Collaboration: From User Based Design to Co-Design

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How I got involved with Design and Aging

- A's for Aging
- Autonomy
- Authenticity
- Activism
- Aesthetics
- Acknowledgment
- Acceptance
- Assistance
- Affordability

Collaborative or Participatory Research and Design: Four Case Studies

Participatory Research (PR)

- Also known as action research and participatory action research.
- Reflects the many different methodologies used in this type of research.

John Collier, US Commissioner of Indian Affairs, 1933 - 1945, was the first to talk about collaborative research that generated action-oriented knowledge

Kurt Lewin, in 1946, coined the term participatory research. “…..used the approach to investigate social practices such as factory production, racial discrimination, and food buying habits. In the 1940s. Lewin talked about a spiral of cycles of planning, acting, observing, and reflecting, emphasizing the value of involving participants in each step.”[1]

[1] Wigmore, D. pg 3 New Solutions15(1), 2005

Wallerstein, based on her classic work in community based participatory research (PR), describes several explicit assumptions:

- PR and collaboration means genuine partnership, starting from issues important to the community….

- PR means starting from and building on community strengths such as worker knowledge about their workplace, union stewards expertise, supportive union or management-union structures

- PR means knowledge for action and social change, not just knowledge for publication, but how to improve workers' lives on the job [2]

[2] Wallerstein, N. pg.48 New Solutions15, (1), 2005

Case One
The “Muni” Health and Safety Study

This study was based on a review of 1,000 mandated medical exams of San Francisco Municipal Railways (Muni) Transit operators.

The MUNI Health and Safety Study is the largest and longest study of transit worker health and safety. The project began in 1978, when the San Francisco Municipal Railway (MUNI) awarded a contract to San Francisco General Hospital to perform the DOT mandated biennial medical exams.

- Initial review of the first 100 exams suggested that there might be a high rate of hypertension.
- An ongoing review was initiated. By the first two year cycle of exams, the initial observations were confirmed.

- In ongoing discussions with both transit operators and management, there was consensus from both groups that this finding was related to stress.

To facilitate the study a working committee was established

Working Committee

Members:

- Active transit operators
- Union president
- Bus division supervisor
- Head of human resources
- Research staff

The Working Committee was critical for:

1. The researchers' understanding of a complex work environment
2. Assuring that the research questions are relevant
3. Assuring that the research methodologies were appropriate
4. Facilitating access to the work environment - accommodating the environment for specific research needs

The Working Committee was critical for:

5. Keeping researchers abreast of significant changes
6. Informing work force of ongoing activities of the project
7. Recruiting participants for research projects
8. Analyzing research findings in terms of potential interventions

The Working Committee was critical for:

9. Recommending interventions
10. Creating an awareness of psycho-social factors affecting worker health and safety
11. Creating a cadre of workers who were familiar with the scientific literature relevant to their occupational health and safety
12. Negotiating health and safety language into labor contracts

The Working Committee was critical for:

13. Creation and training of worksite health and safety committees
14. Labor representatives promoting occupational health and safety at regional, national. and international levels
15. Creating amongst some senior management staff advocacy for OH&S

Research Efforts and Publications

The Muni Health and Safety Study has produced more than 40 peer reviewed articles and 8 doctoral theses based on the broad based epidemiological studies conducted over 25 years. They address work related hypertension, stress, musculo-skeletal problems, alcohol use and racism. In addition, research efforts and publications have been directed towards objective measures of stress, impact of work on family life, and policy issues on mandatory drug testing.

