

## Robotics – “Tech is essential for the advancement of medicine”

### I. TRU-D

- a. Oroville hospital is the only hospital in Butte County and surrounding counties currently implementing this technology. Controlling for bacteria, especially in hospitals, is always difficult. Cleanliness is a high priority for Oroville Hospital, so they are always looking for new and better ways to improve sanitation.
- b. TRU-D - “Germ killing robot”, utilizes UV light energy modifying their DNA and RNA structure to destroy bacteria. This stops the bacteria from reproducing and effectively kills all germs in a room.
- c. TRU-D – measures the size of the room, calculating the amount of UVC energy required to disinfect the room.
- d. TRU-D gives patients a sense of relief, knowing that when they walk into the room it is as clean as it can possibly get.
- e. Utilizing TRU-D does add time to the cleaning process. Usually taking 30-50 minutes to sanitize a room.
- f. Oroville Hospital currently finds two TRU-D systems to be sufficient, but they are always looking to add more or to implement newer technologies in the future.

### II. Da Vinci Surgical System

- a. Brief History – 1<sup>st</sup> use of robots in surgery was 1987. Tele presence surgery, combining Virtual Reality, Robots, and Surgery.
- b. The Da Vinci system provides a 3-D visual and endo-wrist manipulation. Some of its applications include Urology, General, Head and Neck, etc.
- c. Several advantages to utilizing the Da Vinci System – smaller incisions
  - i. Providing faster recovery
  - ii. Minimal trauma
  - iii. and faster return to work
- d. Advantages – 3-D visual, tremor filtration, Camera control, endo-wrist manipulation – providing better dexterity and more freedom of movement
- e. Intuitive motion
  - i. More like an open surgery
  - ii. Precision
  - iii. Movement scaling – movements are able to be scaled, providing maximum precision when needed.
- f. Staplers
  - i. More angled
  - ii. Smooth, no shake or movement
- g. Single Site Surgery
  - i. Computer is able to reverse actions when instruments cross over.
- h. Firefly fluorescence imaging
  - i. Providing the ability to check bile ducts without making any additional incisions or X-rays
  - ii. Taking parts of organs with minimal blood loss

### III. Training

- a. Surgeon/Staff utilizing these robotics must go through training.

- b. Many hours put into a simulator/simulations.
  - c. Performing case observations
  - d. 1 on 1 didactic and practicum
  - e. Advanced and Masters training
- IV. Oroville Hospital Results
- a. Over 1000 procedures have been done since the inception of these newer technologies.
    - i. Increase in patient confidence
  - b. Highly trained and skilled surgeons
  - c. Adaptation of these technologies is dramatically increasing across the U.S.