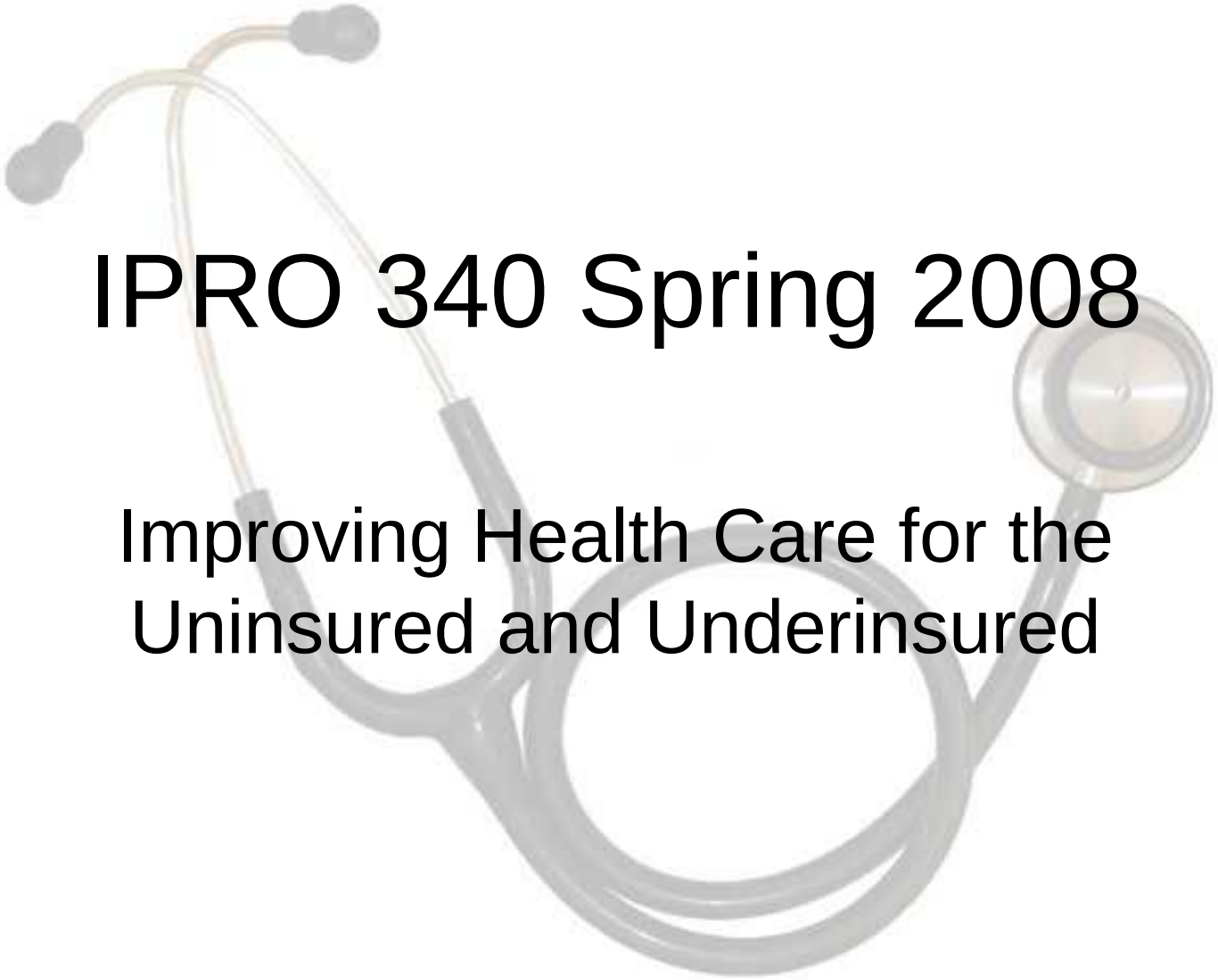
IPRO It takes a team

INTERPROFESSIONAL PROJECTS PROGRAM

ILLINOIS INSTITUTE OF TECHNOLOGY



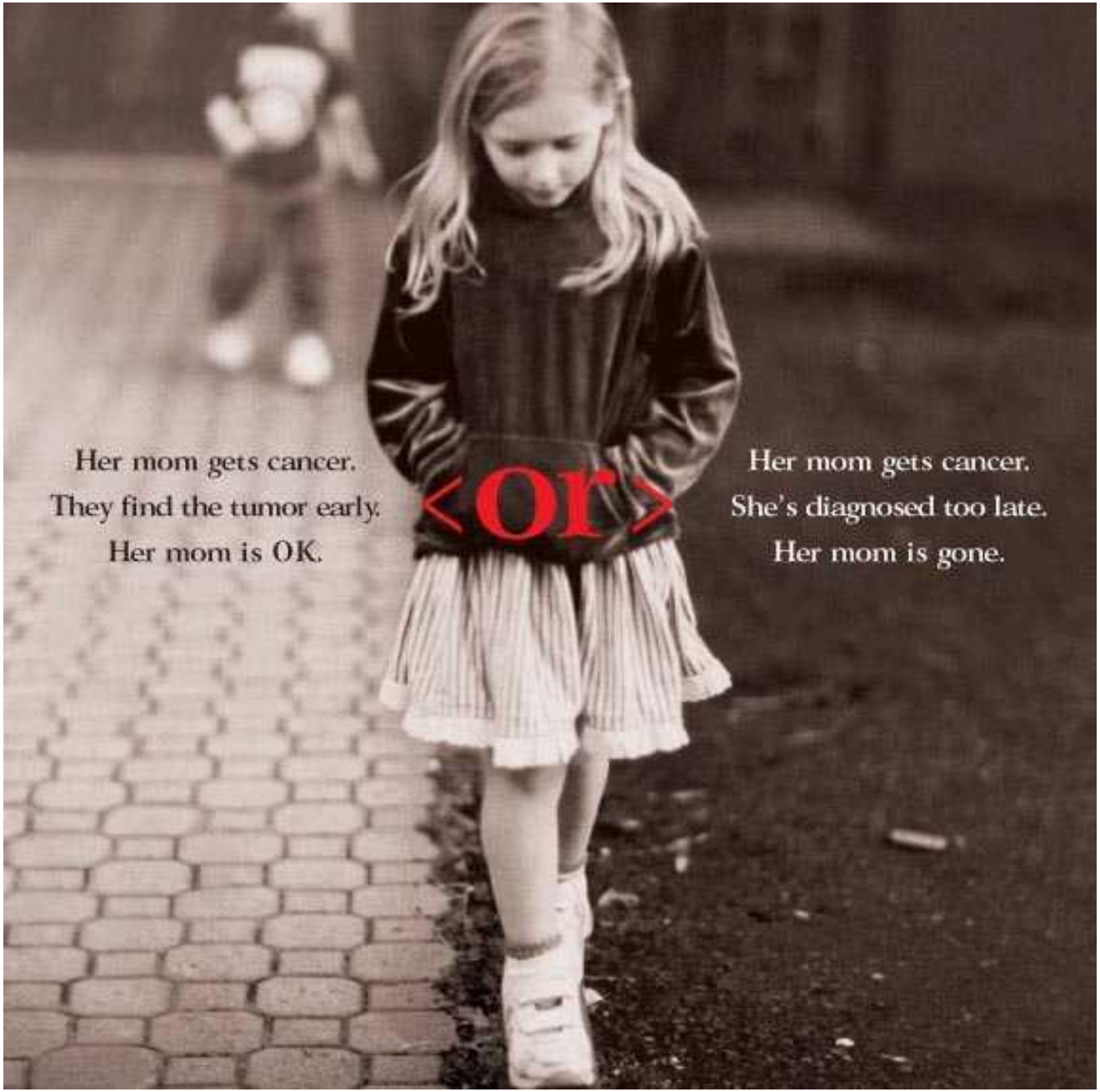
IPRO 340 Spring 2008

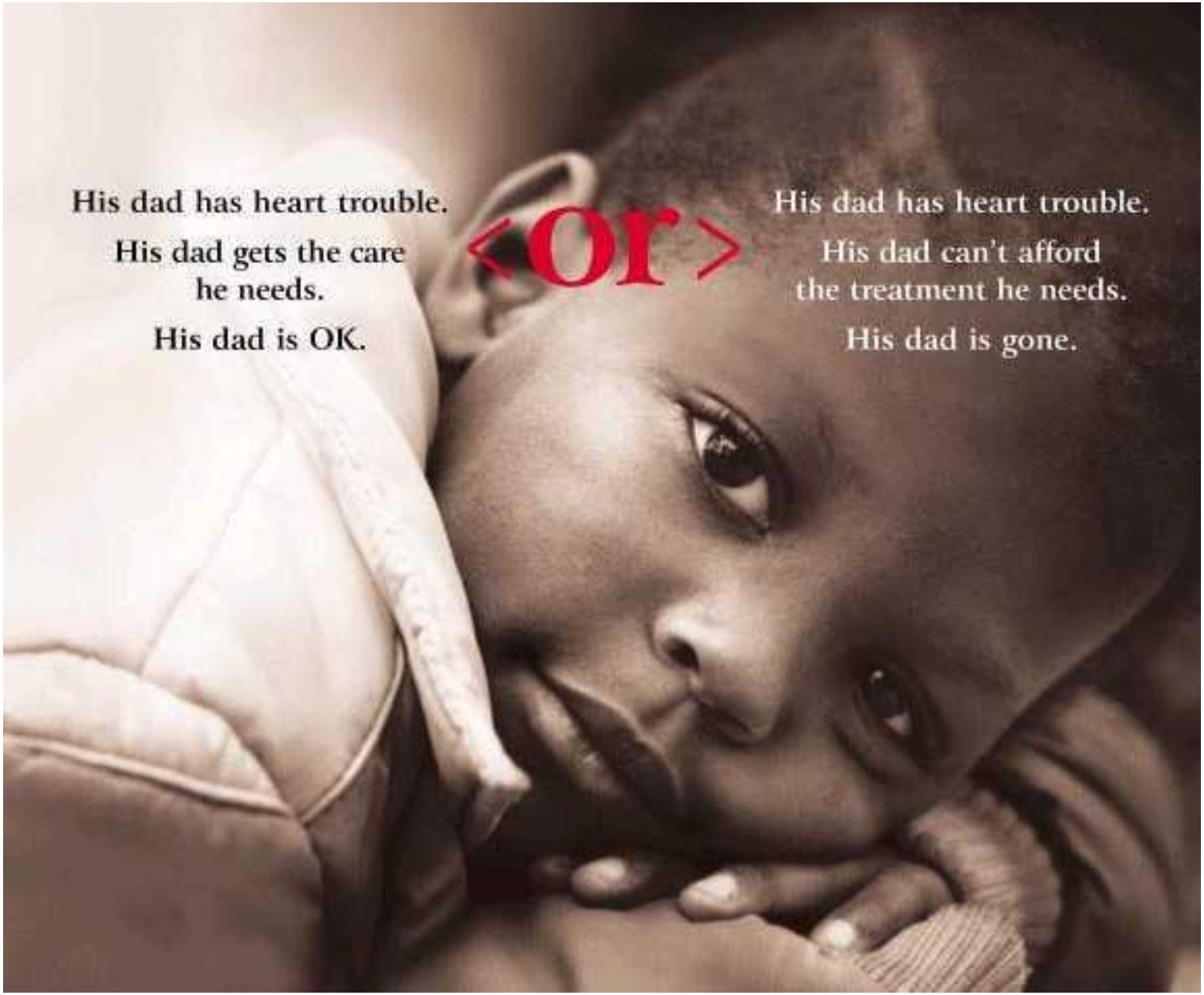
Improving Health Care for the Uninsured and Underinsured

Problem

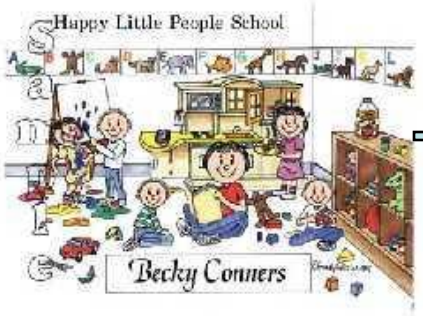
About Two Million People of Metropolitan Chicago are uninsured or underinsured and can receive more efficient, effective quality health care.

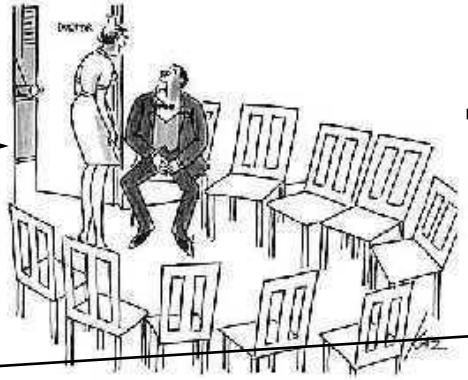
Why is this a problem?


Her mom gets cancer.
They find the tumor early.
Her mom is OK.
<or>
Her mom gets cancer.
She's diagnosed too late.
