Milestone 2 (Team) – Cover Page

Team Number: 9

Please list full names and MacID's of all *present* Team Members

Full Name:	MacID:
Marco Tan	tanm27
Aditi Srinivas	srinia14
Aleen Al Barbarawi	albarbaa
Josiah Kim	Kim190

Any student that is ***not*** present for Design Studio will not be given credit for completion of the worksheet and may be subject to a 10% deduction to their DP-1 grade.

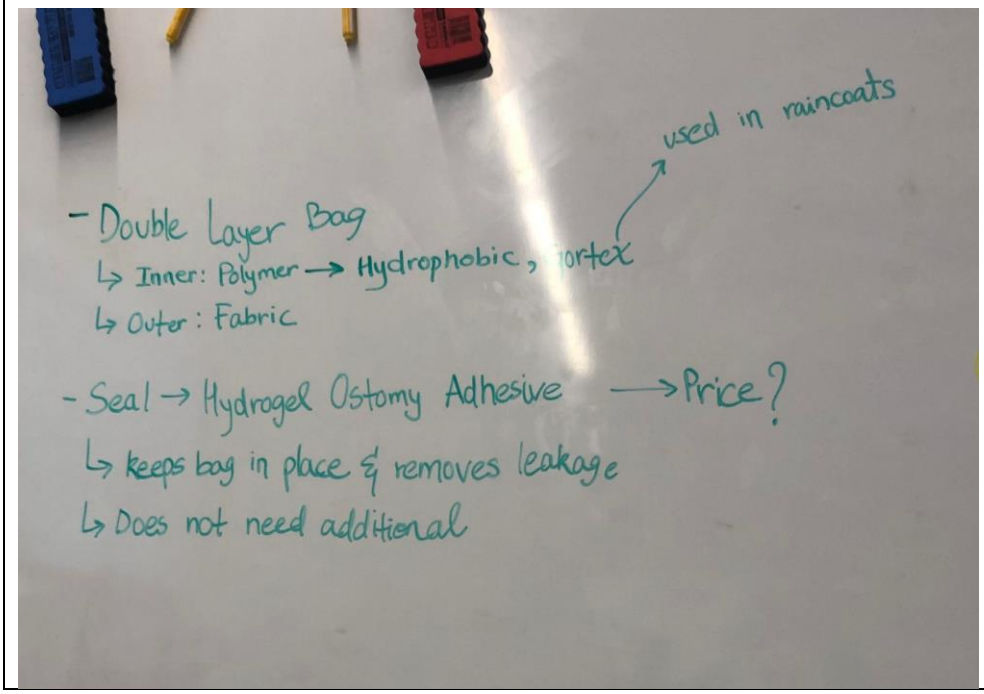
MILESTONE 2 (STAGE 3) – CONCEPT GENERATION

Team Number: 9

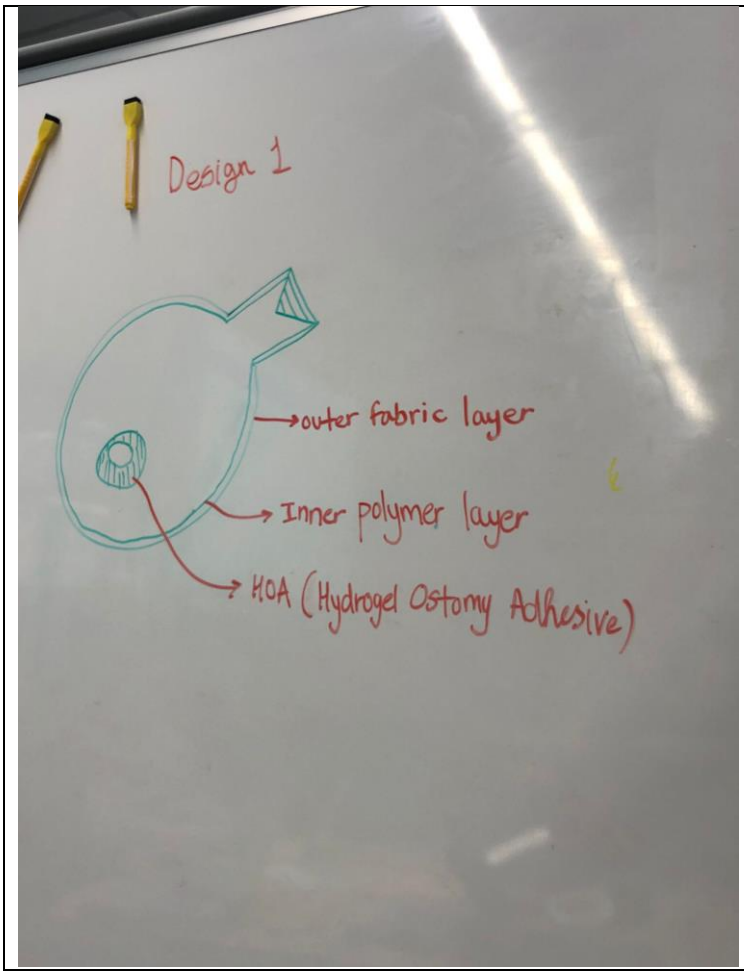
As a team, generate several different means for solving your assigned design challenge.

