



EMERGING TECHNOLOGIES

Charlie Schaefer, PhD

- Increase awareness...
- Evaluate...
- Dream...

...about emerging and possible future applications of healthcare technology to meet global worker specific needs

GOALS FOR TODAY






- No product endorsements intended
- Illustrative examples, not thorough systematic reviews
- No financial relationship with any of these products



- **Social Trends** affecting healthcare and technology
 - What do clients want?
- Emerging technology trends in the **Doctor's Office**
- What is being done in **On-Field** Mental Health practice?
- **Future** – upcoming technology trends and MHM dreams!



How many of you would say that you are using an emerging technology to help deliver or personally receive care, supervision, or training?

“emerging technology” = new within the last three years

EMERGING TECHNOLOGY TRENDS IN THE DOCTOR'S OFFICE

- Healthcare regularly incorporates emerging technologies
 - Quality of care
 - Cost management
 - Offering care to more people



SPECIFIC NEEDS OF GLOBAL WORKERS



- Far from the limited available resources
- Isolated, need for supportive community
- Financial concerns
- Short-term tx is most likely, followed by self-help, follow-up
- Safety/privacy
- Mobility – raids, war, evacuation

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ON-FIELD GLOBAL WORKER MENTAL HEALTH APPLICATIONS

On-field clinics
interviewed



SOCIAL TRENDS AFFECTING HEALTHCARE AND
TECHNOLOGY

EMERGING TECHNOLOGY TRENDS IN THE
DOCTOR'S OFFICE

ON-FIELD GLOBAL WORKER MENTAL HEALTH
APPLICATIONS



People are increasingly connected through technology

SOCIAL TRENDS
AFFECTING
HEALTHCARE AND
TECHNOLOGY



HOW MANY PEOPLE USE THE INTERNET NOW?

[http://www.internetlivestats.com/
internet-users/#trend](http://www.internetlivestats.com/internet-users/#trend)

Year	Internet Users**	Penetration (% of Pop)	World Population	Non-Users (Internetless)	1Y User Change	1Y User Change	World Pop. Change
2016*	3,424,971,237	46.1 %	7,432,663,275	4,007,692,038	7.5 %	238,975,082	1.13 %
2015*	3,185,996,155	43.4 %	7,349,472,099	4,163,475,944	7.8 %	229,610,586	1.15 %
2014	2,956,385,569	40.7 %	7,265,785,946	4,309,400,377	8.4 %	227,957,462	1.17 %
2013	2,728,428,107	38 %	7,181,715,139	4,453,287,032	9.4 %	233,691,859	1.19 %
2012	2,494,736,248	35.1 %	7,097,500,453	4,602,764,205	11.8 %	262,778,889	1.2 %
2011	2,231,957,359	31.8 %	7,013,427,052	4,781,469,693	10.3 %	208,754,385	1.21 %
2010	2,023,202,974	29.2 %	6,929,725,043	4,906,522,069	14.5 %	256,799,160	1.22 %
2009	1,766,403,814	25.8 %	6,846,479,521	5,080,075,707	12.1 %	191,336,294	1.22 %
2008	1,575,067,520	23.3 %	6,763,732,879	5,188,665,359	14.7 %	201,840,532	1.23 %
2007	1,373,226,988	20.6 %	6,681,607,320	5,308,380,332	18.1 %	210,310,170	1.23 %
2006	1,162,916,818	17.6 %	6,600,220,247	5,437,303,429	12.9 %	132,815,529	1.24 %
2005	1,030,101,289	15.8 %	6,519,635,850	5,489,534,561	12.8 %	116,773,518	1.24 %
2004	913,327,771	14.2 %	6,439,842,408	5,526,514,637	16.9 %	131,891,788	1.24 %
2003	781,435,983	12.3 %	6,360,764,684	5,579,328,701	17.5 %	116,370,969	1.25 %
2002	665,065,014	10.6 %	6,282,301,767	5,617,236,753	32.4 %	162,772,769	1.26 %
2001	502,292,245	8.1 %	6,204,310,739	5,702,018,494	21.1 %	87,497,288	1.27 %
2000	414,794,957	6.8 %	6,126,622,121	5,711,827,164	47.3 %	133,257,305	1.28 %

Internet Users by Country (2016)

See also: [2015 Estimate](#) and [2014 Finalized](#)