Case 2:

Collaboration for Development of User - Based Design to Prevent Occupational Exposure to Blood

The TDICT Project

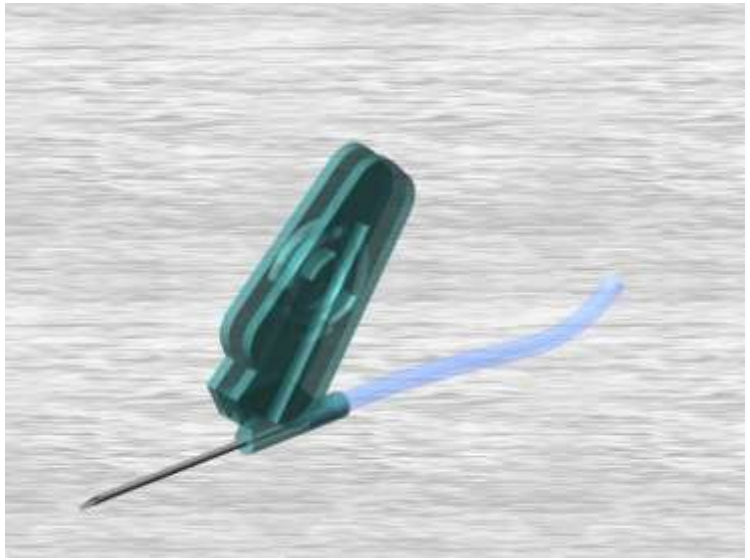
Needle sticks and other sharps injuries

- 800,000 sharps injuries annually in the United States prior to use of protective devices mandated by current OSHA regulations
- Most common cause of occupationally acquired Blood Borne Pathogens (BBPs)-hepatitis B, C, and HIV
- 250 deaths annually from occupationally acquired HepB in US prior to mass vaccination
- Increasing occupational exposure to Hepatitis C

1988

Lecture to Stanford University Product Design Program, Engineering School on the need for safety devices to protect healthcare workers from needle sticks

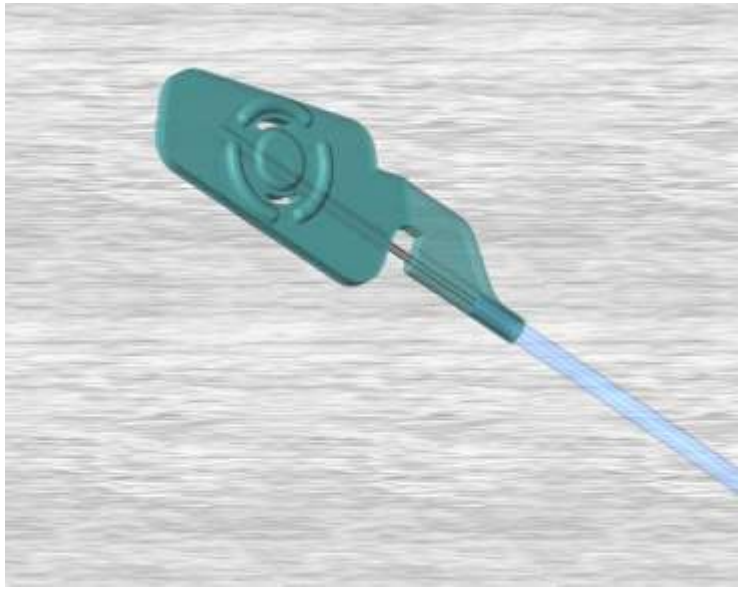
Safety Butterfly IV Needle, 1988



Designed by Steven Schoenberg, Stanford University medical student and graduate student in product design engineering

