

Project Design Specifications

#43- Obstetric Belly Band

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Client: Dr. John Webster

Advisor: Professor Willis Tompkins

Function:

Our mission is to redesign an obstetric belly band so that it has more rigidity in the transverse direction and will not roll up during use. Obstetric belly bands are placed around the abdomen, during delivery, to keep in place the tocometer and the ultrasound transducer.

Client Requirements:

- Cost effective
- Comfortable
- Effective

Design Requirements:

1) Physical and Operational Characteristics

a) *Performance requirements*

- i. To hold the tocometer and ultrasound transducer in place during labor
- ii. Breathable, durable fabric that ensures comfort for the user
- iii. Must withstand a damp environment
- iiii. Must withstand stress and movement
- iv. Can be adjusted to change location and angle

b) *Safety*

- i. Can be easily removed

c) *Accuracy and Reliability*

- i. Must secure instruments and allow for adjustments when necessary

d) *Life in Service*

- i. 1-2 days

e) *Shelf Life*

- i. 5-10 years

- f) *Operating Environment*

- i. Patient hospital rooms

- g) *Ergonomics*

- i. Easily put on

- h) *Size*

- i. 36-55" width

- i) *Weight*

- i. Less than 1 pound

- j) *Materials*

- i. No latex

- ii. Elastic

- iii. Breathable

- iv. Quick drying

- k) *Aesthetics*

- i. Pleasing to the eye

2) Production Characteristics

- a) *Quantity*

- i. One model

- b) *Target Product Cost*

- i. under \$5

3) Miscellaneous

- a) *Standards and Specifications*

- i. Must be tested to ensure patient comfort and product performance

- b) *Customer*

- i. Medical schools

- ii. Hospitals

- c) *Patient-related concerns*

- i. Skin irritation

- ii. Discomfort (bunching of fabric)

d) *Competition*

- i. Feta Med

- ii. Cooper Surgical

- iii. Pedi Corporation