

Why Wearables Will Change Health Insurance Pricing

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TRADITIONAL PRICING

- Traditional Pricing of health products uses readily available information like age and community risk
- Group rates are set based on past experience of the products with some credibility given to that experience
- Credibility is also given to the insurer's overall experience or readily available industry data
- Predictions are made as to what future experience would be
- Rates are set accordingly using experience from the last three calendar years
- Individual rates are set at issue with or without underwriting



PROS AND CONS

Pros

- Applied across a community or group of risks
- Ease of pricing as it's applied in the aggregate
- Uses averages
- Law of large numbers
- Pricing occurs at issue



Cons

- Little opportunity for future individual experience to be considered
- Unfair to some members of the group as they subsidize others
- No underwriting following issue or renewal

WEARABLE BASICS

- Attached to body
- Collect vital information
- Steps walked
- Heart rate
- Pulse
- Blood pressure
- Glucose level
- Respiratory changes
- Data sometimes reported

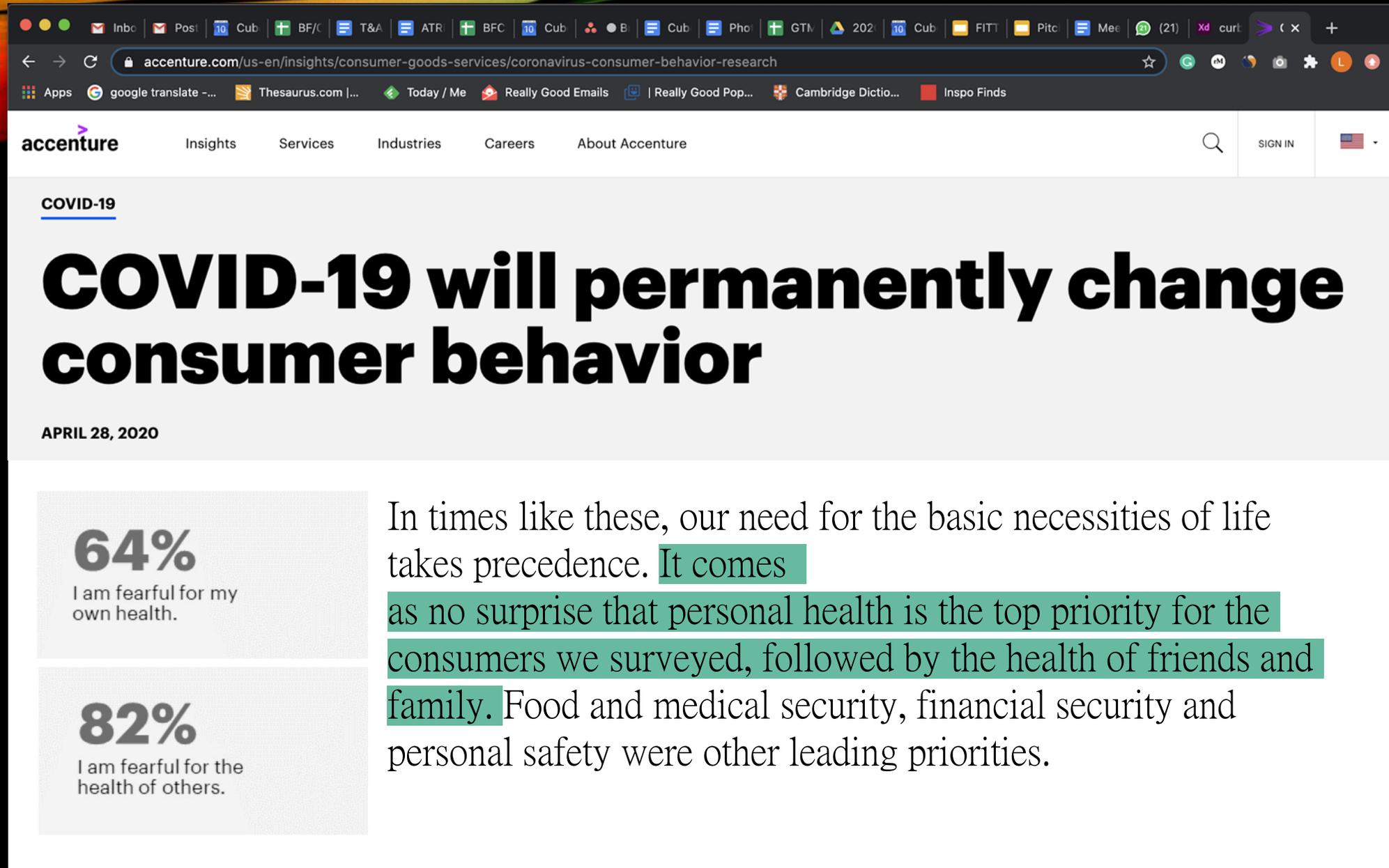


WHOOOP STRAP

- Fitness tracker
- Collects physiological data
- Used by professional athletes and others
- Analytics – tracks recovery, strain and sleep patterns
- Sleep goals – cycles, disturbances, circadian rhythm
- Recovery – heart rate, resting heart rate, time for recovery
- Strain on the body – cardiovascular load
- Calorie tracking
- COVID-19 rise in respiratory rate







The image is a screenshot of a web browser displaying an Accenture article. The browser's address bar shows the URL: [accenture.com/us-en/insights/consumer-goods-services/coronavirus-consumer-behavior-research](https://www.accenture.com/us-en/insights/consumer-goods-services/coronavirus-consumer-behavior-research). The page features a navigation menu with links for Insights, Services, Industries, Careers, and About Accenture. The main heading is "COVID-19 will permanently change