#	Country	Internet Users (2016)	Penetration (% of Pop)	Population (2016)	Non-Users (internetless)	Users 1 Year Change (%)	Internet Users 1 Year Change	Population 1 Y Change
1	China	721,434,547	52.2 %	1,382,323,332	660,888,785	2.2 %	15,520,515	0.46 %
2	India	462,124,989	34.8 %	1,326,801,576	864,676,587	30.5 %	108,010,242	1.2 %
3	U.S.	286,942,362	88.5 %	324,118,787	37,176,425	1.1 %	3,229,955	0.73 %
4	Brazil	139,111,185	66.4 %	209,567,920	70,456,735	5.1 %	6,753,879	0.83 %
5	Japan	115,111,595	91.1 %	126,323,715	11,212,120	0.1 %	117,385	-0.2 %
6	Russia	102,258,256	71.3 %	143,439,832	41,181,576	0.3 %	330,067	-0.01 %
7	Nigeria	86,219,965	46.1 %	186,987,563	100,767,598	5 %	4,124,967	2.63 %
8	Germany	71,016,605	88 %	80,682,351	9,665,746	0.6 %	447,557	-0.01 %
9	U.K.	60,273,385	92.6 %	65,111,143	4,837,758	0.9 %	555,411	0.61 %
10	Mexico	58,016,997	45.1 %	128,632,004	70,615,007	2.1 %	1,182,988	1.27 %
11	France	55,860,330	86.4 %	64,668,129	8,807,799	1.4 %	758,852	0.42 %
12	Indonesia	53,236,719	20.4 %	260,581,100	207,344,381	6.5 %	3,232,544	1.17 %
13	Viet Nam	49,063,762	52 %	94,444,200	45,380,438	3.3 %	1,564,346	1.07 %
14	Turkey	46,196,720	58 %	79,622,062	33,425,342	5.1 %	2,242,750	1.22 %

<http://www.internetlivestats.com/internet-users-by-country/>

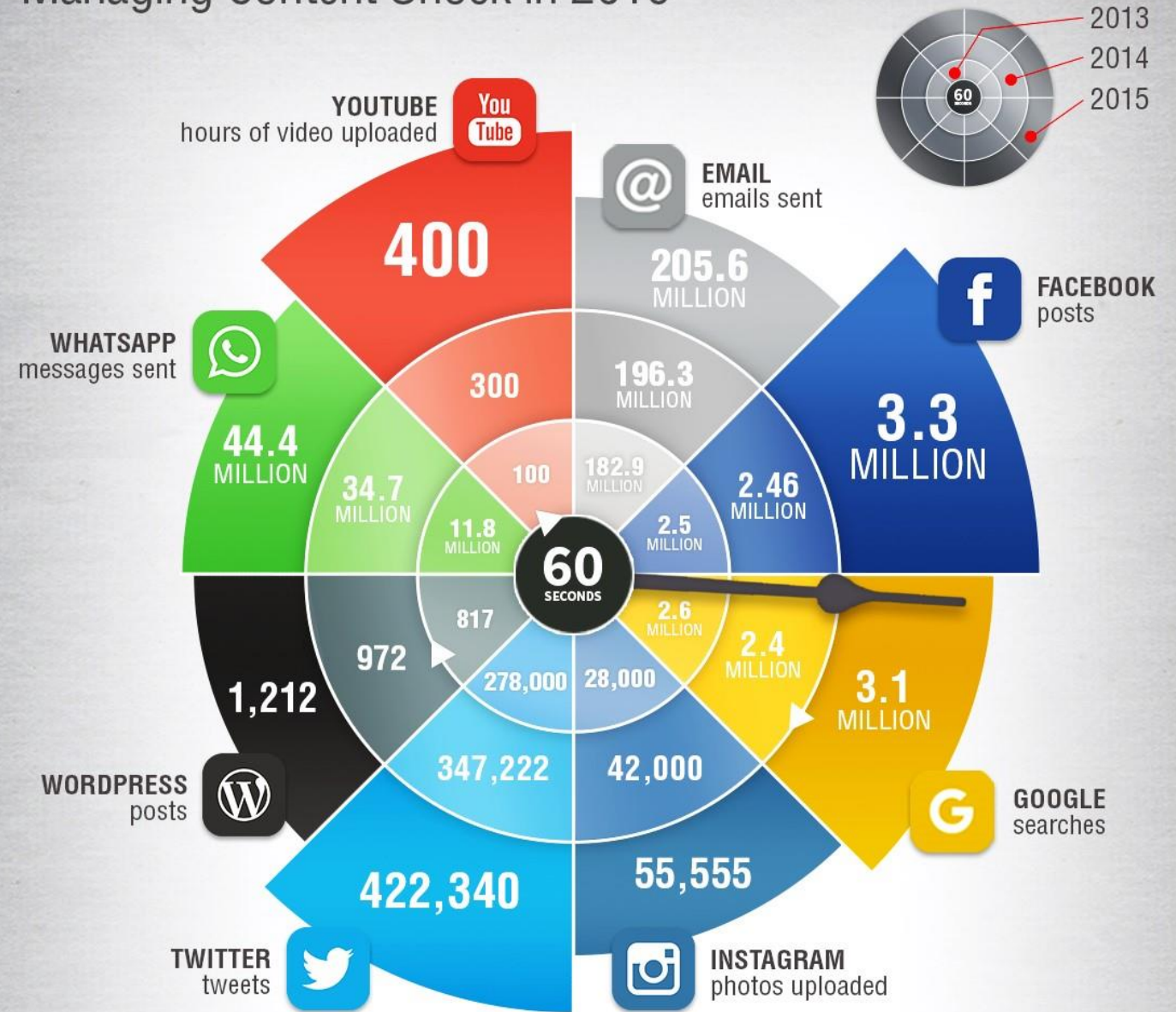
What is the internet used for?

