

# Leveraging Digital Health Technologies to Support the Achievement of Optimal Health & Wellness

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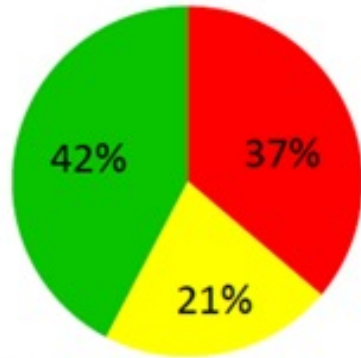


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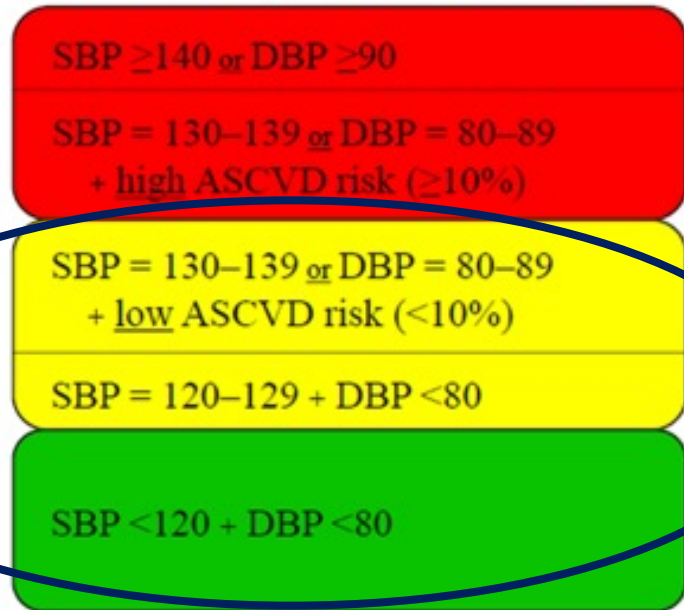
# The Importance of Lifestyle Changes

A.

**% of US adults falling into blood pressure treatment categories†**

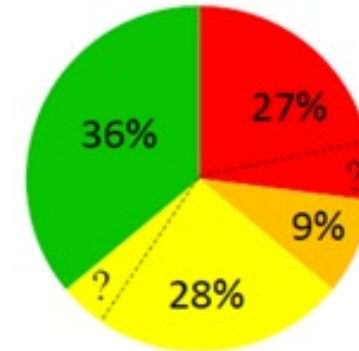


**Criteria for Blood Pressure Treatment Guidelines :**

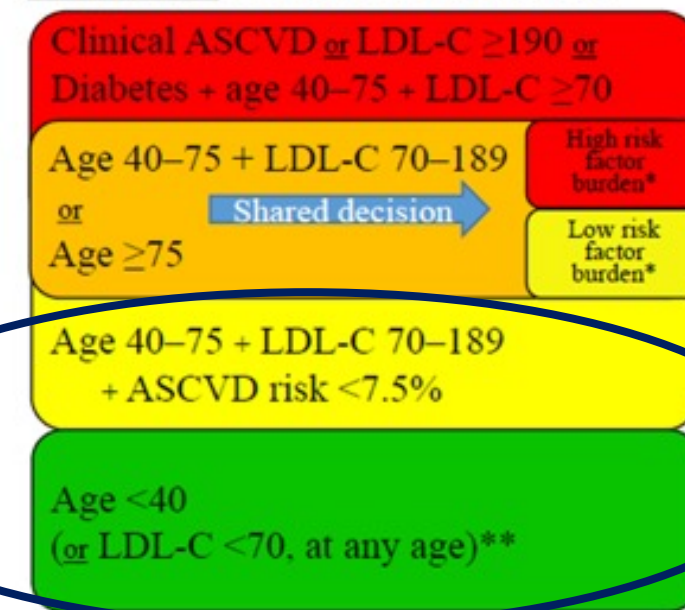


B.

