciding on roles	28-Aug	5 member / 1week 5 members / 1week
Training: (1) project management (2) interview training	4-Sep	3 members / 2 days 5 members /1 week

Interviews: Types: referral, psychological (1) note taking (2) conducting interviews (3) text documentation (4) charts and diagrams	29- Sep	2 or 3 members per interview 1 person / 8 weeks 1 person / 8 weeks 1 person / 8 weeks 1 person / 8 weeks
Analysis: (1) Make comparative matrices (2) Conduct analysis session (3) Design ideal referral process (4) Design data capture/info tracking referral process	7- Nov	2 members / 3 days 2 members / 2 days 2 members / 3 days 2 members / 2 days`

Our team’s task assignments and designation of roles were all inclusive. Due to the small size of our groups, we do not have different members for the sub groups. All team members participate in all tasks. However, we have 1 person in charge of managing each task. We have found that our team structure works very efficiently.

Name	Educational background major
Megan Anderson	Psychology
Sean Durkin	Information Technology
Katherine Goldsmith	Psychology
Vitaliy Kunin	Electrical Engineering
Khoa Le	Computer Engineering
Sarah Thilges	Psychology

Team leader	Vitaliy Kunin
Sub teams	Sub Team leaders
Interviews	Sarah, Megan, Katie
Analysis	Khoa
Documentation	Sean, Megan

Analysis sub team	Roles
Megan Anderson	Conduct analysis session
Sean Durkin	Design map with clinic information
Katherine Goldsmith	Design ideal referral process
Vitaliy Kunin	Design data capture/info tracking referral process
Khoa Le	Make comparative matrices, Conduct analysis session

Documentation sub team	Roles
Megan Anderson	text documentation, and documentation binder
Sean Durkin	graphical, text documentations
Katherine Goldsmith	text documentation
Vitaliy Kunin	graphical documentation
Khoa Le	text documentation

Interview sub teams	Role
Team 1	
Megan Anderson	interviewer
Sean Durkin	note taker
Katherine Goldsmith	interviewer
Team 2	
Vitaliy Kunin	note taker
Khoa Le	note taker
Sarah Thilges	interviewer
Team 3	
Vitaliy Kunin	note taker
Megan Anderson	interviewer
Katherine Goldsmith	note taker
Team 4	
Sean Durkin	note taker
Khoa Le	note taker
Sarah Thilges	interviewer

Team 5	
Katherine Goldsmith	interviewer
Vitaliy Kunin	note taker
Khoa Le	note taker
Team 6	
Sean Durkin	note taker
Megan Anderson	interviewer
Vitaliy Kunin	note taker

Designation of Roles

Meeting Roles

Minute taker: Katherine Goldsmith

Agenda Maker: Vitaliy Kunin

Status Roles

Weekly Timesheet Collector/Summarizer: Megan Anderson

Master Schedule Maker: Sean Durkin

Interview Trainer: Sarah Thilges

Obstacles:

Our team's problems have involved communication with health centers and the limited availability of our team members. We have had problems with health centers not being prepared for our visits, and the people we were supposed to interview were on vacation or took the day off. We have dealt with this problem by re-scheduling the missed visits, calling a day in advance to remind the clinic of our visit, and by re-adjusting our task schedule to accommodate for the interviews going later than planned. Availability has been a problem because we have a small team with limited availability and have had to work within the clinic's availability. We resolved this problem by only scheduling visits on Monday, Wednesday, and Friday to accommodate our schedule and the clinic's schedule.

For future semesters, we recommend calling the day before a scheduled visit to ensure that everyone is on the same page and the clinic will be ready when they arrive. Our team figured this trick out about half way through our scheduled visits, and it saved a lot of time and missed visits.

Results:

Our team has been working diligently throughout the semester to reach our objectives and ultimately the final goal. We have completed orientation in which we defined our problem and decided on roles within the team. We have also had 3 team members, Katie, Vitaliy, and Khoa, complete project management training. All 6 members of our team have undergone interview training, which was led by Sarah and Professor Ferguson. In total we completed 10 site visits, with two team members attending each visit. With each site visit we have a completed set of interview notes, a thought/perception questionnaire, and a flowchart detailing the clinic's referral process. Khoa has completed his analysis of health centers by creating an Excel spreadsheet comparing the referral processes across all the clinics we have interviewed. Through this Excel chart our team has been able to compile a list of similarities and differences between the clinics.

