

A close-up photograph of a surgeon in a blue scrub suit, blue surgical cap, and blue surgical mask. The surgeon is wearing Google Glass, which is visible as a dark, rectangular device on their forehead. The background is slightly blurred, showing other people in the operating room.

GOOGLE GLASS

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HOW GOOGLE GLASS
COULD REVOLUTIONIZE THE
MEDICAL INDUSTRY

What is Google Glass?


- Google Glass is an **augmented-reality headset** that will work through an **Android smartphone** or an **iPhone** via Bluetooth


-Approximately 8,000 users will be asked to purchase Google Glass to participate in the beta test

- It is a voice-controlled, **hands free computing system** that allows users to be always connected to the Internet, and:

 Take photos and videos

 Open or join Google hangouts

 Get maps and directions

 Send texts, and more.

- Bluetooth, WiFi, & a GPS



- 5 megapixel **camera**

- **HD capable screen** that will recreate an image equivalent to **25 inches**

- The anticipated release date of a unit for consumers is **late 2013** or **early 2014**

"Best feature so far is its **turn-by-turn navigation**"

-Russell Holly of Geek.com

Cost & Market Potential



Google Glass is currently priced at:

\$1,500

for 16 GB of internal flash memory and 1 GB of RAM.

Google Glass is in beta testing with the
Explorer version.

and it features a **very costly prism "screen."**
It is possible that the retail price of a mass produced unit may be less.

Jet makes a similar product for

\$599



with 8 GB of on-board flash memory and 1 GB of RAM.

Tech experts estimate that the market for smart glasses, wearable devices
and other head-mounted displays like Google glass will be worth
\$800 million in 2013, increasing to **\$1.5 billion in 2014** and to **by 2016**

\$6 BILLION



Pros



Cons



Long Battery Life

Glass can last for up to

15 hours

on its battery, depend on how it is used



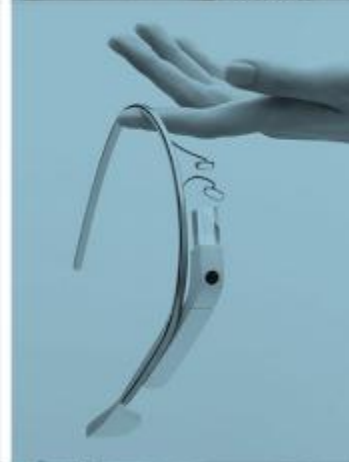
Uncomfortable

- A new user may feel **eye strain** at first it **doesn't fit** perfectly over eye glasses
- Colors are inconsistent and viewing the display in **bright sunlight** can be a problem



Never Lose It

If lost or stolen, a user can log into the **MyGlass App** and **locate the device** on a map and do a factory reset remotely



Very Limited

- **Very little is adjustable** in Google Glass, including volume levels or brightness. You **can't disable the WiFi or Bluetooth**.
- Google Glass does not yet have a large collection of **apps**



Hands Free

Glass is **simple to use** and provides for hands-free use **while walking, driving or working**, etc.



Security Problem

- Glass users can record photos or video by command **at any time**.
- **Anyone can** pick up the headset, put it on and reach your email, take photos, etc.

Potential Use in Medical Industry

PROCEDURE HELP

Glass could be used during surgical procedures to **consult with other physicians** and sharing that information with providers nationally and internationally.

An app for Glass might be able to **detect cavities that a dentist might miss** during a routine cleaning.



SAVE TIME & LIFE

Emergency service technicians can use Glass in the field to get support from other medical professionals, get guidance for difficult procedures and serve as a time saver.



TEACHING TOOL

"I envision Glass could be used as a **teaching tool during surgery**, connected with students via Google Hang Out."

-Dr. Rafael J. Grossman, a surgeon at Eastern Maine Medical Center in Bangor



MORE ENGAGEMENT with the Patients

Dr. Grossman believes that medicine has gotten impersonal because doctors and other care providers are talking to patients but then turn to a computer to review, record or upload data. With Glass, they can still do these things but **while making eye contact and addressing patients face to face.**



One start-up has developed an app for Glass called **Farlo**. One nurse using Glass was able to **live stream video of a patient's vital signs to a doctor en route.**

"Glass can show incoming notifications to physicians of patient conditions and **could enhance the vision and perception of doctors and dentists.**"

-J.C. Hewitt, Forbes.com

MORE SANITARY

Hands-free glasses would also be cleaner and safer to use in health care environments, since they aren't touching multiple surfaces like a smartphone or tablet.



*One concern Dr. Grossman has is that patient **privacy** has not yet been addressed through adequate apps, limiting possible uses for Glass.

Provide **immediate access** to “**content based medical records**” beyond what a physician can see on a computer screen.

Drug Information: Physicians could **access patient charts** and compare the medical history with drug options, interactions and contraindications.

Visual recognition apps could assist in **diagnosing patients**, while focused on the patient.

Stream images and videos to attending physicians for assistance in **decision-making** and diagnosis.

Use by a paramedic to **document patient care** with photos and videos to provide to a physician upon the patient’s arrival to the emergency room.

Provide **remote training** and **collaboration**.