consumer behavior", dated April 28, 2020. Two statistics are highlighted in light blue boxes: 64% of respondents are fearful for their own health, and 82% are fearful for the health of others. The main text discusses how basic necessities take precedence during such times, with personal health being the top priority for surveyed consumers, followed by the health of friends and family. Other priorities mentioned include food and medical security, financial security, and personal safety.

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COVID-19

COVID-19 will permanently change consumer behavior

APRIL 28, 2020

64%
I am fearful for my own health.

82%
I am fearful for the health of others.

In times like these, our need for the basic necessities of life takes precedence. It comes as no surprise that personal health is the top priority for the consumers we surveyed, followed by the health of friends and family. Food and medical security, financial security and personal safety were other leading priorities.

*WHILE THE
WORLD IS
TRYING TO
GET HEALTHY,
WE ARE TRYING
TO DEFINE
WHAT
“HEALTHY”
MEANS.*

*WE WANT TO
CHANGE HOW THE
WORLD DEFINES
“HEALTHY” BY
CHALLENGING THE
FLAWED FIXATION
ON SINGLE
METRICS.*

THAT'S WHY WE CREATE PRODUCTS TO GIVE YOU THE FULL PICTURE OF YOUR HEALTH



ATRIA PRO FITNESS TRACKER

It's time to watch the metrics that really count when it comes to your health. Our waterproof fitness tracker measures your body temperature, heart rate, blood oxygen, activity levels and even your sleep patterns!



DARA SMART SCALE

The Dara Smart Scale is a simple and effective solution to stay motivated. Measure, track, and trend your body vitals over time with 17 Health Measurements at the comfort of your fingertips.



BEEBO FAMILY SCALE

The Beebo Family Scale is here to keep you and your family on track: up to 8 users can use the scale and have their data synced onto our app. Follow not only your loved ones' health with 17 metrics, but also your gestation and your baby's development.

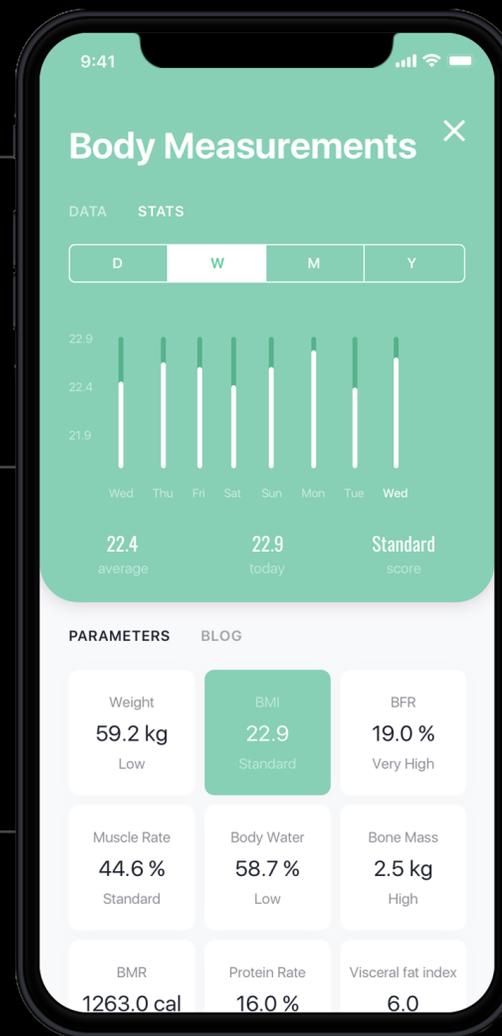
Our fitness tracker's main health metrics:

- Body Temperature
- Heart Rate
- Blood Oxygen
- Sleep quality



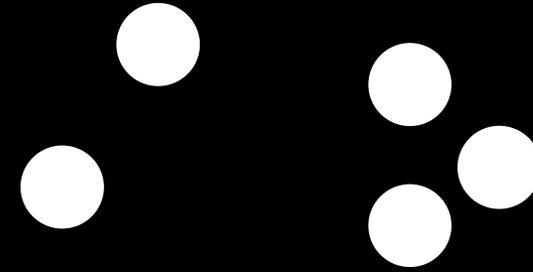
Our smart scales measure 17 health metrics:

- Body Weight
- BMI
- Body Fat Percentage
- Muscle Rate
- Hydration Levels
- Bone Mass
- Basal Metabolic Rate
- Protein Rate
- Metabolic Age
- Visceral Fat Index
- Subcutaneous Fat
- Standard Weight
- Weight Control
- Fat Mass
- Weight Without Fat
- Muscle Mass
- Protein Mass



AN
ECOSYSTEM
THAT OFFERS
A COMPLETE
AND
POWERFUL
HEALTH
MANAGEMENT
SYSTEM.

FitTrack Health App.
The full picture of your health at the touch of a finger: access health insights unique to your body and keep motivated to achieve your health goals.



*SINCE 2018, WE'VE
BEEN HELPING OVER
500,000 PEOPLE
GLOBALLY LIVE
THEIR TRUE HEALTH.*

Forbes

"Take care of your body, and it will take care of you"

yahoo!

"The easier way to track your weight"

DAILY BEAST

"[It's] like having a personal trainer in your bathroom"

iMore

"A 'SEXY' Scale"

STYLE + LIFE + FASHION

"Help mom stay motivated on her wellness journey"

 **NERD REACTOR**

"The digital scale that does more than just provide your weight"

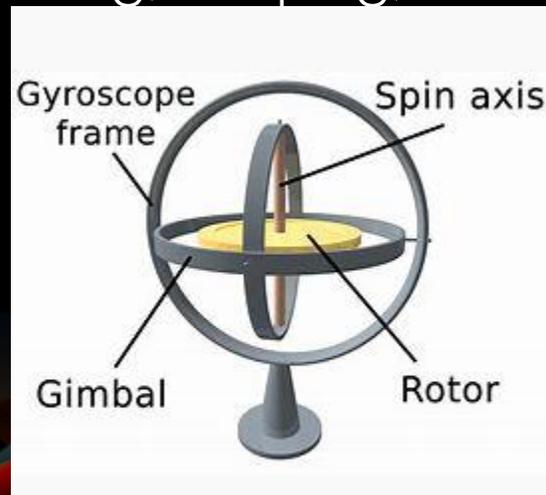
*WE ARE
JUST
GETTING
STARTED*



LIVE YOUR TRUE HEALTH

THE “TECH”

- Human centered computing – predict human behavior
- User integrated within social context
- Recorded signals predict physiological changes
- 3-D axis using accelerometers, gyroscopes, altimeters, optical sensors and temperature gauges
- Physiological signals give bio-metric data
- Algorithms predict walking, sleeping, running, jogging, resting etc.



AI AND PREDICTIVE ANALYTICS

- Timing and training algorithms
- AI algorithms can detect serious health conditions like high blood pressure, sleep apnea, and atrial fibrillation.
- FDA has approved at least one algorithm
- Instant EKG on a device – sends results to a doctor.

THE “MATH”

- Math-point Biserial correlation
- Logistic Regression
- Kruskal Wallis H-test
- Min-max normalization
- Gaussian distribution



THE FACTS

- Vary from simple wrist-watches to smart-phone connectivity
- Becoming more popular
- Growth tripled in the last four years
- Expected to grow at 10% (Business Insider)
- By 2023 120 million units on the market
- Medical and health insurance industries will be changed forever
- Health platforms are evolving
- Healthcare professionals will start to receive data feeds
- Patient monitoring
- Rural patients will gain more health access



THE SPECIFICS

- More than 80% of consumers are willing to wear fitness technology (Business Insider)
- US market – 9% in 2014 to 33% in 2018 (Accenture)
- Supplying wearable health technology benefits employer and insurer
- Clinical health tools to assist doctor
- Apple Heart Study – 2017 – monitors heart rhythm and atrial fibrillation
- Movement Disorder API – insight into Parkinson's disease
- Wearable ECG monitors – measures electronic cardiograms – sent to Doctor
- Heart Advisor App – can be shared with physician
- Biosensors – self-adhesive patch