Her mom is gone.


His dad has heart trouble.
His dad gets the care he needs.
His dad is OK.
<or>
His dad has heart trouble.
His dad can't afford the treatment he needs.
His dad is gone.

630-
630-288-1777
Suggestions
630-303-7886
630-424-4000
630 617 7000
Clear Search History


Happy Little People School
Becky Conners



Do Not Duplicate
Property of

communityhealth

ACCESS

Chicago Family Health Center

OBJECTIVE

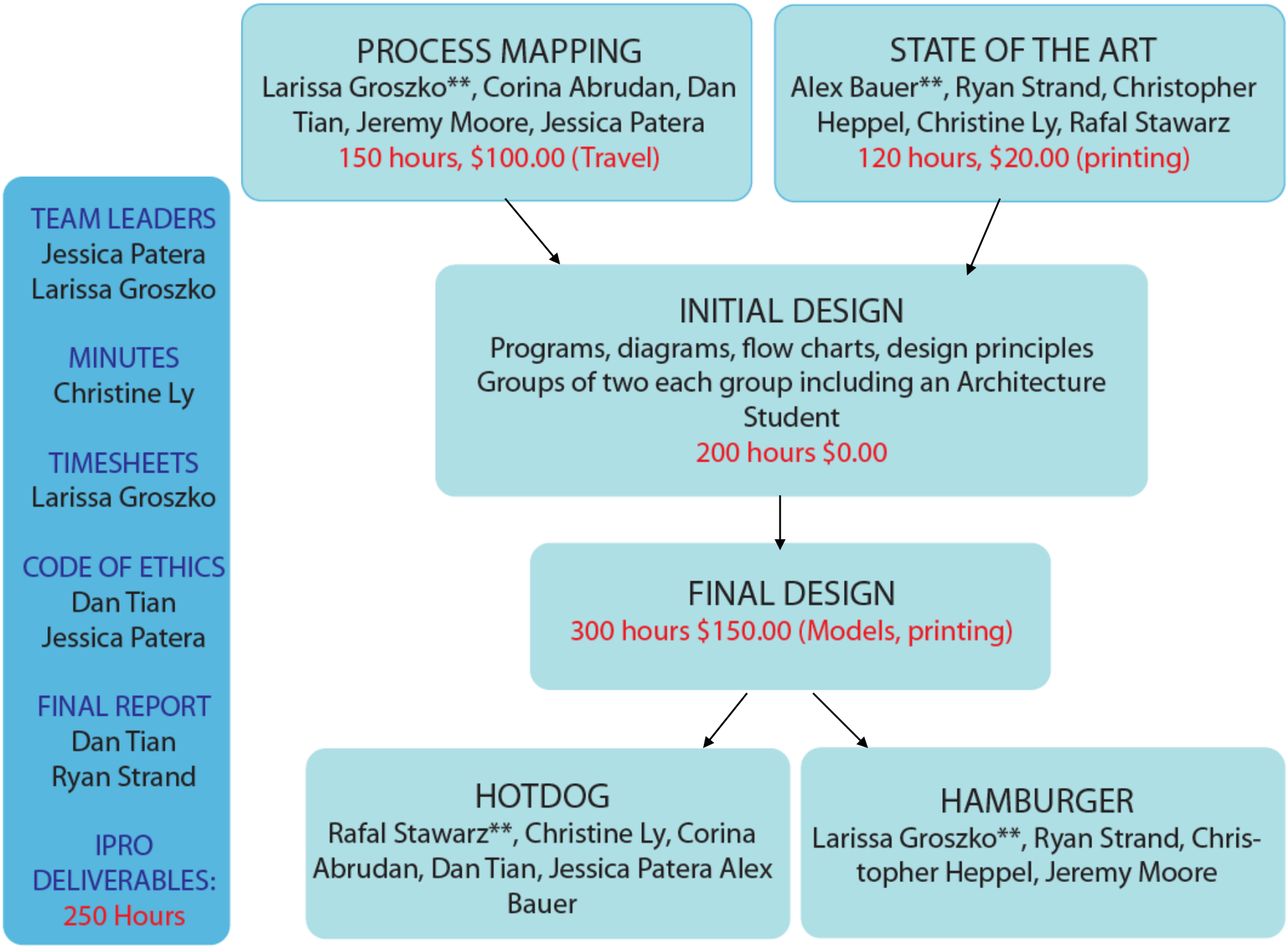
To design a green (sustainable) community health center that employs state of the art technology and LEAN process design principles for the uninsured and underinsured communities of Chicago