Social media explosion

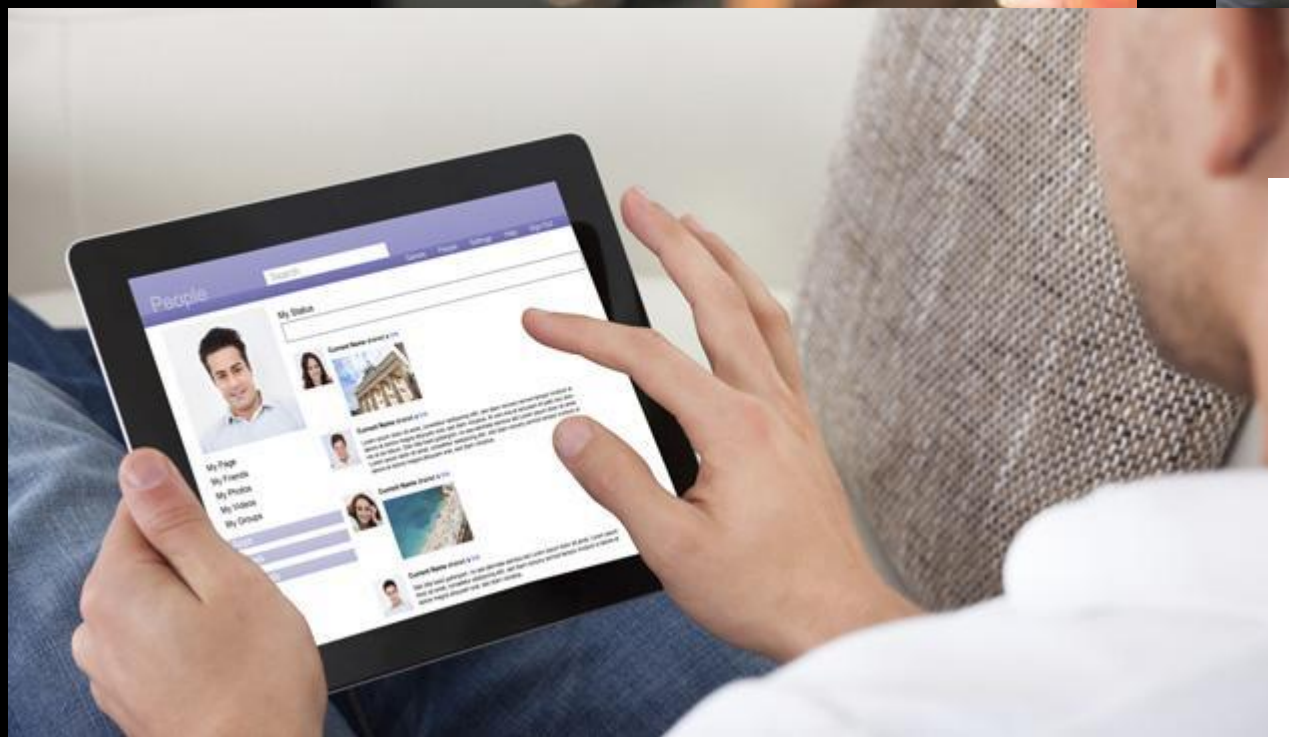
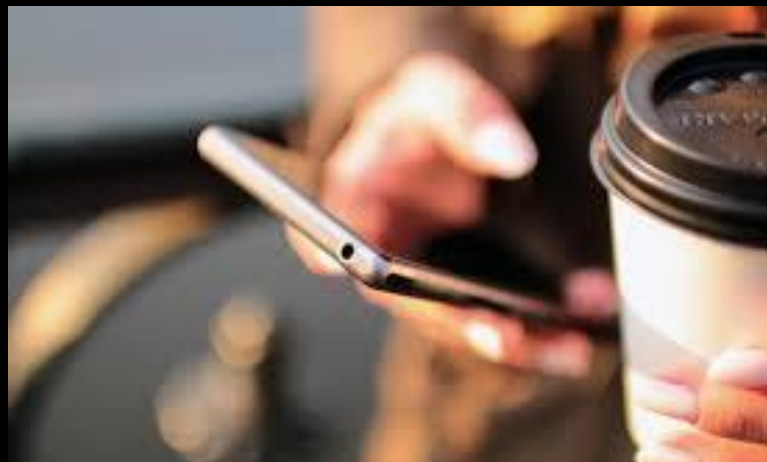
SOCIAL TRENDS AFFECTING HEALTHCARE AND TECHNOLOGY

What Happens Online in 60 Seconds?