The key similarities we have discovered include: PCP orders patient referral by filling out part of the standard referral form; the MA, receptionist, or referral coordinator completes the referral form; HMO insurance require approval from ACCESS managed care; contact patient using the 3 step standard of call, send mail, send certified mail. The key differences we have discovered include: Referral appointment scheduling time depends on insurance approval from ACCESS managed care; checking for missed referral appointments is done differently; follow up appointment can be scheduled either same day of patient's visit or after referral appointment; shuttle buses are provided for transportation to Mt. Sinai.

With these findings we have recommended some innovative ideas to prevent revenue loss and provide a quality and continuum of care. Our ideas include providing each clinic with a list of all the Access clinics and what specialties they possess, and using a computerized system to obtain HMO referrals. Our results, such as the comparative analysis, have lead to the production of an ideal standardized system for referrals. From the analysis, our team was able to recommend changes that will help Access address its loss of revenue and problems involving the continuum of care and the quality of care. Many of our results have proved to be of great interest to our sponsor. For example, Access has been very interested to see our list of similarities and differences so that they can see that there is currently no standardized process for the referral system. They have also been interested in hearing some of the innovative ideas that certain clinics are using. These results will help Access with their problems of quality and continuum of care, and may also help address their issues with loss of revenue.

All of our results have been incorporated into our proposed solution by using the innovative ideas that are in use by some of the clinics. We have also included the feelings of the employees involved in the referral process to propose changes, such as possibly hiring full time staff to work on referrals. All of these research findings could have great implications for both our sponsor and society. Access will have the opportunity to provide better quality of care, a better continuum of care, and they may also be able to stop revenue loss by keeping referrals in their network. The implications of our findings on society are enormous. Just imagine if a patient has a serious health problem and is able to get to a referral appointment faster and have a higher quality of care because of our work with the referral process. We have the potential to save lives.

Recommendations:

Based on our research findings, we have created an ideal referral process. This process includes step-by-step actions that we believe would lead to more effective and satisfying patient care. These steps address Access's targets of time, cost, continuum of care, and quality of care.

Ideal Referral Process:

Problems addressed: Time, continuum of care, cost

- 1.) Are referrals approved? T, CC
- 2.) Patient not picking up referral. T, CC
- 3.) Patient not going to appointment. T, CC
- 4.) In network VS out of network referrals. C

Already used = Blue

Used in some clinics = Pink

New = Red

Key Words: (indicated by italics)

1. standard referral form
2. referral appointment
3. follow up appointment
4. referral log sheet
5. referral log binder
6. within network list, partner list, outside of network list
7. referral consult
8. standard form of appointment information
9. pre-viewed consult bin
10. post-viewed consult bin

*unless otherwise indicated all the steps performed are done by the MA, the receptionist, or the referral coordinator.

1. PCP orders patient referral by filling out part of the *standard referral form*.
2. Patient gives availability times for the *referral appointment* and *follow up appointment* (Hawthorne). T, CC
3. Put availability times into *standard referral form*. (Hawthorn) T, CC
4. Make *follow up appointment* with PCP when patient is checking out (La Villita). CC
5. Put *follow up appointment data* into *referral log sheet*. T, CC
6. Fill out *standard referral form* with patient chart.
7. Enter referral information into *referral log sheet*. (La Villita, Cabrini) T
8. Use lists to check if specialty or service is available within ACCESS (go to 10), with one of ACCESS's partners (go to 11), or outside of ACCESS (go to 12). C
9. Schedule *referral appointment* within ACCESS using the *within network list* (La Villita). C

10. Schedule *referral appointment* with one of ACCESS's partners using their *partner list*. C
11. Schedule *referral appointment* outside of ACCESS using their *outside of network list*. C
12. Mark *referral log sheet* to indicate that the *referral appointment* has been scheduled. T, CC
13. Put *standard referral form* into *referral log binder*. T
14. Referral approval needed? If yes, go to step 15. If no, go to step 21.