Semester Deliverables

Process maps from research, observations, and interviews.

Research on emerging technology and technology trends.

A Design of a community health center that optimizes process flow and employs these emerging Technologies


PROCESS MAPPING
Larissa Groszko**, Corina Abrudan, Dan Tian, Jeremy Moore, Jessica Patera
150 hours, $100.00 (Travel)
STATE OF THE ART
Alex Bauer**, Ryan Strand, Christopher Heppel, Christine Ly, Rafal Stawarz
120 hours, $20.00 (printing)
INITIAL DESIGN
Programs, diagrams, flow charts, design principles
Groups of two each group including an Architecture Student
200 hours $0.00
FINAL DESIGN
300 hours $150.00 (Models, printing)
HOTDOG
Rafal Stawarz**, Christine Ly, Corina Abrudan, Dan Tian, Jessica Patera Alex Bauer
HAMBURGER
Larissa Groszko**, Ryan Strand, Christopher Heppel, Jeremy Moore
TEAM LEADERS
Jessica Patera
Larissa Groszko
MINUTES
Christine Ly
TIMESHEETS
Larissa Groszko
CODE OF ETHICS
Dan Tian
Jessica Patera
FINAL REPORT
Dan Tian
Ryan Strand
IPRO DELIVERABLES:
250 Hours

Access Community Health Network

- **Founded in Chicago, in 1991**
- **Serves uninsured and underserved communities in the Chicago region**
- **Access focuses on primary ambulatory care for all**
- **Serves more than 210,000 Patients in Chicagoland annually**
- **A staff of over 850, including 250 primary care providers**
- **1/3 of patients uninsured, majority on Medicare or Medicaid**
- **51% of Board of Directors are Access patients**
- **50 facilities**
- **Each facility has their own range of patients based on age, gender, and ethnicity.**

Process Mapping

Larissa Groszko, Corina Abrudan, Dan Tian, Jeremy Moore,
Jessica Patera

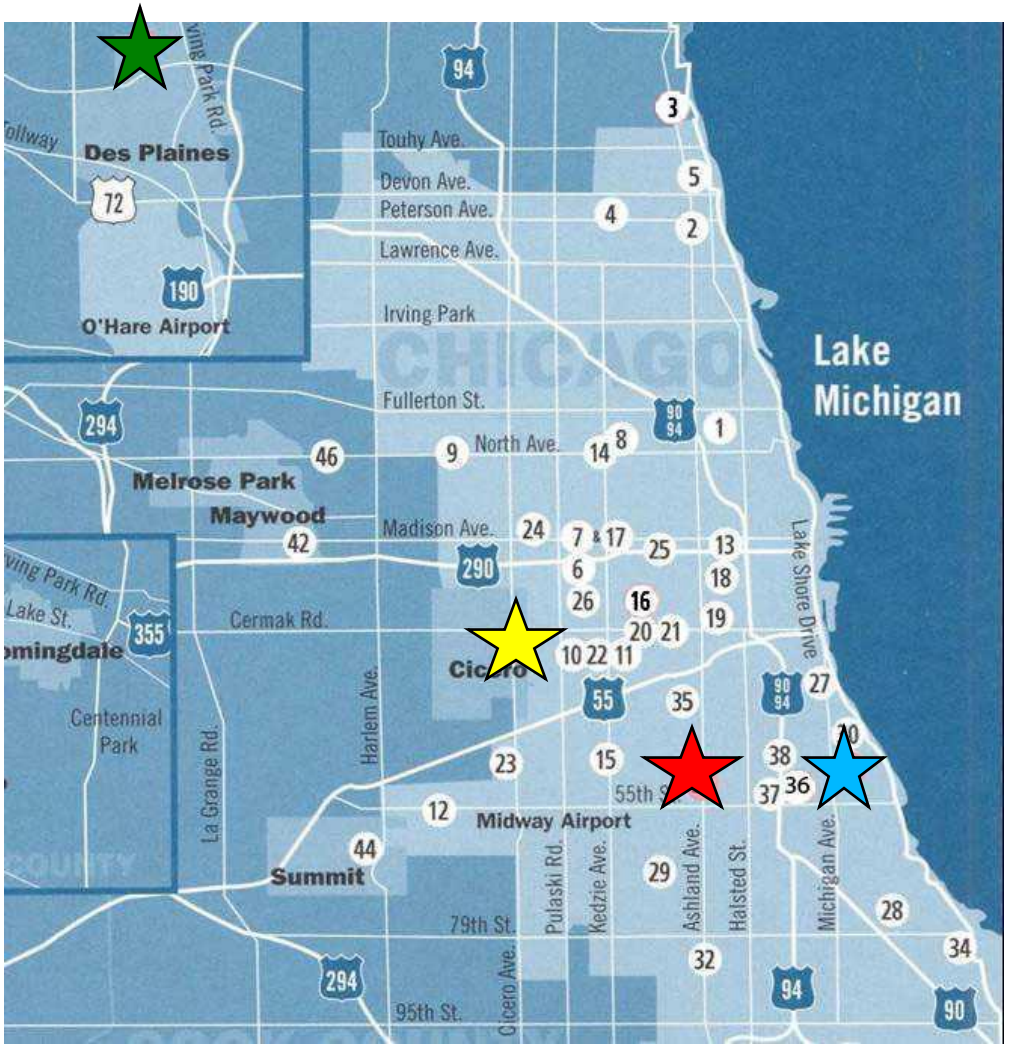
Objective

Analyze the existing processes at healthcare facilities (Registration, Examination, Discharge, Laboratory, Referrals)

Deliverables

1. Process Maps for each of the five processes to visualize the flow and duties of patients and staff
2. An ideal process map for each of the five processes.