USER CREATED DESIGN

Safety Butterfly IV Needle

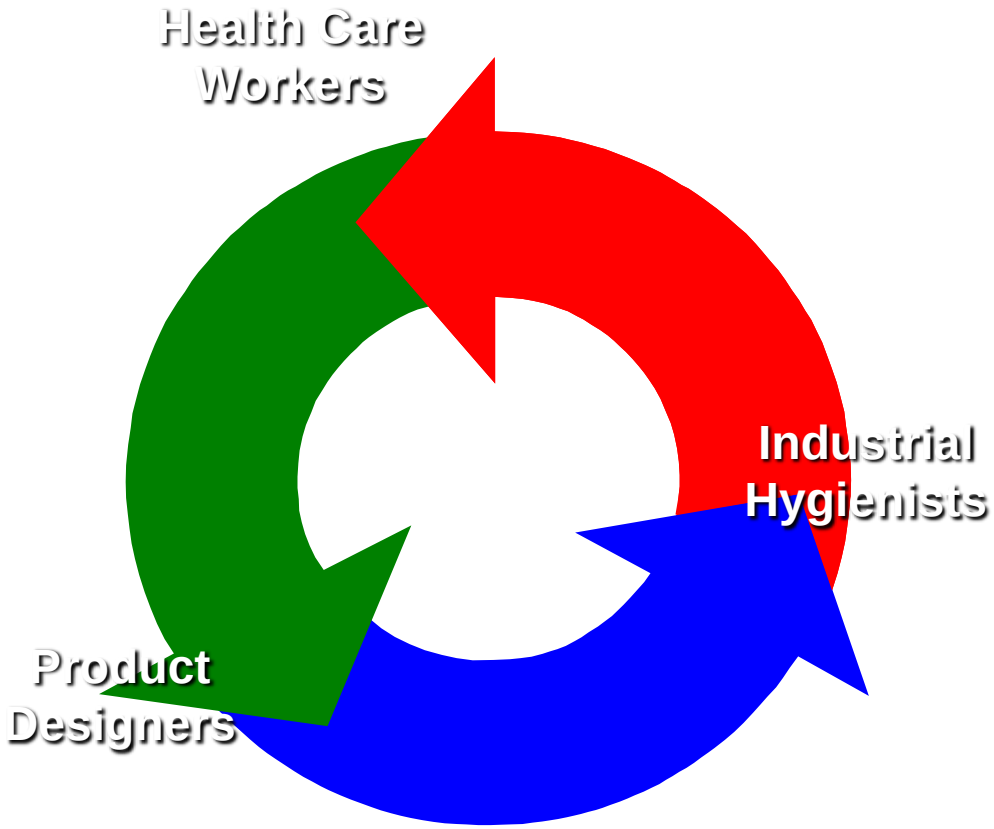


Safety shield engaged single handedly as withdrawn from vein and closes over needle

1990

NIOSH funded the TDICT project
(funding continued until 2006)

The TDICT Project is a collaborative effort of health care workers, product designers and industrial hygienists dedicated to preventing exposure to blood borne pathogens through the design and evaluation of control technology.



Outcomes Include:

- Criteria for safety feature of sharps devices
- Performance standards
- Systematic simulation methods
- Task analysis instrument
- Systematic user-based methods for evaluation, selection, and implementation of safer medical devices

ALL THESE INSTRUMENTS WERE DEVELOPED FOR FRONTLINE HEALTHCARE WORKER USE


PROTECTOR


FLANGES
HINGE

“Design Evaluation” Course

- 10 front line health care workers per course-credit given for continuing education
- A 250 page text include principles of Industrial Hygiene, Product Design, and Advanced Infection control
- Guest lecturers supplement the text
- In addition to the lectures, class time includes extensive creative problem solving, guided product testing, discussion, and “take to work” assignments