15. Fax *standard referral form* to ACCESS managed care for approval.
16. File *standard referral form* that is waiting for approval in the *referral log binder*. T
17. Referral approval granted for *referral appointment*.
18. Mark *referral log sheet* to indicate that approval was granted for the *referral appointment*.
19. Fax *standard referral form* to clinic where *referral appointment* will take place (La Vallita, Melrose Park). T
20. Stamp *standard referral form* to indicate that fax is complete.

21. Mark *referral log sheet* to indicate that approval is not needed for *referral appointment*. T, CC
22. Fax *standard referral form* to clinic where *referral appointment* will take place (La Villita, Melrose Park). T, CC
23. Stamp *standard referral form* to indicate that fax is complete.

24. Send *referral appointment* information to patient (*standard form of appointment information* as well as a map and directions to the referral clinic). CC
25. Mark *referral log sheet* to indicate that *referral appointment* information has been sent to the patient.
26. Give a reminder call to the patient the 2-5 day before the *referral appointment* with Medvoice. Referral information must be stored in Meditech.
27. Is patient able to go to *referral appointment* without assistance? If no, go to step 28. If yes, go to step 29.
28. Provide a shuttle service to the referral clinic for the patient (IEI, Madison). CC
- *Patient either goes or does not go to appointment
29. Has *referral consult* been received in a timely fashion (by mail, fax, or through Meditech) from the referral clinic? If yes, go to step 35. If no, go to step 34.
30. Fax or call referral clinic and ask: did patient go to appointment? If no, re-start referral process at step 1. If yes, ask them to send the consult and go to step 33.
31. Mark in *referral log sheet* to indicate that *referral appointment* was attended and *referral consult* was received.
32. Stamp *referral consult* with post *referral appointment* options (IEI, La Villita, Cabrini, Madison).
33. Put *referral consult* in *pre-reviewed consult bin* for PCP to look over.

34. PCP indicates what post *referral appointment* option to take and gives approval for this action with a signature.

35. PCP puts reviewed *referral consult* in *post-reviewed consult bin (okay to file or abnormal consult slots)*.

36. Consult abnormal? If yes, go to step 37. If no, go to step 39

37. Reschedule follow-up appointment for a sooner time.

38. Contact the patient using the 3 step standard.

39. File *referral consult* along with *standard referral form* in the patient chart and flag as abnormal→skip to step 41.

40. Keep original follow-up appointment, don't reschedule follow-up appointment.

41. File *referral consult* and *standard referral form* in the patients file.

42. Does patient go on *follow up appointment* with the primary care provider? If yes, go to step 42. If no, go to step 43.

43. Mark in *referral log sheet* that patient went on *follow up appointment*→skip to step 44.

44. Notify patient that they did not go to the *follow up appointment*.

45. Reschedule *follow up appointment*.

46. At the end of every day check the *referral log binder* to make sure that patients went to appointments (referral and follow up), and that *referral consults* were received for the previous two weeks. CC, T

47. If patient did not go to *referral appointment* start at step 8.

References:

- 1.) Delmeda Williams, Austin Family Health Center, 773-745-1200
- 2.) Candy Jacks, Brandon Family Health Center, 773-721-7600
- 3.) Natalie Arjona, Genesis Health Center, 847-298-3181
- 4.) Joanna, Hawthorne Family Health Center, 708-780-9777
- 5.) IEI Family Health Center
- 6.) Kling Adult Medicine
- 7.) La Vallita Family Health Center
- 8.) Tamika Junes-Highley, Madison Family Health Center, 773-826-6600
- 9.) Adjoa, Melrose Park Family Health Center
- 10.) Jackie Lange, Access IT analyst
- 11.) Access Community Health Center, <http://www.accesscommunityhealth.net>

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- Access Clinics, allowed us to interview them and were open with sharing their knowledge of the referral process
- Dan Ferguson, Professor, guided project and assignments
- Steven Glass, Access CIO, reviewed presentations and guided project
- Dennis Ryan, Access employee, reviewed presentations
- Jackie Lange, Access Information Tech. Analyst, project liaison and scheduled interviews
- Tom Jacobias, IPRO instructor, observed presentations
- Sarah Thilges, IIT Ph.D candidate, assisted in quality checks of deliverables and conducted interview training