Sites Visited



Booker Family Health Center

Hawthorne Family Health Center

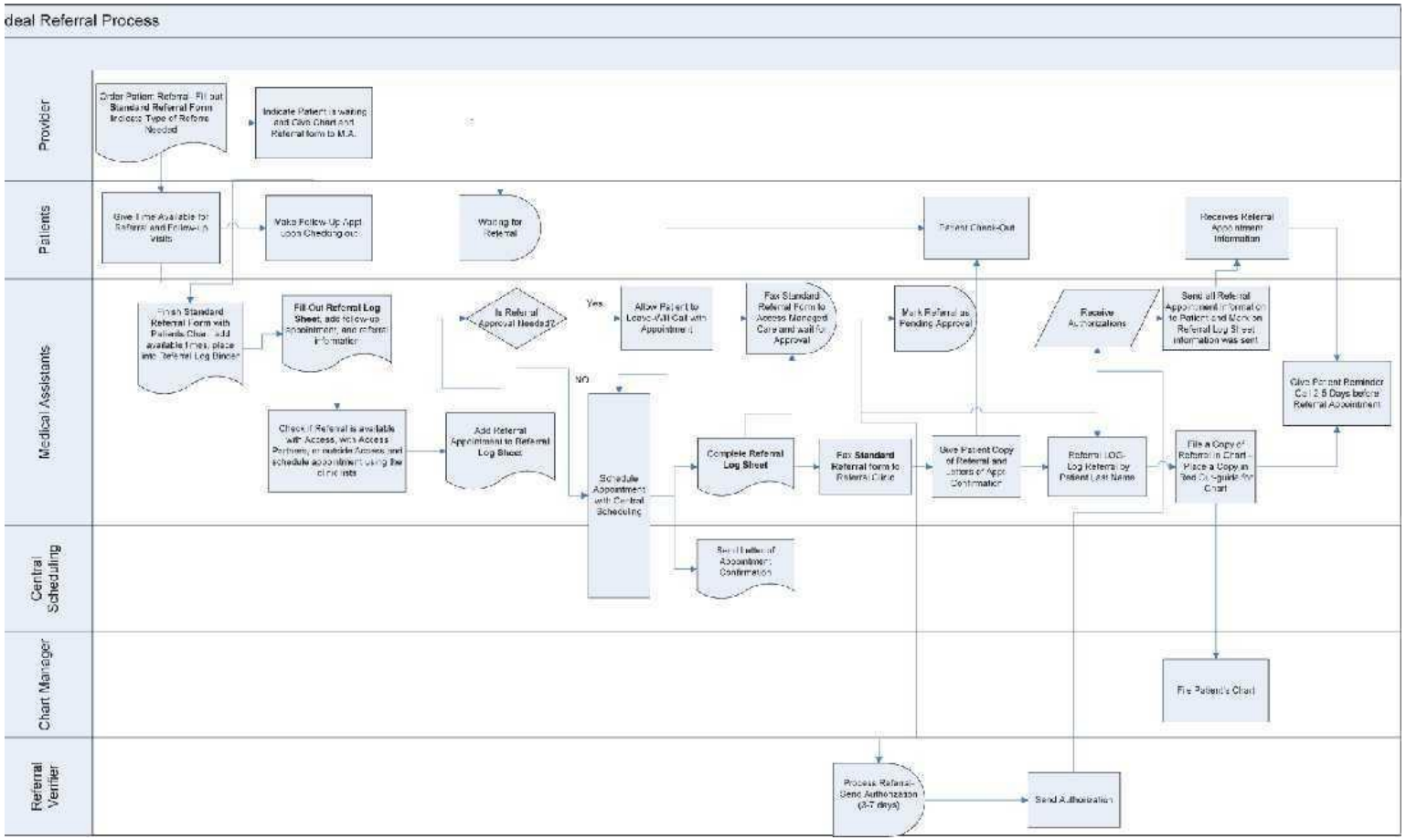
Brandon Family Health Center

Genesis Center for Health and Empowerment

Process Mapping

Research:

- Observations from site visits
- Speaking with Bessie Harris from Access whom deals with performance improvement and system redesign
- LEAN principles



State of the Art

Alex Bauer, Ryan Strand, Christopher Heppel, Christine Ly,
Rafal Stawarz

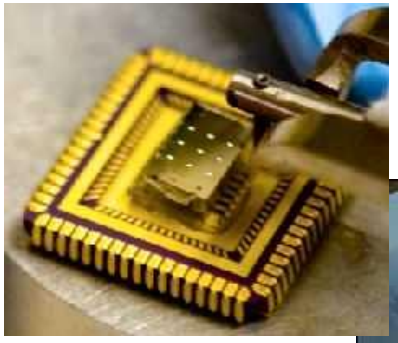
Objective

Research and discover current and emerging technologies in the field of community health care. (Sustainable technology, Medical technology, Infection control, Information technology)

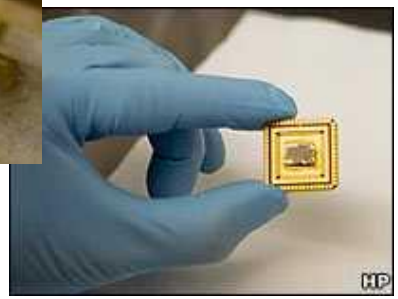
Deliverables

A presentation with the pro's and con's of each chosen technology and an explanation of how it works in a Health Care facility.

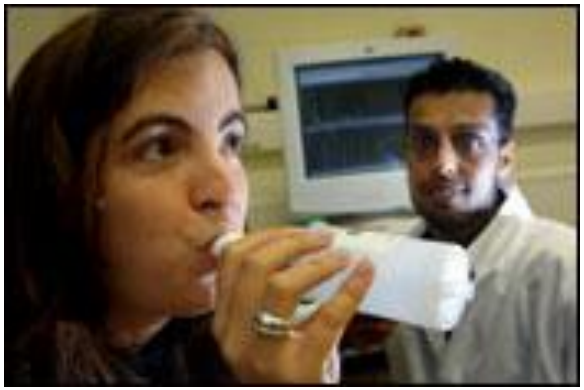
Medical Technology



Medicine delivery
through HP Patches



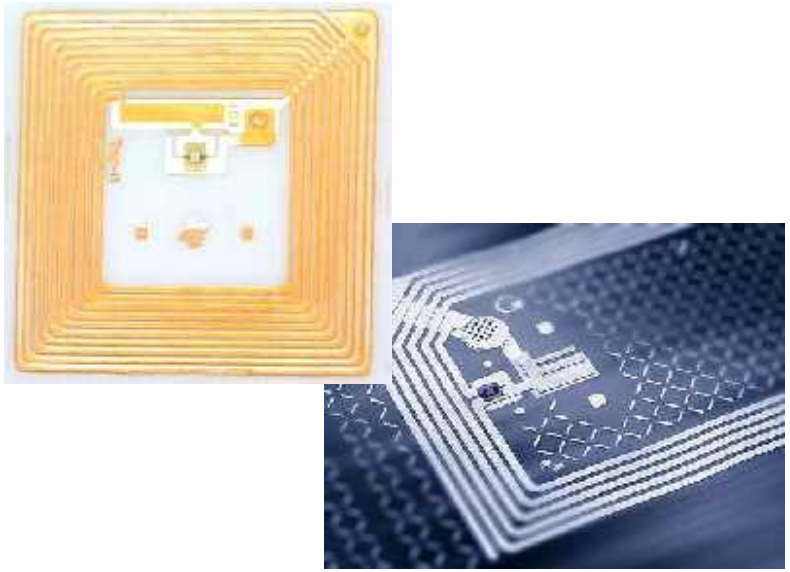
Aerosol Vaccines



Disease recognition through
the use of a breathalyzer

Information Technology

Electronic Health Record

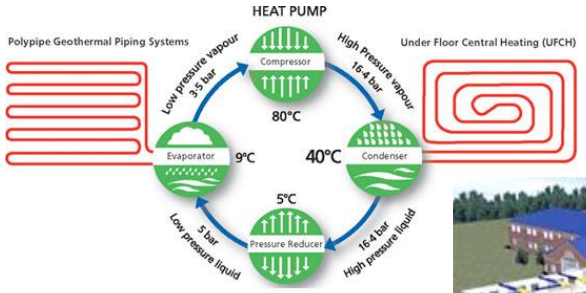


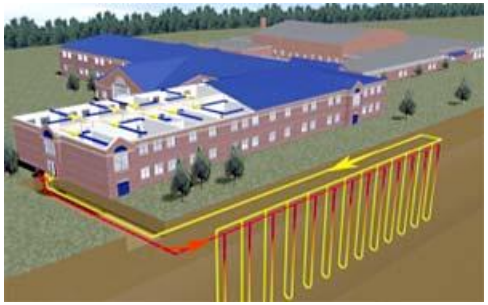
Identification chips to recognize patients and equipment location