**Approximate % of US adults falling into cholesterol treatment categories‡**



**Criteria for Cholesterol Treatment Guidelines:**



- Pharmacological treatment & lifestyle changes
- Shared decision for potential pharmacological treatment
- **Lifestyle changes ONLY**
- Low risk ( healthy lifestyle to maintain low risk)

# Digital Health Technologies - *Self-Monitoring*



# What does '*digital health*' mean to you?

ability to monitor one's health and access data about one's health; could also include telemedicine

Keeping fingers and toes clean and bacteria-free.

My computer doesn't have a virus. It also means using digital electronic technology to monitor my health e.g. wearable watch that measures heart rate, ...

Digital health measures health information, including blood pressure, pulse, activity, sleep and other health indicators using wearable devices. It also includes telemedicine. I'm a longtime Fitbit user

using data to help make decisions about my health. Real time data.

Telemedicine, access to medical records across the Us to both the caregiver s and the patients

# Mobile Health (mHealth)

*“The use of mobile and wireless technologies to support the achievement of health objectives.”*

## Examples

- Voice & short messaging service (SMS) (i.e., text messaging)
- Global positioning system (GPS)
- Bluetooth technologies
- Wearable garments/accessories for physiologic monitoring (e.g., Apple Watch, Garmin, FitBit, etc.)

# Wearable Fitness Trackers “Wearables”

- Basic Tracker
- Smartwatch
- GPS Tracker
- Heart Rate Monitor



## Digital health technology

1. Do you own at least one digital device you use for your health? (Single Choice)

Yes

No

2. If yes, what type of device(s) do you own? (select all that apply) (Multiple Choice)

Smartphone

Fitness tracker (e.g. Fitbit, Apple Watch, Garmin, Amazfit, Samsung Galaxy watch)

Bluetooth body weight scale

Bluetooth blood glucose monitor

Bluetooth blood pressure monitor

Other wearable biosensor (e.g., Philips, Biovitals)



3. If yes, for what aspect(s) of your health do you use these devices? (select all that apply) (Multiple Choice)

- Physical activity (e.g., step count, caloric expenditure)
- Sedentary time
- Sleep
- Heart rate
- Electrocardiogram (ECG)
- Blood pressure
- Blood sugar
- Skin temperature
- Other

# So many choices!!!

- Price
- Your goals + Devices Function(s)
- Wearing + Aesthetics
- User Experience
- Features
  - Display
  - Companion App
  - Wi-Fi/Bluetooth connectivity
  - Battery life
  - Waterproof/Water-resistant
  - GPS
  - Custom Workouts
  - Notifications



# Using Wearables for Good!

- Activity Tracking
- Sedentary Time
- Sleep Tracking
- Monitoring
  - Heart Rate
  - Blood Pressure
  - Blood Sugar
  - Blood Oxygen
  - Other physiological parameters



# Strengths

- Monitor Overall Fitness & Health
- Achieve Fitness & Health Goals
- Connectivity with smartphones
- Health Insurance Premium Discount



# Limitations

- Gather data if you do not use it
- Do the work for you
- Detect everything
- Tell you what to do
- <100% accuracy
  - Caffeine
  - Stress
  - Smoking
  - Exercise
  - Illness