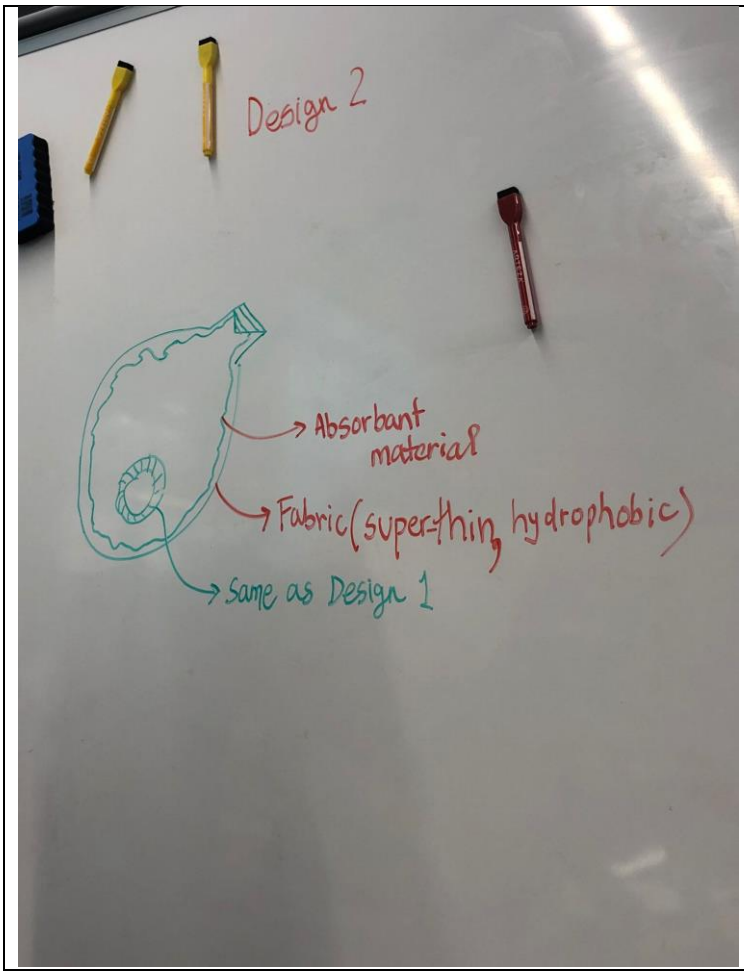
1. Generate ideas that either includes or builds on each team members preliminary list of ideas (i.e., Stage 2)
    - You can complete this activity by any means you wish
        - e.g., sheet of paper, notepads and sticky notes, whiteboard, etc.
    - Document this process on the following pages
2. Generate a minimum of two (2) concept solutions
    - Each concept solution should be in the form of a clearly labelled sketch or schematic
    - Document this process on the following pages