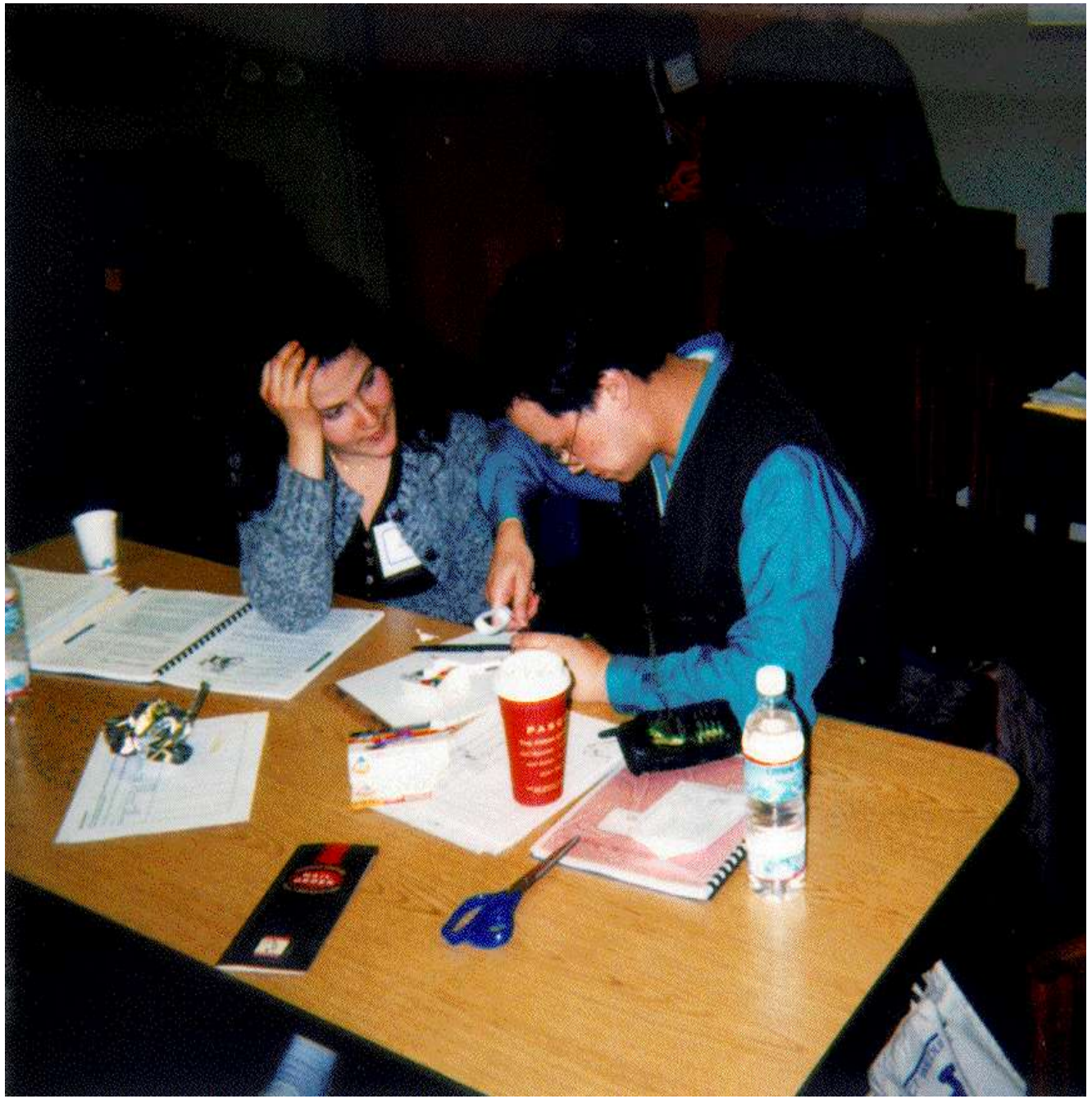
Take to Work Assignments

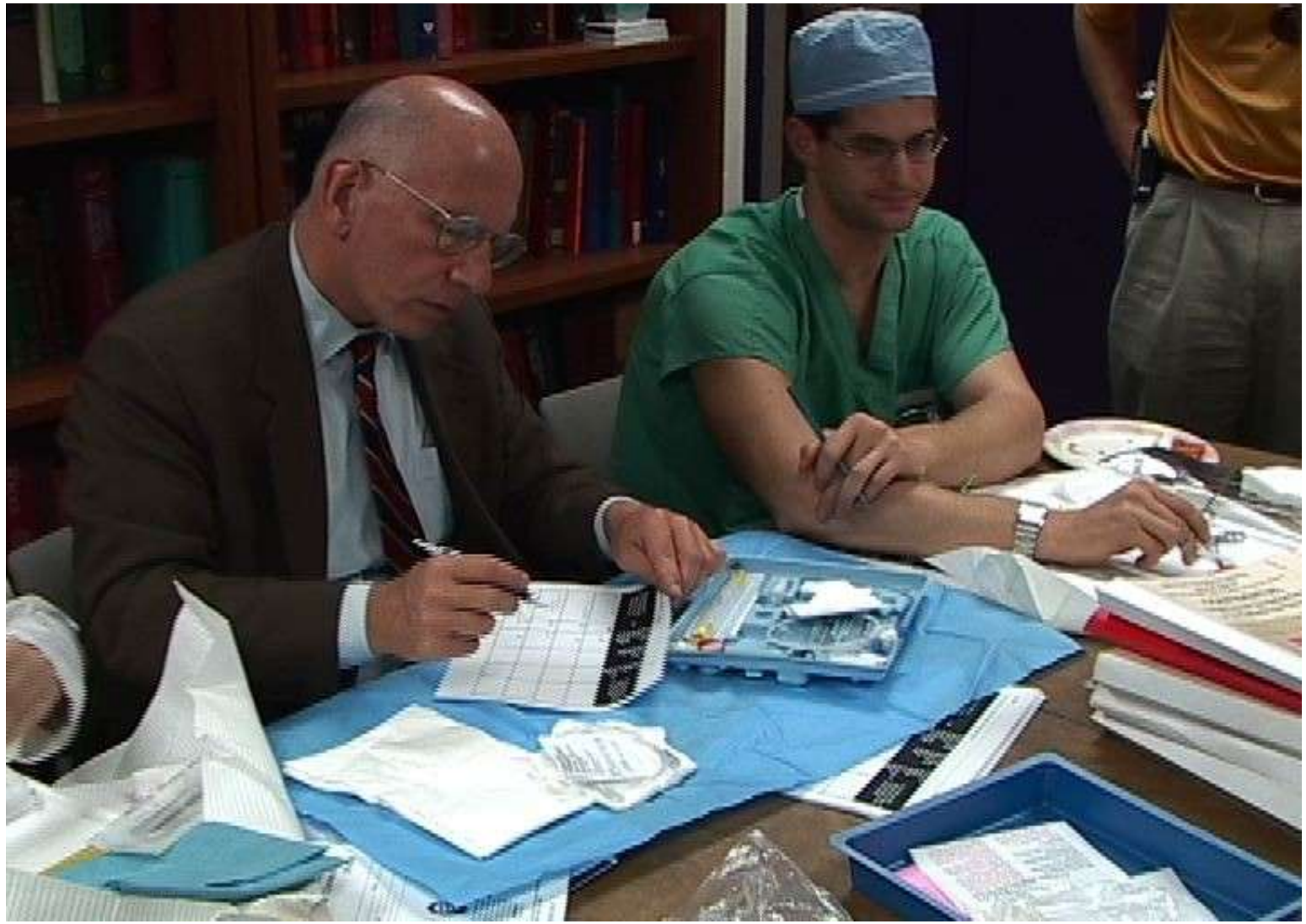
- Front line user assessment of sharps:
- What
- When
- Where
- Problems / Barriers