Tablet PC’s

Sustainable Technologies

Reduce Energy Use
Through Daylighting



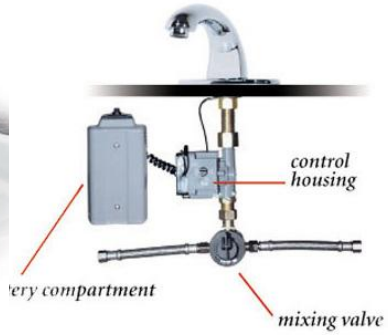


Geothermal Heating/Cooling

Active Lighting

Infection Control

Avoid disease spread though the use of touchless fixtures



Phase one: Dehumidification
Conditioned (dried) air is injected into the enclosure and moisture is removed.

Room Sanitizer

Facility Design

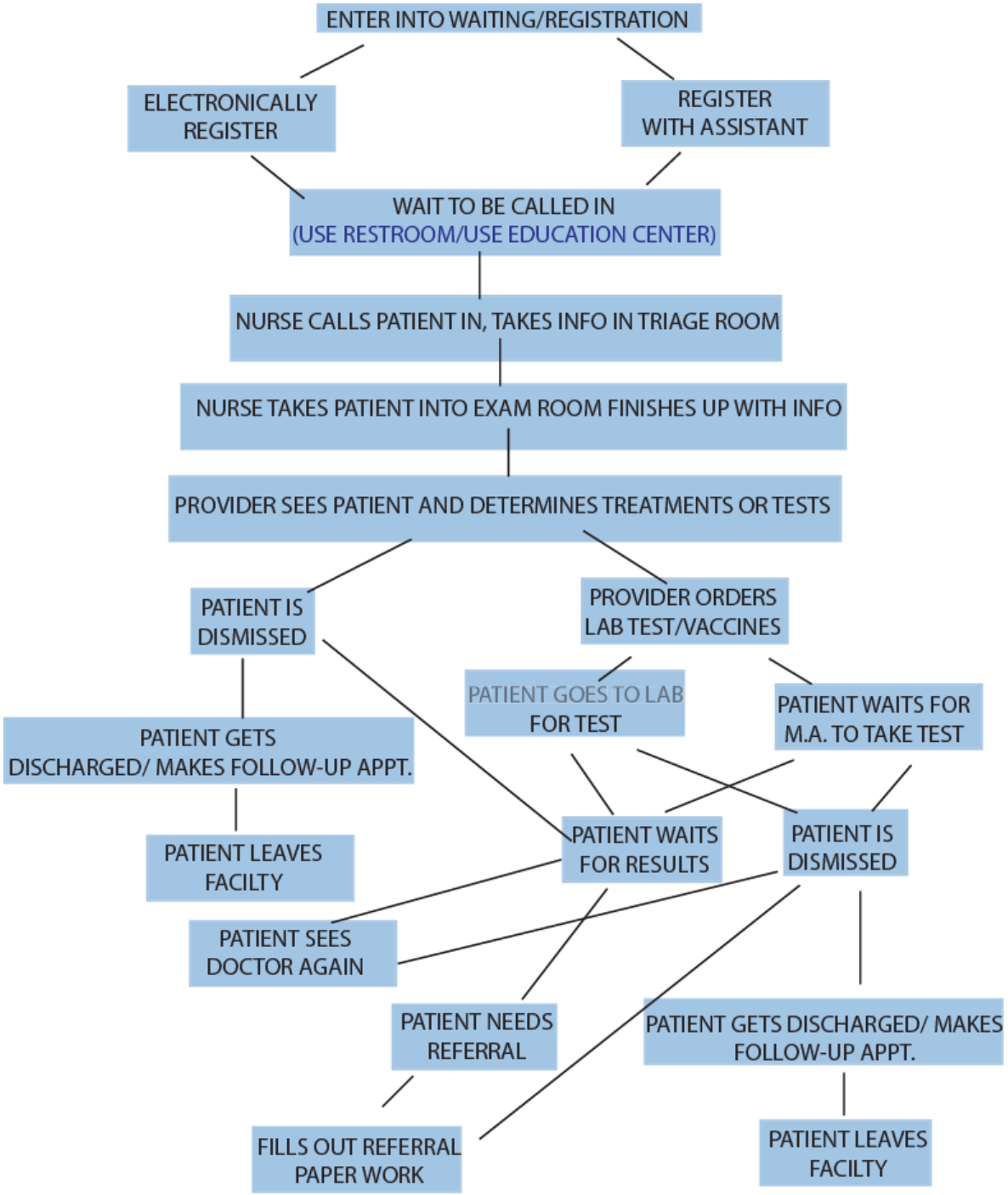
Objectives:

- Create a floor plan for a community healthcare facility
- Fulfill the nine design principles of a future health center into the design

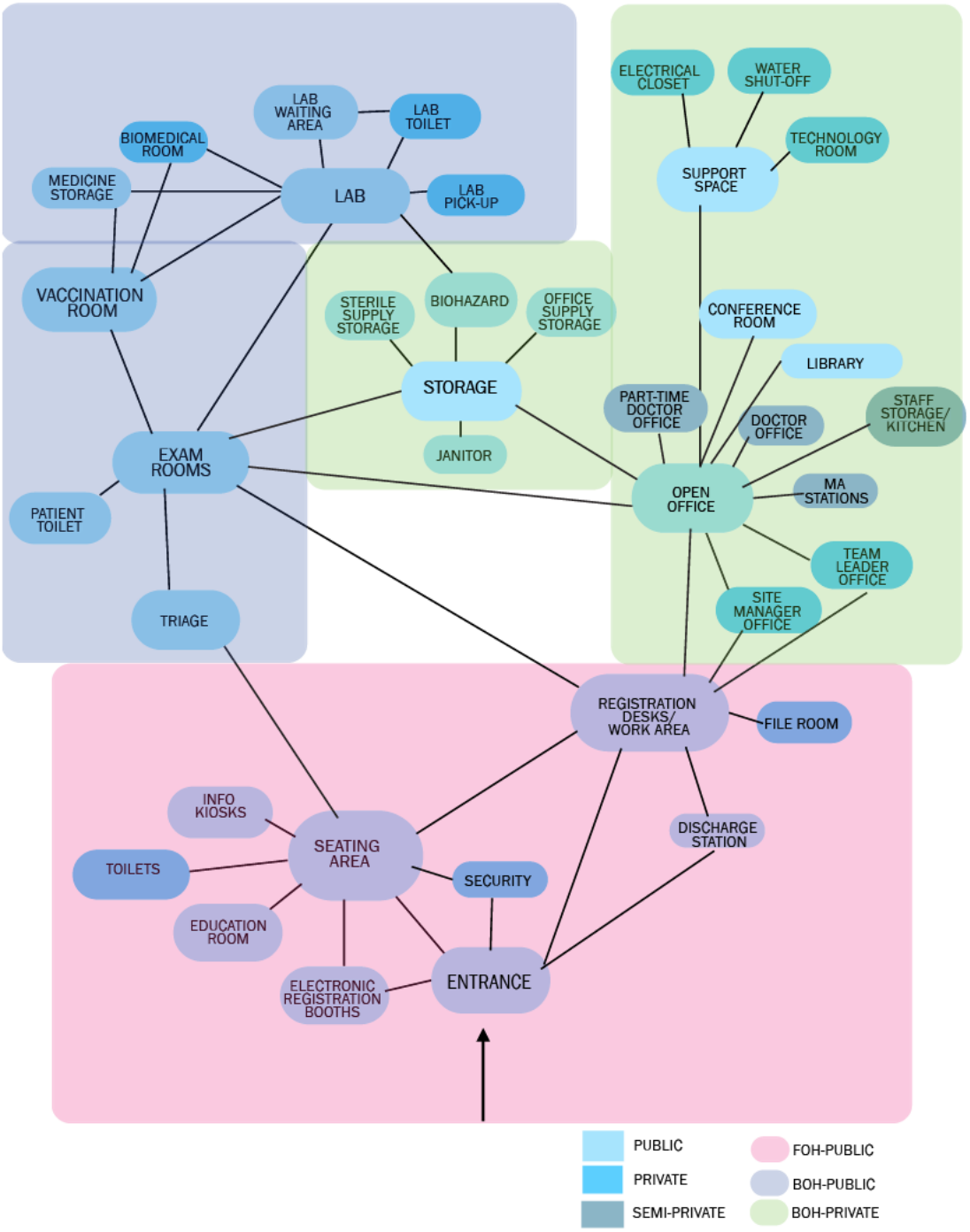
Deliverables:

- Final floor plan with assumptions and objectives clearly noted
- 3d Computer animation and physical models

Patient Flow Chart



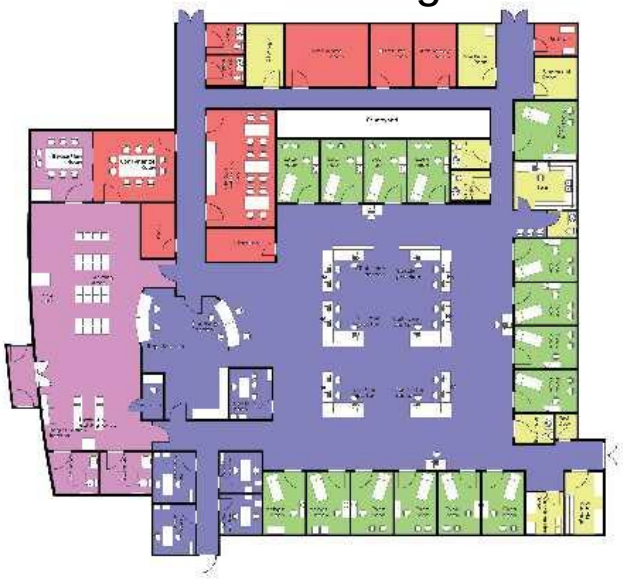
Adjacency Diagram



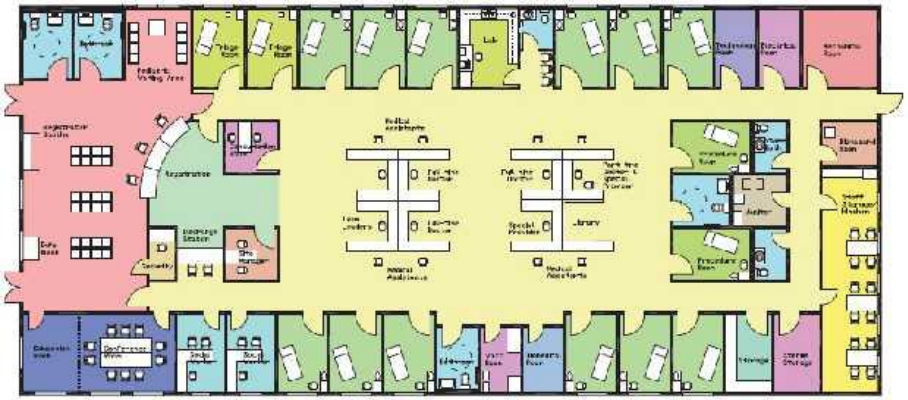
PROGRAM

spaces	sf	quantity			total square footage			rough dimensions
		SM	MED	LG	SM	MED	LG	
Reception/Discharge								
seating area	666 sf	*	*	1	666 sf	666 sf	666 sf	17' x 13'
pediatric seating area	220 sf	*	*	1	220 sf	220 sf	220 sf	22' x 10'
registration booths	11 sf	1	2	4	11 sf	22 sf	44 sf	3' x 3'-6"
info kiosk	13 sf	*	*	1	13 sf	13 sf	13 sf	4'-6" x 3'
security	35 sf	*	*	1	35 sf	35 sf	35 sf	7' x 5'
discharge station	30 sf	*	*	1	30 sf	30 sf	30 sf	5' x 4'-6"
registration	40 sf	*	2	4	40 sf	80 sf	120 sf	3'-6" x 5'
toilets	125 sf	*	2	3	125 sf	250 sf	375 sf	12'-2" x 10'
technology room	120 sf	*	*	1	120 sf	120 sf	120 sf	10' x 12'
education room	200 sf	*	*	1	200 sf	200 sf	200 sf	20' x 10'
total					*1352 sf*	1528 sf	*1737 sf*	
Exam								
exam rooms	150 sf	6	12	24	900 sf	1800 sf	3600 sf	10' x 15'
open office		*	*	1				
triage room	150 sf	*	2	2	150 sf	300 sf	300 sf	10' x 15'
moveable MA stations	4 sf	4	5	10	16 sf	20 sf	40 sf	2' x 2'
storage	135 sf	1	1	1	135 sf	135 sf	135 sf	9' x 15'
sterile storage	135 sf	1	1	1	135 sf	135 sf	135 sf	9' x 15'
patient toilet	63 sf	2	2	2	126 sf	126 sf	126 sf	9' x 7'
janitor	63 sf	*	*	1	63 sf	63 sf	63 sf	9' x 7'
vaccination room	120 sf	1	1	1	120 sf	120 sf	120 sf	9' x 10'
medicinal storage	30 sf	1	1	1	30 sf	30 sf	30 sf	5' x 6'
biohazard room	80 sf	1	1	1	80 sf	80 sf	80 sf	8' x 10'
biomedical room	100 sf	1	1	1	100 sf	100 sf	100 sf	10' x 10'
total					*1855 sf*	*2921 sf*	*4129 sf*	
Laboratory								
lab	167 sf	1	1	1	167 sf	167 sf	167 sf	14'-6" x 11'-6"
lab toilet	63 sf	1	1	1	63 sf	63 sf	63 sf	9' x 7'
waiting area	63 sf	*	*	1	63 sf	63 sf	63 sf	9' x 7'
sample pick-up		1	1	1				
total					*293 sf*	*293 sf*	*293 sf*	
Referral/Offices								
team leader	120 sf	0	*	2	0	120 sf	240 sf	10' x 12'
site manager	120 sf	*	2	2	120 sf	240 sf	120 sf	10' x 12'
full-time doctors	120 sf	*	4	8	120 sf	840 sf	960 sf	10' x 12'
part-time doctors	120 sf	*	*	1	120 sf	120 sf	120 sf	10' x 12'
special providers	120 sf	0	*	2	0	120 sf	240 sf	
special providers PT	120 sf	*	*	1	120 sf	120 sf	120 sf	
referral	100 sf	*	2	4	100 sf	200 sf	400 sf	
phone/appts	100 sf	*	2	4	100 sf	200 sf	400 sf	
MA stations	90 sf	4	5	16	360 sf	720 sf	1440 sf	9' x 10'
conference room	800 sf	*	*	1	800 sf	800 sf	800 sf	40' x 20'
staff storage/kitchen	300 sf	*	*	1	300 sf	300 sf	300 sf	30' x 10'
library	100 sf	*	*	1	100 sf	100 sf	100 sf	10' x 10'
social workers office	100 sf	*	2	2	100 sf	200 sf	200 sf	10' x 10'
total					*2040 sf*	*3960 sf*	*5620 sf*	
Support Spaces								
electrical room	120 sf	*	*	1	120 sf	120 sf	120 sf	12' x 10'
mechanical room	250 sf	*	*	1	120 sf	120 sf	120 sf	25' x 10'
staff toilets	63 sf	2	2	2	126 sf	126 sf	126 sf	9' x 7'
total					*496 sf*	*496 sf*	*496 sf*	
TOTAL					6036 sf	9138 sf	12275 sf	