Managing Content Shock in 2016



GLOBAL CONNECTION TECHNOLOGY



SOCIAL TRENDS
AFFECTING
HEALTHCARE
AND
TECHNOLOGY

Video conferencing is more common



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TELEHEALTH IS MORE COMMON



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Telehealth Guidelines

International

- ACA 2014 Code of Ethics
- AAMFT 2015 Code of Ethics
- APA Guidelines: Practice of Telepsychology (2013)
- NASW Stds: Tech and Social Work Practice (2005)

Domestic

-- Telehealth Services Code of Practice for **Europe** (2015):

www.telehealthcode.eu/

-- The **European Commission's** eHealth Action Plan 2012-2020 (2012):

ec.europa.eu/digital-single-market/en/news/ehealth-action-plan-2012-2020-innovative-healthcare-21st-century

--**People's Republic of China**, Healthcare Telemedicine Guidelines:

www.nortonrosefulbright.com/knowledge/publications/122272/china-healthcare-telemedicine-guidelines-issued-for-the-first-time

HIPAA, SAFETY AND VIDEO CONFERENCING

Is the data transmission secure?
(encrypted end to end)

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Counselor

Client



HIPAA, SAFETY AND VIDEO CONFERENCING

Is the data transmission secure?
(encrypted end to end)

Does VC company have access?
(what will they do with the data?)

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HIPAA, SAFETY AND VIDEO CONFERENCING

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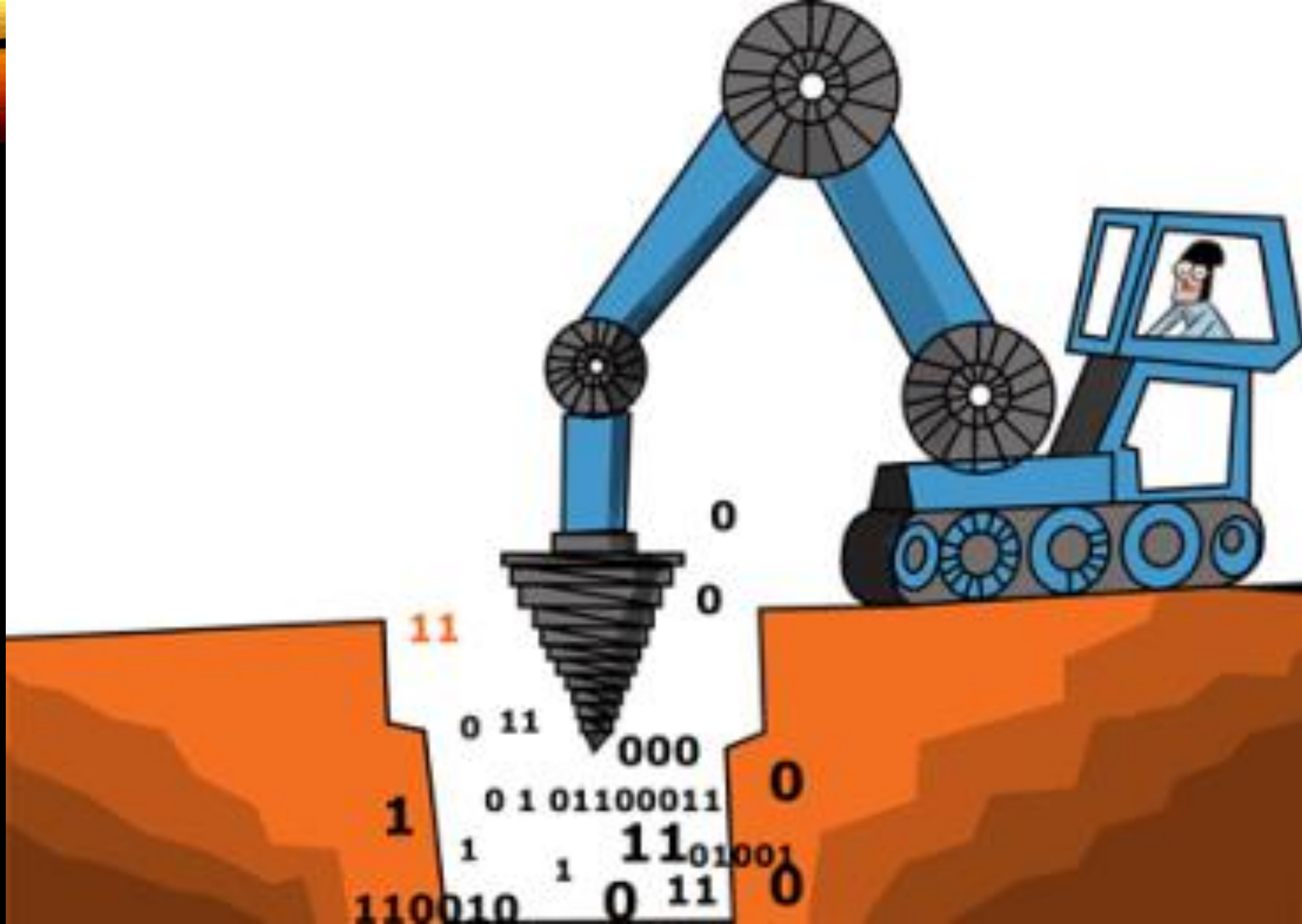
- Is communication recorded?
- Will there be data mining?