# Other Wearable Health Monitoring Devices

- Wearable ECG Monitors
- Wearable Blood Pressure Monitors
- Biosensors

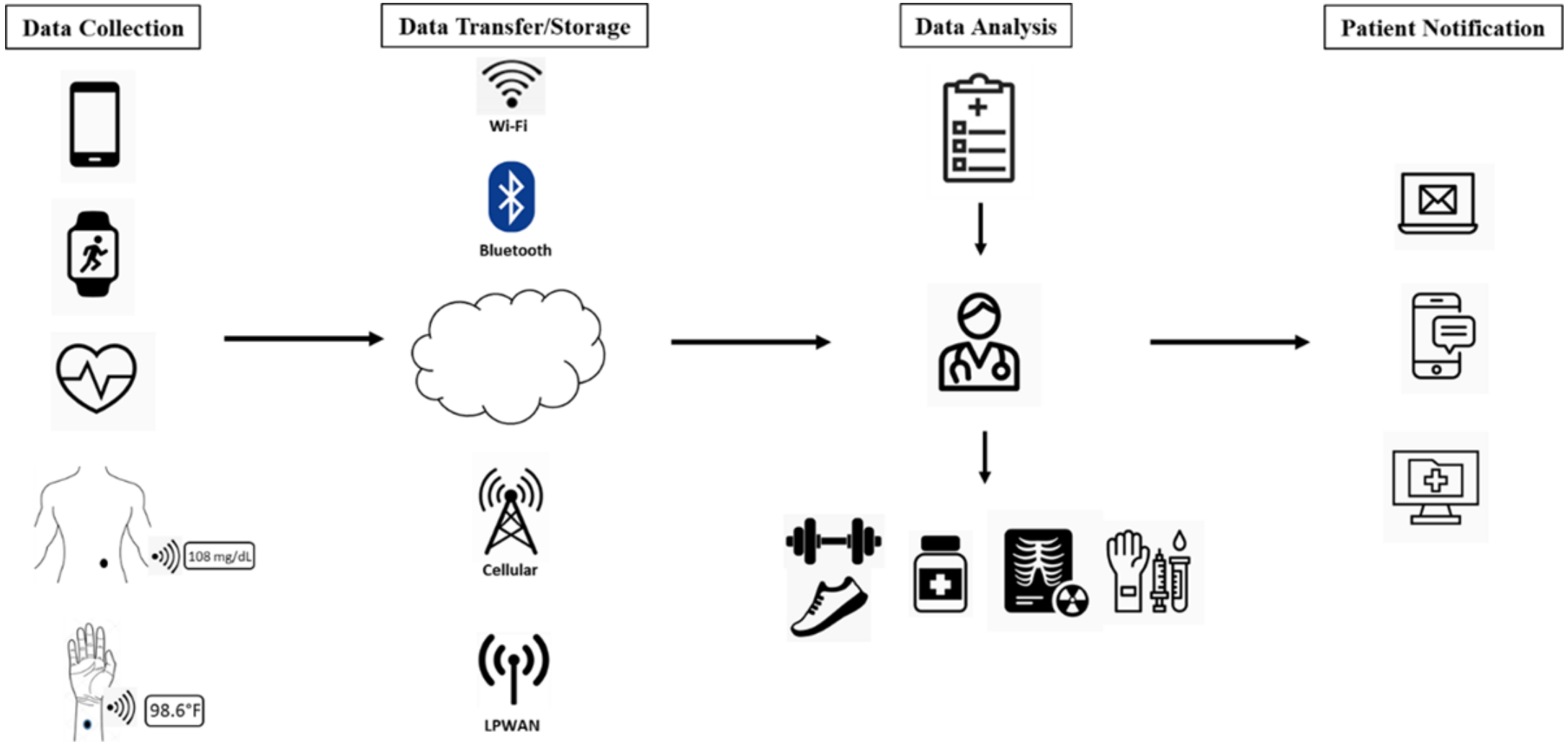


# Remote Patient Monitoring (RPM) Devices

- Blood Pressure (BP)
- Glucometer (Blood sugar levels)
- Pulse Oximeter (Blood O2 levels)
- ECG + Stethoscope
- Thermometer
- Scale