Contact pharmacy technicians for **scanning and verifying** medications and comparing them to the patient’s medical records.

Record **surgical procedures** (with the patient’s consent).

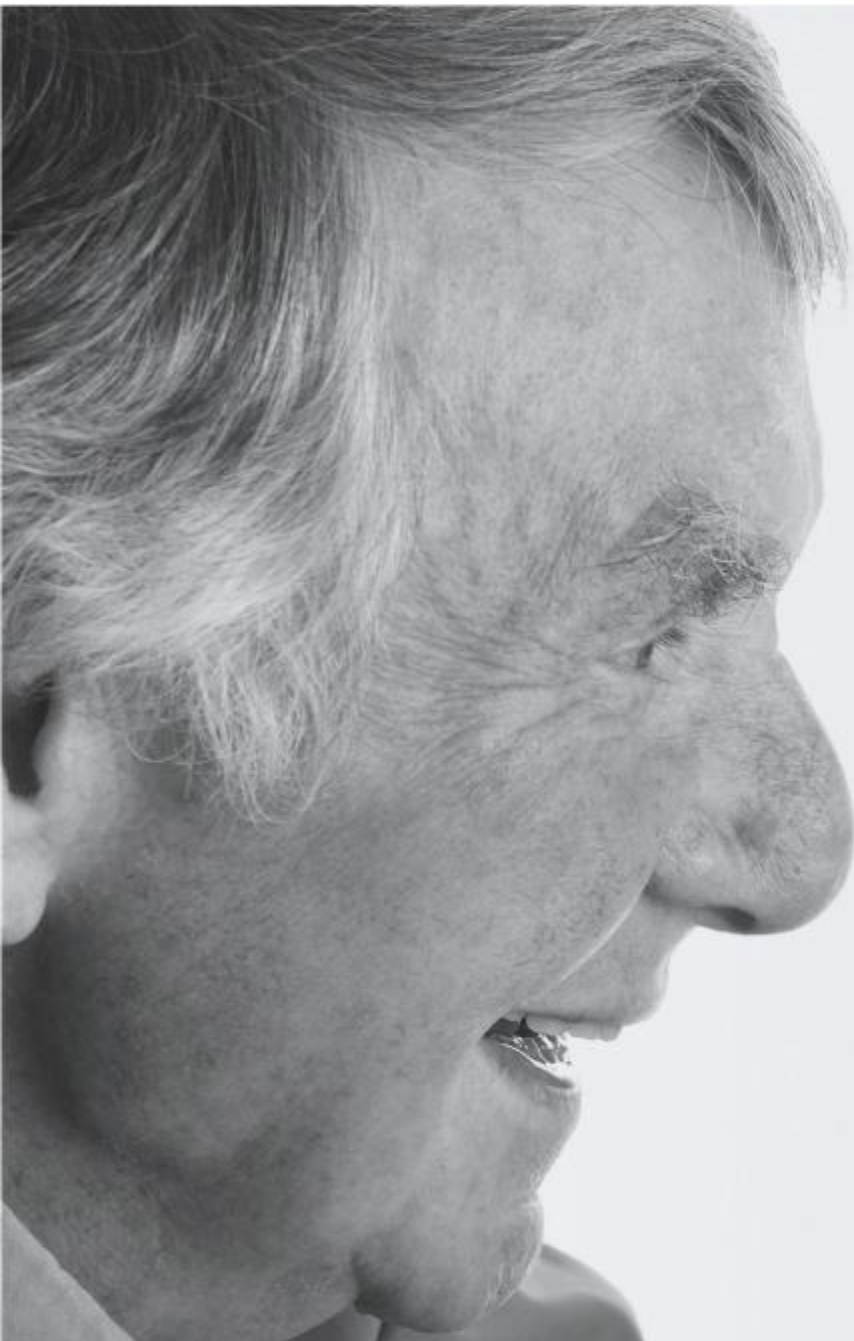
Utilize the **AED4.US app** on Google Glass to **locate Automated External Defibrillators** (AEDs) around the world (currently available for iOS and Android).

Serve as a tool for **disaster management** with shareable information, photos and videos and access to navigation tools for **dispatch purposes**.

Instant documentation: **doctors could instantly record** and have their



Possible Uses in Patient Health Care



Virtual medicine: doctors and other health care providers could check on patients **remotely** (Could be particularly helpful in remote areas with limited access to care and in developing countries).

Share patient diagnostic images with patients, family members and other health care providers.

Glass could be used to **educate patients** using diagnostic test results (e.g., **x-rays, MRIs**, etc.).

Translation apps would allow doctors and other health care providers to **communicate** with their patients when needed.

Home care sessions from health care providers such as nurses could be recorded and shared with physicians and others who oversee care or are asked to provide **advice or feedback**.

Physical therapists could record patient sessions to **monitor progress** over time and **better identify** range of motion.

From a **personal healthcare perspective**, consumers could use Glass to **make better shopping choices** by comparing nutrition labels to dietary restrictions; diet tracking; health tips and recipes; personal fitness tracking; exercise feedback; health profiles; health warnings; medication information; personal safety; and overcoming visual, auditory and physical handicaps or disabilities.



- Thank you for your attention