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Data mining

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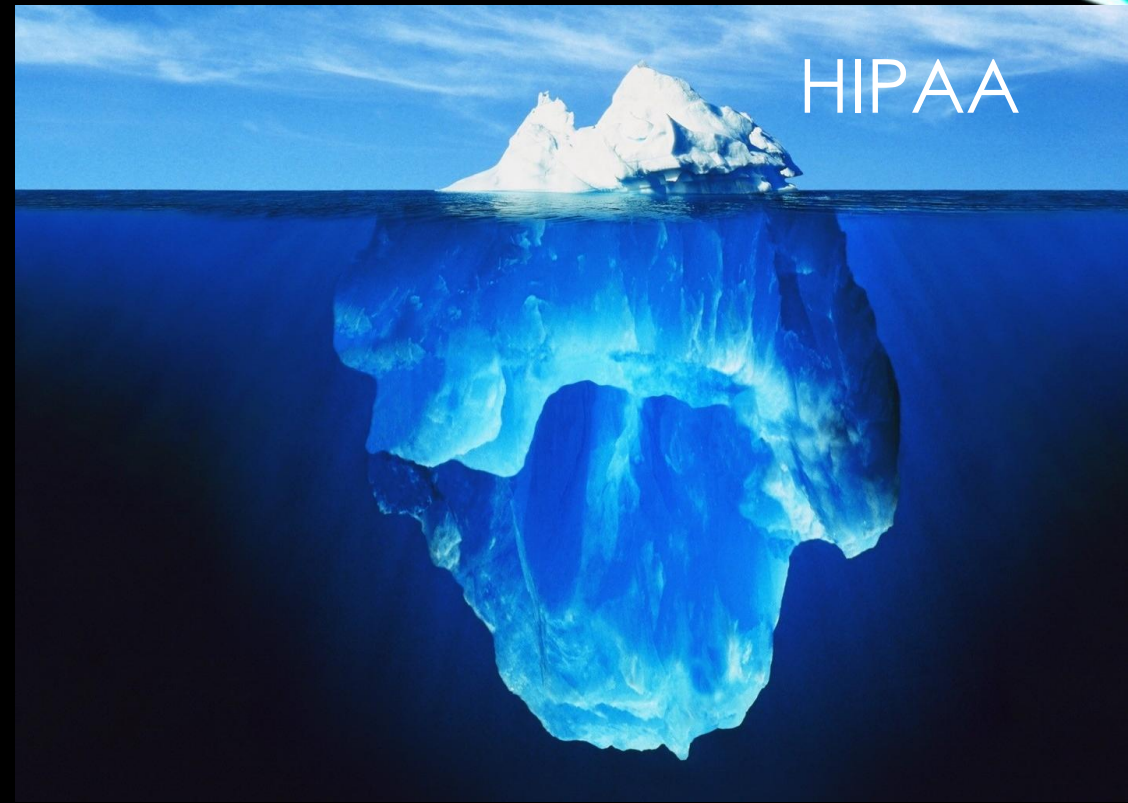
HIPAA, SAFETY AND VIDEO CONFERENCING

Is the data transmission secure? (encrypted end to end)

Does VC company have access?

Is the communication recorded? (data mining)

How secure is the data?



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HIPAA, SAFETY AND VIDEO CONFERENCING

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HIPAA, SAFETY AND VIDEO CONFERENCING

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Does VC company have access?

Is the communication recorded?
(data mining)

How secure is the data on either
end? (vpn, storage)

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VIDEO CONFERENCING



On-field Global
Worker Mental
Health
Applications

Video conferencing for telehealth

- It can definitely help
- Broader reach, low cost, less travel

Be safe

- Secure VC platform (private, HIPAA)
- Know which diagnoses can be cared for remotely
- Get the supportive information you need
 - Safe alternative contacts in their location
 - Backup communication

WHAT'S BEING DONE THROUGH VIDEO CONFERENCING ON-FIELD?



- Therapy and medication management
- Psychiatric evaluations when supported by a local therapist
- Initial logistical evaluation/plan
- Consultation with HR depts. and other specialists
- Supervision, training (CEUs)
- Job interviews
- Board meetings and other personnel tasks

TELEMENTAL HEALTH INSTITUTE

LIST OF VIDEO COMPANIES CLAIMING HIPAA COMPLIANCE

- CarePaths
- Doxy.me
- Secure Video
- TeleHealth 365, Inc.
- Thera-LINK
- VTConnect
- (and more on website)

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http://telehealth.org/directory/wpbdp_category/video

Are emails going away?