# Internet of Things (IoT)





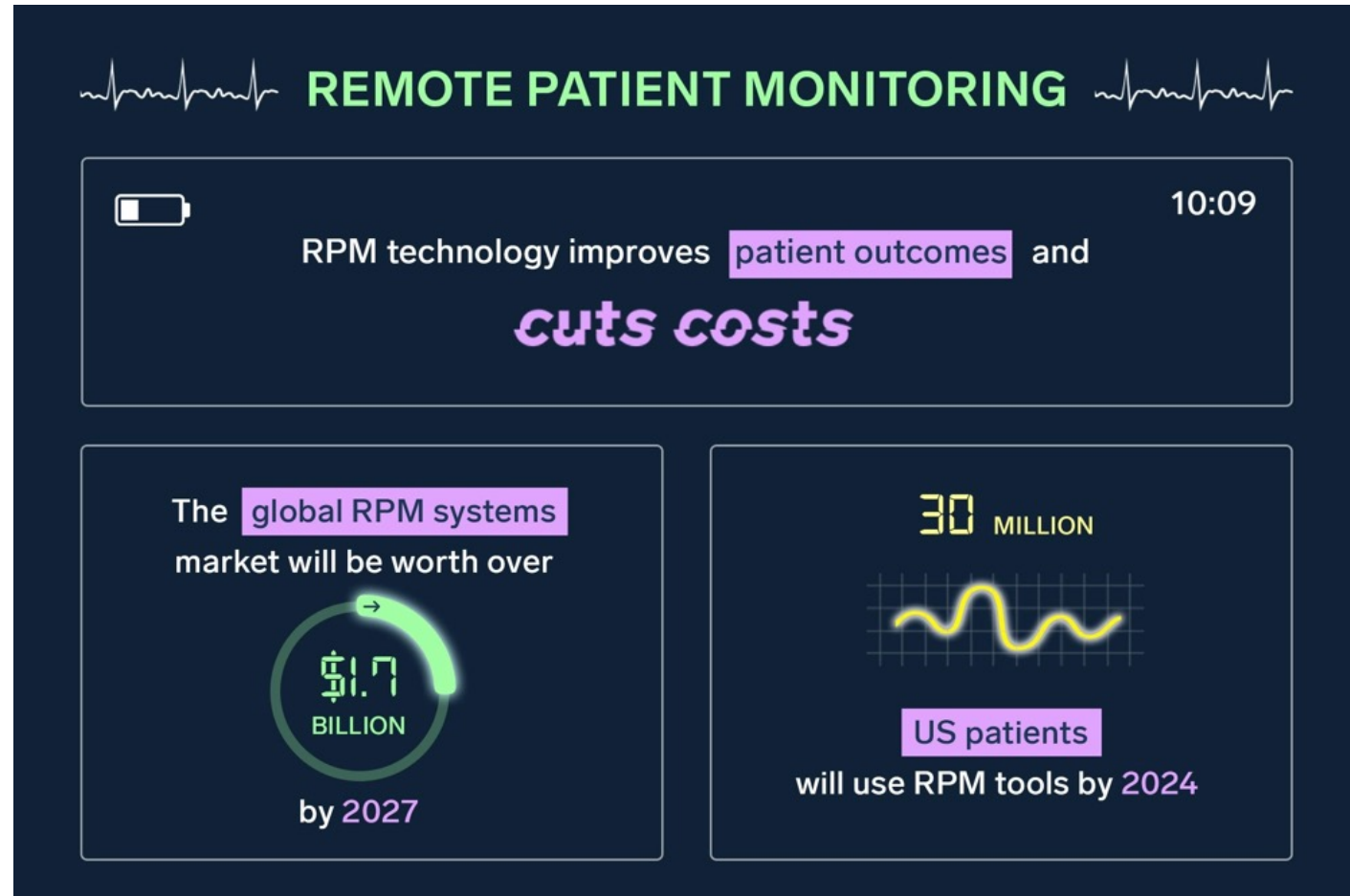
# Wearable Technology Barriers

- Affordability
- Usability
- Privacy & Security



# Future Directions

- Remote Monitoring
- Miniaturization



# Mobile App Components

- **Medication Adherence**
  - Notifications/Reminders
  - Recording
- **Physical Activity**
  - Graph (visualization)
  - Notifications (awareness & motivation)
- **CVD Educational Content**
  - Physical Activity
  - Blood Pressure Management
  - Weight Management
  - Heart Healthy Eating
  - Overall CVD Wellness
- **VO2 Max**
  - Measurement
  - Recording



## Welcome!

Thank you for joining our study. Tap Next to learn more before signing up.

Next

*Do you want to help save a life?*



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