Hamburger



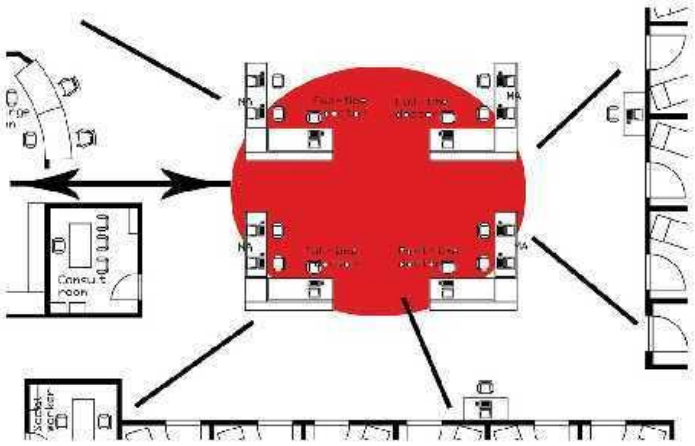
Hotdog



9 Design Principles

1. Open Communication
2. Healing Environment
3. Scalability of Design
4. Pediatric/Geriatric Care
5. State of the Art Technology
6. Sustainability
7. Privacy
8. Security
9. LEAN Principles

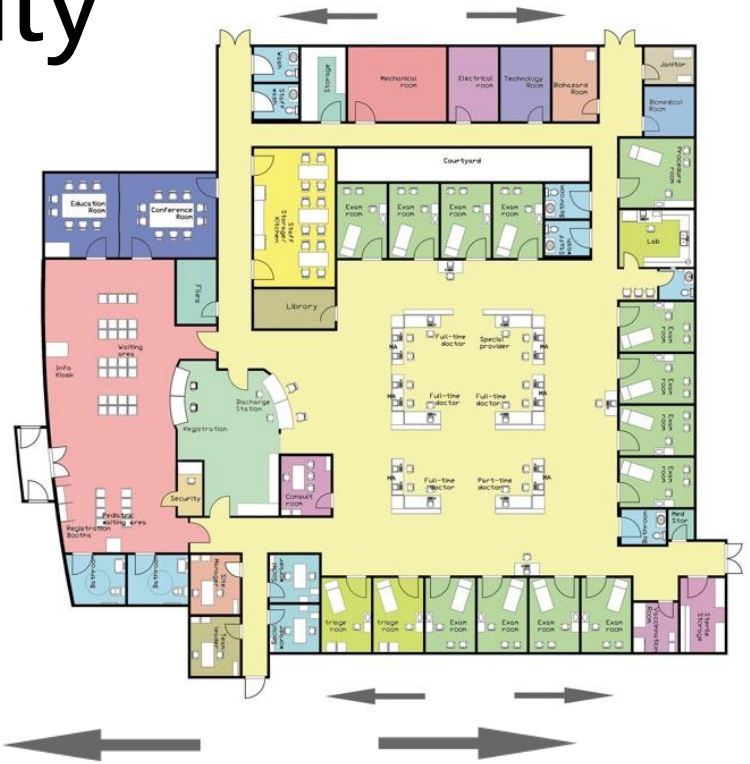
Open Communication

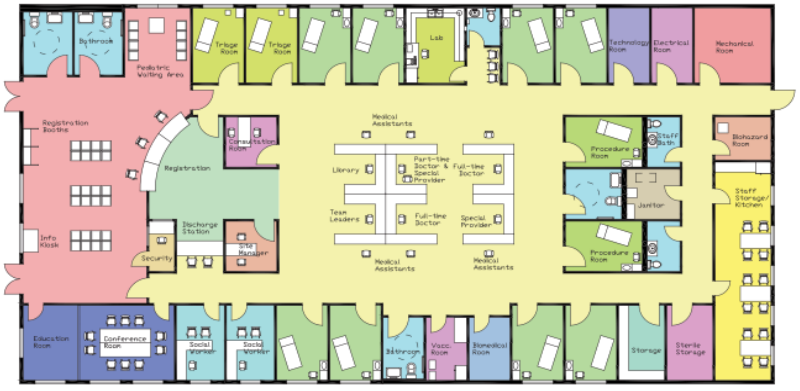


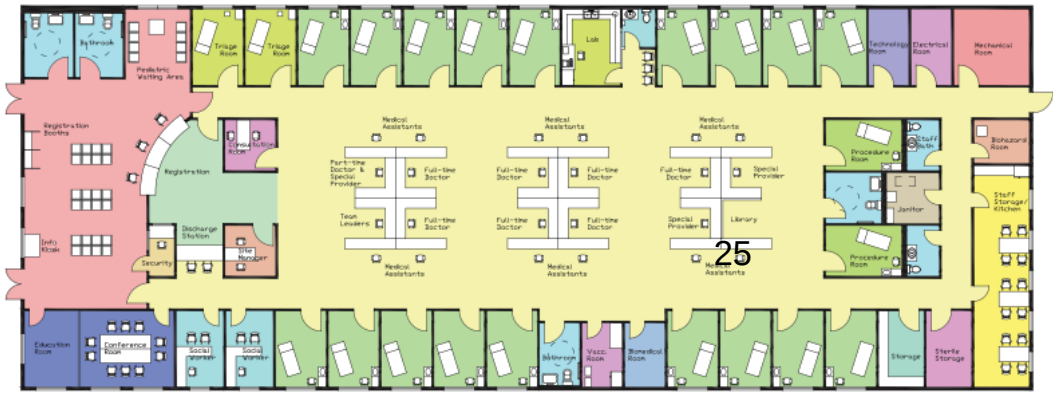
CENTRAL WORK AREA IN EXAM AREA

Healing Environment

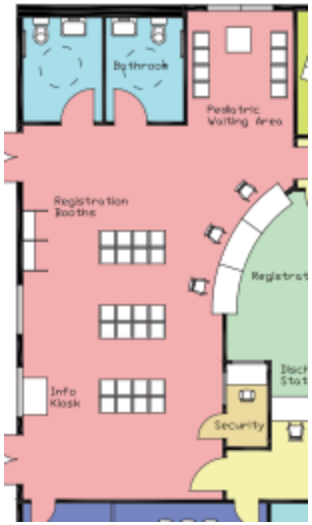
Scalability



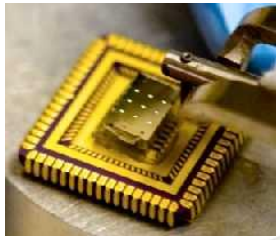




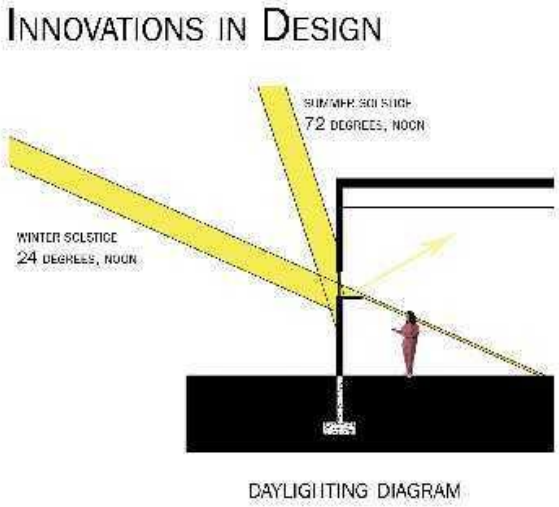
Pediatric/Geriatric Care

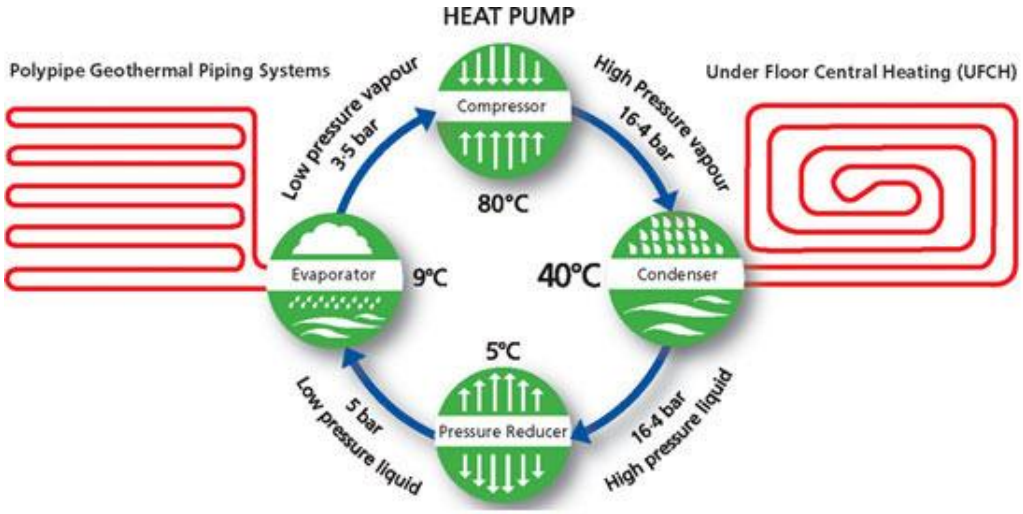


State of the Art Technology



Sustainability

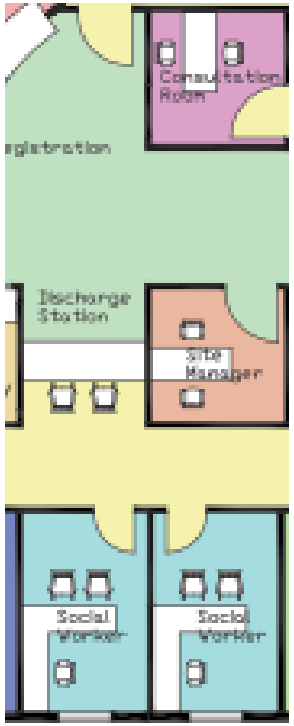




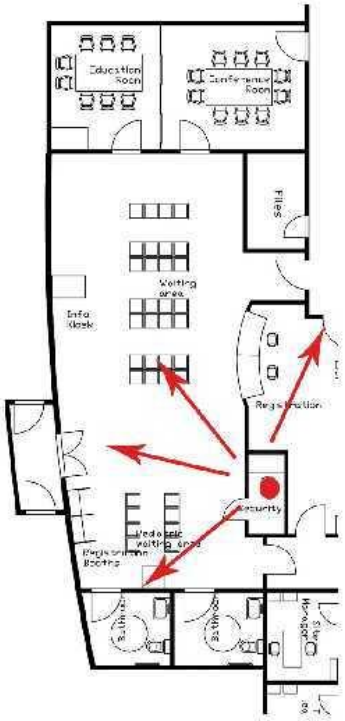
Privacy

Patient privacy

Private consultation rooms