SOCIAL TRENDS AFFECTING HEALTHCARE AND TECHNOLOGY

TECHNOLOGY

Whoever Wins the White House, This Year's Big Loser Is Email



Farhad Manjoo
STATE OF THE ART

OCT. 19, 2016



Doug Chayka



State of the Art

A column from Farhad Manjoo that examines how technology is changing business and society.

- [AT&T-Time Warner Deal Is a Shot in the Dark](#) OCT 24
- [Zenefits, a Rocket That Fell to Earth, Tries to Launch Again](#) OCT 12
- [MailChimp and the Un-Silicon Valley Way to Make It as a Start-Up](#) OCT 5
- [A High-Stakes Bet: Turning Google Assistant Into a 'Star Trek' Computer](#) SEP 28
- [For the Debaters: What Shall We Do About the Tech Careening Our Way?](#) SEP 21

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More secure communication

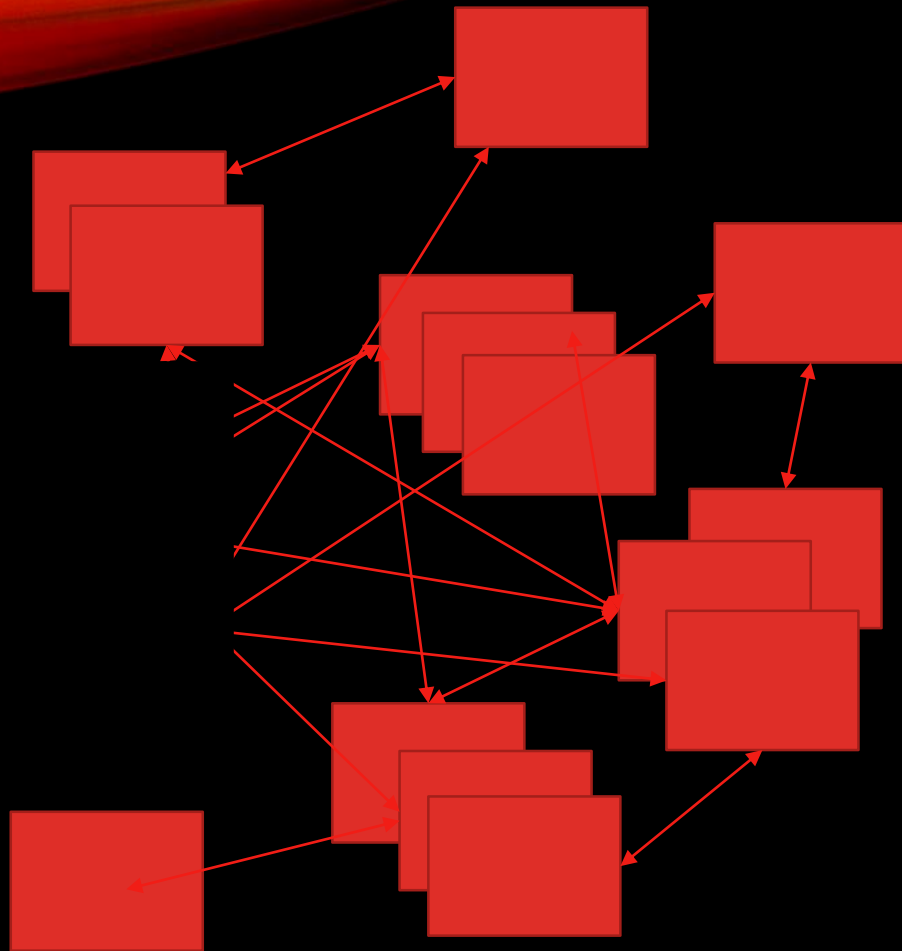


- Central administrator who archives messages and erases them when finished
 - Slack or HipChat
 - Microsoft Teams
- Encrypted messages
 - Signal

