MISSION STATEMENT
Our product promotes faster, healthier, and more comfortable healing for a fractured bone. A person would benefit from having the MediWeB because its features help fractures heal faster, healthier, and more comfortably when compared to the bulky, itchy, inaccessible traditional plaster casts. This product’s success will benefit those who seek a better cast, up to 4.4 when compared to the bulky, itchy, inaccessible traditional plaster casts.

CONCEPT SELECTION
- Alter the 4-2-5 activity, the group chose 4 top sketches and named them.
- Each sketch was screened on a number of criteria the group chose.
- The traditional cast was chosen as the standard for comparison, and each cast was rated on a +/− system, depending on if each feature was fulfilled better or worse than the traditional cast.
- The MediWeB had the highest score of +’s, and it was chosen.

CONCEPT GENERATION
- The four designers sketched out two designs each.
- Each paper was passed around, and each person added their own personal touch to each design. This generated 8 designs per person, and a total of 32 sketches.
- Through this method, each designer could see the changes added by the other members, enhancing their own design.

USER NEEDS
- The design keeps the fracture immobilized at the joint.
- The design is water resistant.
- The design promotes circulation.
- The design keeps the bones in the correct healing position.
- The design allows for potential infections to be cleaned and examined.
- The design reduces swelling and inflammation.
- The design utilizes chemoattraction.
- The design provides comfort to the patient.

SPECIFICATIONS
- The rigid Web layer extends 2 inches past the nearest joint.
- XO skeleton is made of waterproof materials.
- Gel beads vibrate at 30-40Hz.
- The Web stabilizes the injury area so that bones do not deviate from 1-2 degrees of normal healing position.
- Removable XO skeleton and Gel Bead layer with transparent fiber netting.
- Refrigeratable Gel bead layer maintains 0 degrees Celsius or lower for 20-30 minutes.
- Capacitative coupling model sends electricity through fracture site at 60Hz.
- Customized form fitting casts are generated for each consumer.
- Design is more lightweight and breathable than the typical plaster cast.

TEST RESULTS
- Measurements will be taken to ensure the design extends 2 inches above the nearest joint.
- The design will be submerged in water for 30 minutes at 75 degrees Fahrenheit.
- Stethoscopes will be utilized to show healthy blood flow patterns.
- X-rays will be used to determine the bone’s alignment throughout the healing process.
- The design is able to be removed.
- Using the design visibly shows a reduction in swelling and redness.
- Voltmeters will be attached so both sides of the Super Patch to ensure currents of 1-10mV/cm.
- Each patient will have exact measurements taken so that the cast fits properly.
- A survey asking patients to rate comfort levels (1-10) of the design rated the MediWeB at an 8.

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FUTURE MODIFICATIONS
- To make the cast cheaper than the traditional plaster cast that costs $2,500 on average, the patient will rent the super patch, so the doctor will not have to purchase it every time, which minimizes cost.
- The outermost layer will be printed from a 3D printer to eliminate manual labor.
- The carbon fiber netting is also inexpensive, costing only about $3 square foot. (OnineFabricsStore.net)
- As new technology develops (for example, our gel bead layer that has the capability of cooling and vibrating) and existing technology improves, the features of the cast have the possibility of improving more and more.