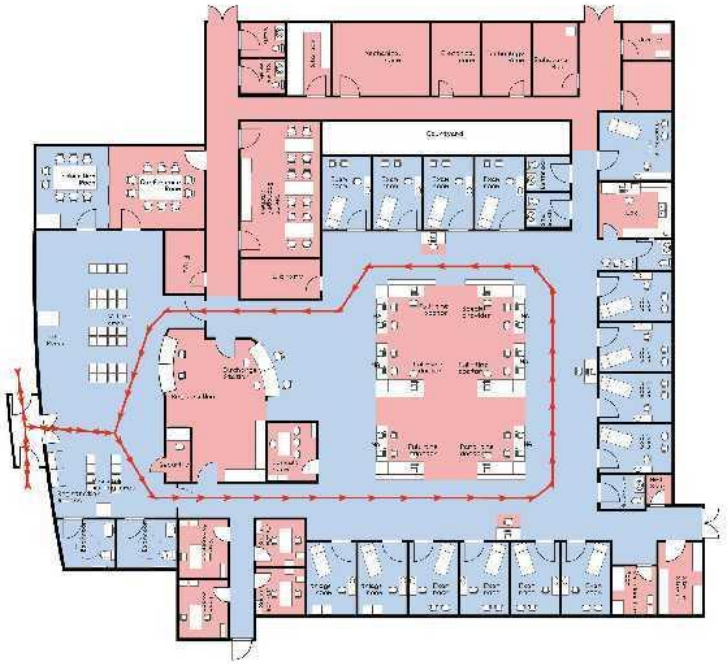


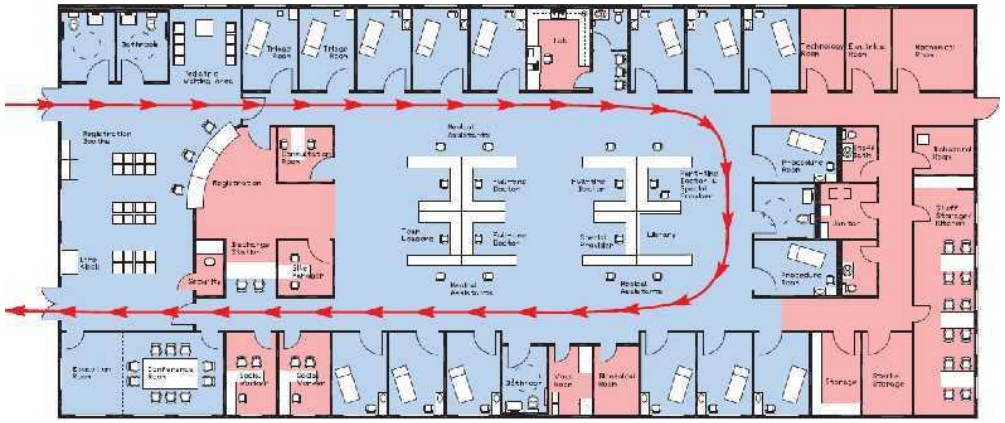
Security



SECURITY VIEW DIAGRAM

LEAN Principles





IPRO 340

Design of a Green Community Health Center of the Future

IPRO 340 It takes a team INTERPROFESSIONAL PROJECTS PROGRAM

TEAM

Corina Abrudan
Civil Engineering
Alex Bauer
Civil Engineering
Larissa Groszko
Architecture
Chris Heppel
Architecture
Christine Ly
Architecture
Jeremy Moore
Architecture
Jessica Patera
Architecture
Rafal Stawarz
Architecture
Ryan Strand
Computer Engineering
Dan Tian
Biomedical Engineering

AKNOWLEDGEMENTS

access community health network

Steven Glass
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Bessie Harris
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Skidmore, Owings & Merrill LLP

Matthew Miller, AIA
Architect

ILLINOIS INSTITUTE OF TECHNOLOGY

Daniel Ferguson
Professor

Questions and Comments?