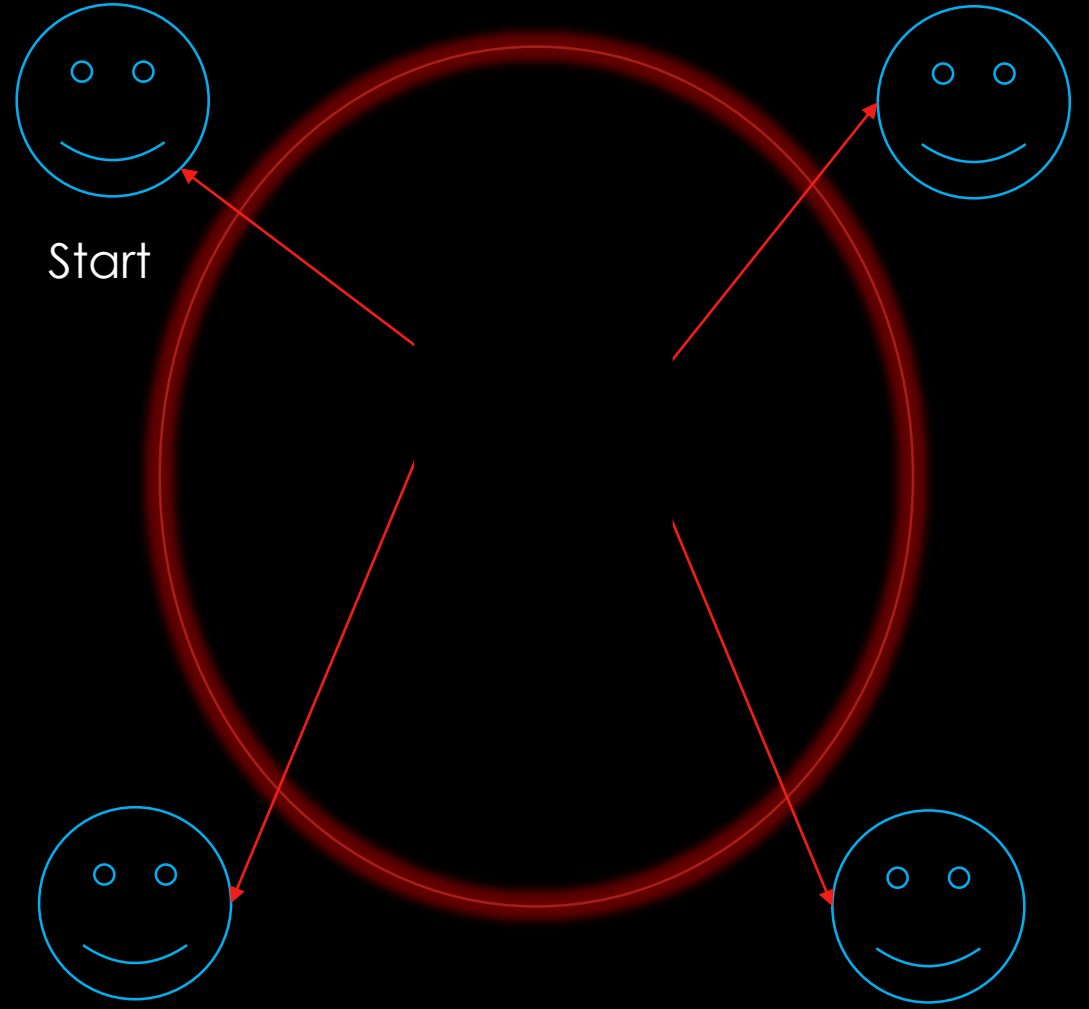
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Email



More secure communication



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WHAT'S BEING DONE ON-FIELD THROUGH TEXTING?



- Some communication if missionaries request it
 - Primarily for logistics and special circumstances
 - Adolescents prefer or assume this type of contact
- Some member care work
- Communication between staff
- No standard platform
 - What's App, Telegram

COMMUNICATE WITHIN SECURE PLATFORMS



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COMMUNICATE WITHIN SECURE PLATFORMS



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WHAT'S BEING DONE ON-FIELD THROUGH SECURE FILE SHARING PLATFORMS?



- Internal communication and emails
- Calendar sharing among therapists
- Intake paperwork before short-term therapy visit
- On-line psych assessment (ADHD, OQ45, CSI)
- Follow-up and assessments after therapy
- EMR/EHR possible - collaboration
- Penelope, Google Docs, Microsoft Share Point (Dropbox, Box.com)

WHAT'S BEING DONE ON-FIELD THROUGH OTHER ON-LINE COMMUNICATION TOOLS?



- Websites – most are informational, but **The Well** uses it as a patient portal or “front door” to everything they do
- Asynchronous topical therapy groups (**Tumaini**)
- Survey Monkey – for sending out event notification (**The Well**)
- Marketing – electronic newsletters
- Social media – not used

Increased
comfort and
desirability of
readily
available
information

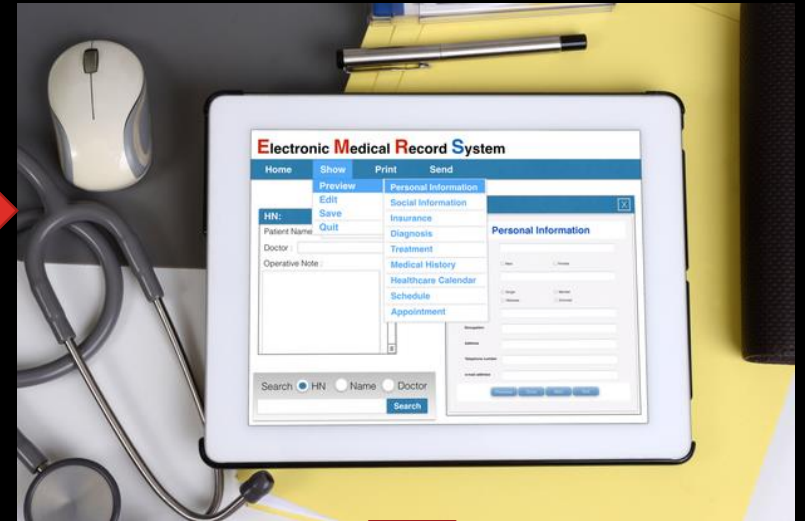
People tend toward being their own
doctor and patient