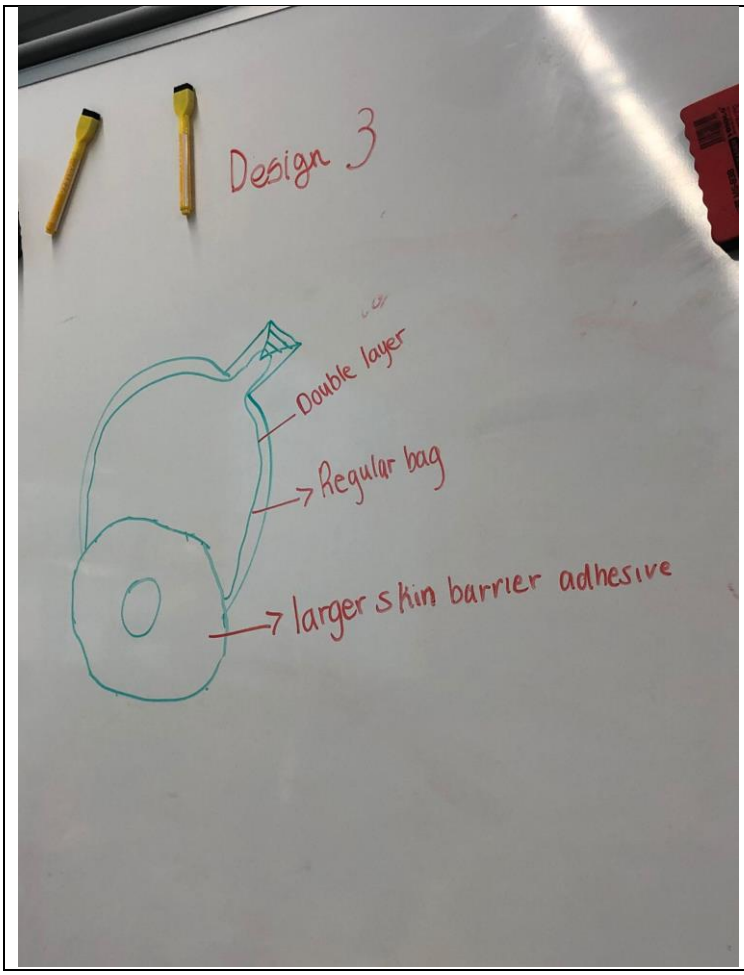
Team Number: 9



Team Number: 9


Design 1
outer fabric layer
Inner polymer layer
HOA (Hydrogel Ostomy Adhesive)


Design 2
Absorbant material
Fabric (super-thin, hydrophobic)
Same as Design 1


Design 3
Double layer
Regular bag
larger skin barrier adhesive

MILESTONE 2 (STAGE 4) – GROUP DISCUSSION

Team Number: 9

As a team, discuss each concept generated in Stage 3. Document your group discussion in the space below (you are encouraged to use more than one page).

Questions to think about:

→ What are the *advantages* and *disadvantages* of each concept?
→ Do the concepts align with the *objectives* and *constraints* from **Milestone One**?
→ Do the concepts address the need statement?

Advantages and Disadvantages

- Design 1:
  Advantages:
  - *Simple revisions allow for improved storage of fluids in the bag through the polymer.*
  - *Outer fabric layer provides basic sound proofing for a traditionally noisy bag.*
  - *HOA provides much in durability, mechanical softness, and leak prevention in the skin barrier.*

  Disadvantages:
  - *HOA may be too expensive to produce for a disposable design.*
  - *May potentially be too big and inflexible due to the stacked bag layers, reducing performance in an active lifestyle.*
  - *Production cost due to more complex ostomy bag materials may outweigh longevity and durability in terms of positives in solving patient's needs.*

- Design 2:
  Advantages:
  - *Addresses the problem of high output failing the seal.*
  - *Would make output much more manageable, especially very watery outputs.*
  - *No significant cosmetic changes.*

  Disadvantages:
  - *The absorbent material might make the bag heavy which will be disturbing for the patient.*
  - *Depending on absorbent polymer used, may increase the price but not drastically.*
  - *The design has problems with releasing the absorbed water.*

- Design 3:
  Advantages:
  - *It is the simplest solution to create.*
  - *No novel materials are required.*
  - *Costs will not significantly rise.*

  Disadvantages:

- *Does not address the root problem of high output ruining the seal, it only makes it potentially last longer because more adhesive.*
- *A larger skin barrier patch may effect cosmetic appearance.*

Concept Alignment with Milestone One Objective and Constraints

- *Design 1: While more performant (noise-reduction, leakage mitigation), its design contradicts the "expensive" constraint due to the new materials introduced to manufacture these short-use bags (HOA + doubled ostomy bag layers).*

- *Design 2: the bag addresses the problem of high leakage and makes the output much easier however its design cost may increase due to the absorbent polymer used and may not be financially accessible*

- *Design 3: as its more affordable and durable, the design itself does not solve the high frequency of leaks*

Concept addressing need statement

- *Design 1: The bag addresses some elements of the need statement while worsening the problem in other needs for the patient, as outlined in objectives and constraints.*

- *Design 2: This design somewhat meets the need statement. However, it risks being heavy (as it absorbs water) and expensive due to the use of HOA*

- *Design 3: This design addresses the need statement the as it best accounts for the patient's financial situation as well as retain the structure of pouching system that she is already comfortable with.*

*If you prefer, you may document your discussion in a separate document / file / format, take a photo/screenshot and insert it above.

- For multiple photos / screenshots, please copy and paste the above on a new page