Illustrated the wide variations of use

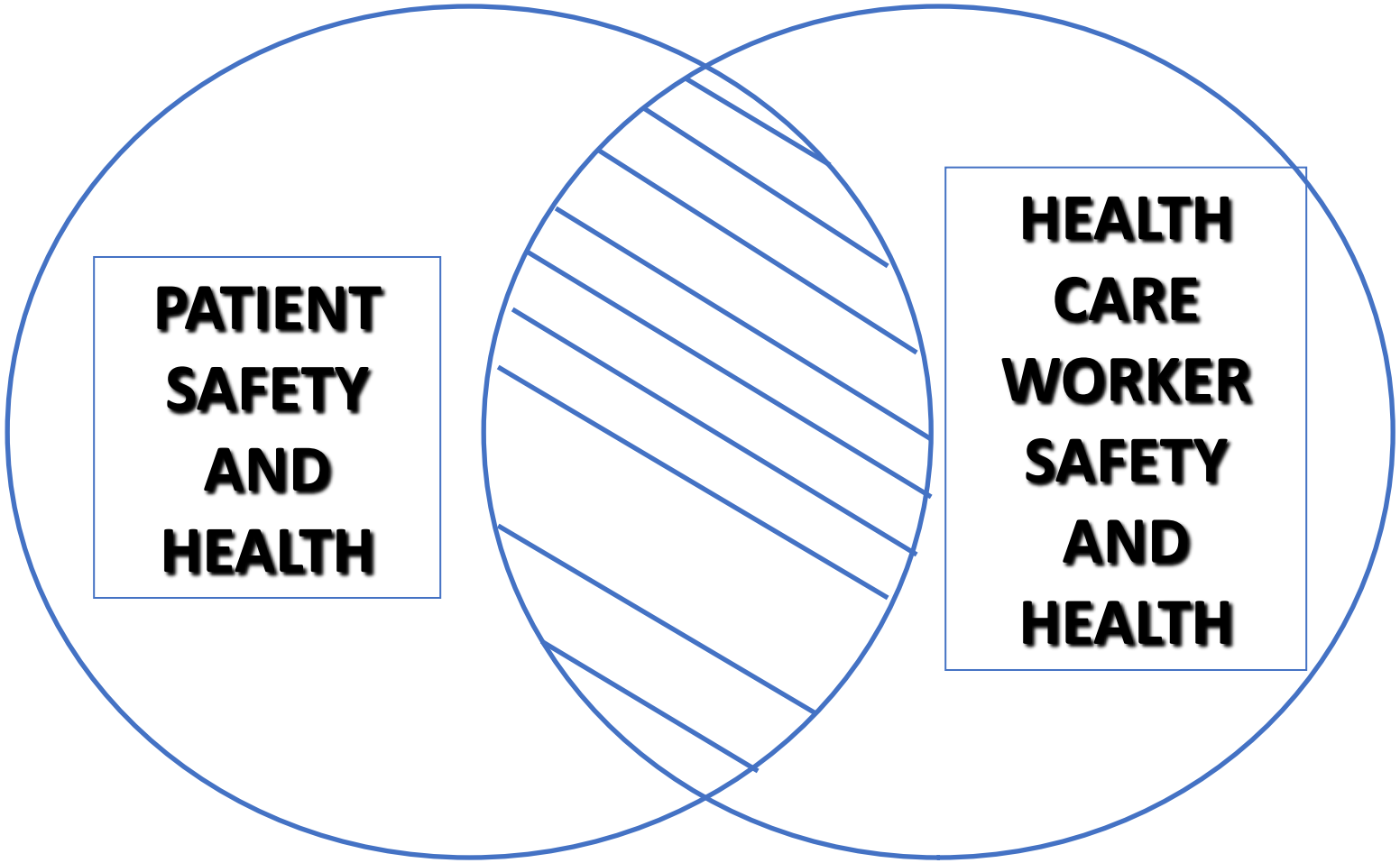
“Design Evaluation” Course <u>Success</u>

- “The course is so valuable. Without it, I would never have been able to explain to you what’s wrong with this piece of equipment.”
- Mary McGee, RN
- Labor & Delivery, SFGH





Interrelationship between Patient and Healthcare Worker Health and Safety



Incorporating HCW Expertise into all Phases of Design Development is Critical for Patient and HCW Safety.

Case 3:
Navigating the Human Path

Navigating the Human Path

An Intergenerational Design Studio on Aging and the Lifespan, 1/20/16 - 5/11/16

Dan Gillette, June Fisher & Patricia Moore

CITRIS

JACOBS INSTITUTE FOR DESIGN INNOVATION
COLLEGE OF ENGINEERING, UC BERKELEY

Navigating the Human Path
Watch the video (2:15)

https://www.youtube.com/watch?v=DVitz7i55D4&feature=youtu.be

Case 4:
Three Pounds of Tomatoes / City Cart


PARIS
Tenth
Art
ember

City Cart Video (2:04)

https://www.youtube.com/watch?v=YN6oiMFH_1o&t=35s

Morton Kesten Universal Design Competition 2016, USC

- **1st Place Winner**
  MODU
  Lamar Pi
  San Francisco State University
  Industrial Design Program

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