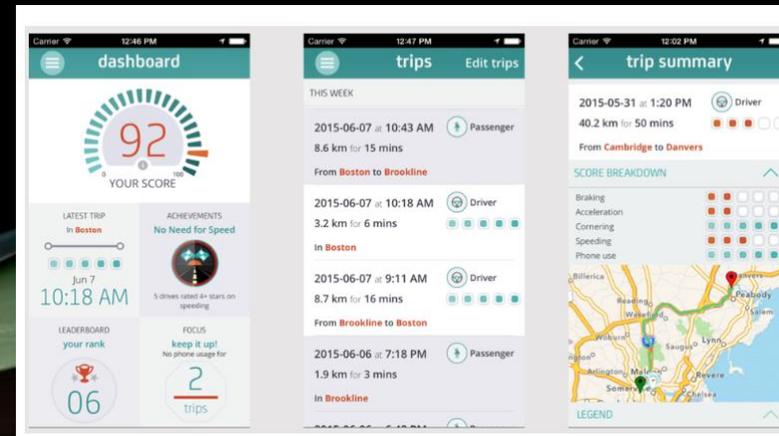
BIG DATA AND WEARABLES

- Repository assembles information on users
- Algorithms look for correlations between various health parameters and the risk of health failures across a large swath of individuals
- Socio-economic parameters can be segmented
- Predictive modeling can be refined
- Health premiums can be adjusted “on-the-fly”



COMPARISONS TO SAFE DRIVING APPS

- Safe driving apps from auto insurers have emerged in the last ten years
- Device that plugs into car's electronics and measures speed and other driving dynamics
- Premiums determined by the information collected from the app
- Wearables are a very similar concept in that they collect fitness related information and use it to make predictions through algorithms on health related factors



SOCIAL MEDIA AND WEARABLES

- Small size – limitations on communication
- No typing – voice based instead
- Messaging will be picture based 
- Text will be smaller
- Technology platforms must change to accommodate this emerging social media space
- Opportunities for marketing to this health conscious community

REWARDS AND INCENTIVES

- Some employers and insurers are offering rewards – points and cash
- HIGI
- Vitality – employers and insurers only
- Wellcoin – first health currency
- Humana's GO365
- UnitedHealthCare Motion
- AARP
- Qapital
- My Achievement
- Jolt



DYNAMIC PRICING DEFINED

- Tailored to each individual member rather than the group at large
- Reduced subsidies between group members
- Premiums adjust at faster than an annual frequency
- Algorithms drive the premium
- Little underwriter involvement once policy is issued
- Opportunities for insurers to initiate health coaching to encourage use of the equipment
- Assembly of large database of pricing information
- Sub-standard pricing



PRICING APPROACHES

- Potential approaches would have the premium adjust every month based on the fitness level of the wearer
- Wearers who fall off a fitness schedule would be encouraged to get back on
- Opportunities to refine algorithms as experience develops or to tailor it to specific employment groups
- Insurer based incentives to stay on schedule and continue to use the devices
- Those with co-morbidities would see higher individual premiums
- Potential for some subsidy between healthy and un-healthy lives

PANDEMIC CONTACT TRACING

- Watches that beep when wearer gets too close to someone else
- Measuring the rise in body temperatures in certain hot-spots could predict the onset of influenza
- Collecting data on who the wearer came into contact with during specific periods of time could assist greatly with contact tracing
- Data can be used to also trace hospitalization and doctor visits
- Data about flight patterns could predict next countries of outbreak
- May also be used to validate if wearer is self-quarantining



ETHICS AND WEARABLES

- Will regulators allow dynamic pricing?
- Insureds not always using the wearables
- Learned behaviors
- Invasion of privacy
- May not tell us about if the applicant smokes or other health issues
- May provide a false sense of the true health profile of the insured
- A “hybrid” approach of traditional and dynamic pricing



INSURER BENEFITS

- Health underwriting improvements
- “Updated” Framingham study
- Data Science – improved predictability
- Competitive advantage
- Profitability
- Modify trajectory of patient outcomes
- Reduce staff workload
- Delay rising health care costs
- Customer life value



THE FUTURE

- Improved focus on personal health
- Reduced employee turnover (Business Insider Intelligence research)
- Inner body medical devices
- More FDA approvals
- Advanced algorithms
- Improved privacy legislation



QUESTIONS?

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