- Searching online for readily accessible knowledge
 - diagnoses and treatment
- Increased desire for health record access
 - Personal health records – greater personal control by patient (increased access, if not ownership)

SOCIAL TRENDS
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Electronic Medical Records

Paper Files



Electronic Health Records

EMR/EHR USE



Emerging Technology Trends in the Doctor's Office

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 - Patient Portals

SOCIAL TRENDS
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IMPROVE CLIENT INVOLVEMENT:

PATIENT PORTAL

Emerging Technology Trends in the Doctor's Office



Welcome Patty
View my dashboard

Logout

- Home
- Find a Doctor
- Ask a Question
- Are you a Doctor?
- Are you a Patient?
- Contact Us
- My Appointments

- My Messages 3
- My Results 1
- My Doctors
- My Medical Records
- My Consent Forms
- My Health
- My Account
- My Settings

Your next appointment is on June 1, 2012 at 3:15 PM

My Messages 3	My Results 1	My Health	Medications
My Consent Forms	My Account	Tell my Doctor	Add a Family Member

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- Desire for Personalized therapy with more client involvement

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IMPROVE CLIENT INVOLVEMENT: WAITING ROOM



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IMPROVE CLIENT INVOLVEMENT: WAITING ROOM

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WHAT'S BEING DONE ON-FIELD TO PROMOTE AND PROVIDE FOR SELF-HELP AND FOLLOW-UP CARE?



- Resources are being made available
 - Ron and Bonnie Koteskey's website
 - www.missionarycare.com
 - MMCT's website
 - mmct.org
 - Many others....

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 - Patient Portals (will be discussed later)
- Desire for Personalized therapy with more client involvement
- Using apps for self-therapy
 - comfort with personalized apps for therapy
 - VA has a library, leading the way



- Health
- Benefits
- Burials & Memorials
- About VA
- Resources
- Media Room
- Locations
- Contact Us

- VA Mobile Health
- Developing VA Apps
- VA App Store
- All Apps
- Apps for Veterans
- Apps for Health Care Professionals
- Categories
- Platform
- Test Our Apps
- Provider Program
- Field Tests

⚠ Please make sure your device's browser is up to date to make sure the app works correctly. [Learn more.](#)

All Apps Veterans Health Care Professionals



Welcome to the VA App Store! Here you will find access to more than a dozen apps, including those created specifically for Veterans and their Health Care Professionals.



anxiety

Benefits Health Mental Health [Mobile Icons] Clear Filters



Search results for "anxiety"

ACT Coach
★★★★★

Mindfulness Coach
★★★★★

PE Coach
★★★★★



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[All Apps](#) [Veterans](#) [Health Care Professionals](#)



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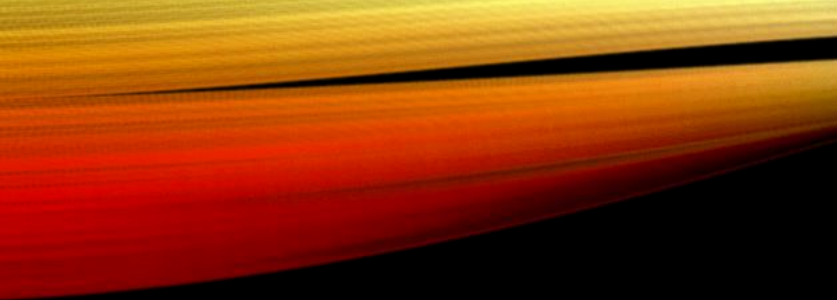


Search results for "trauma"

Caring4WomenVeterans
★★★★★

CPT Coach
★★★★★

PE Coach
★★★★★



Do you want
your own app?

SOCIAL TRENDS
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Meet the Schaefer Charlie Ph.D Mobile App!

That's right - we created a mobile app for your business!



I'm Scott from Appsme and our team has already done the hard work for you. All that's left is for you to customize it. Hit the big button below to preview the Schaefer Charlie Ph.D app and learn more about the changes you can make and amazing features your can add.

[Preview my app →](#)

We hope you love your new app! If you need help from us, simply reply to this email.

FRAUKE'S FAVORITE APPS? (FROM A SELF-CONFESSED "APP-AHOLIC" GLOBAL WORKER PSYCHIATRIST)

- Mind Shift – anxiety
- Thought Work – CBT
- iChill – trauma resilience
- CBT iCoach – insomnia
- Lusity – relaxing sounds



Increased
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SOCIAL TRENDS
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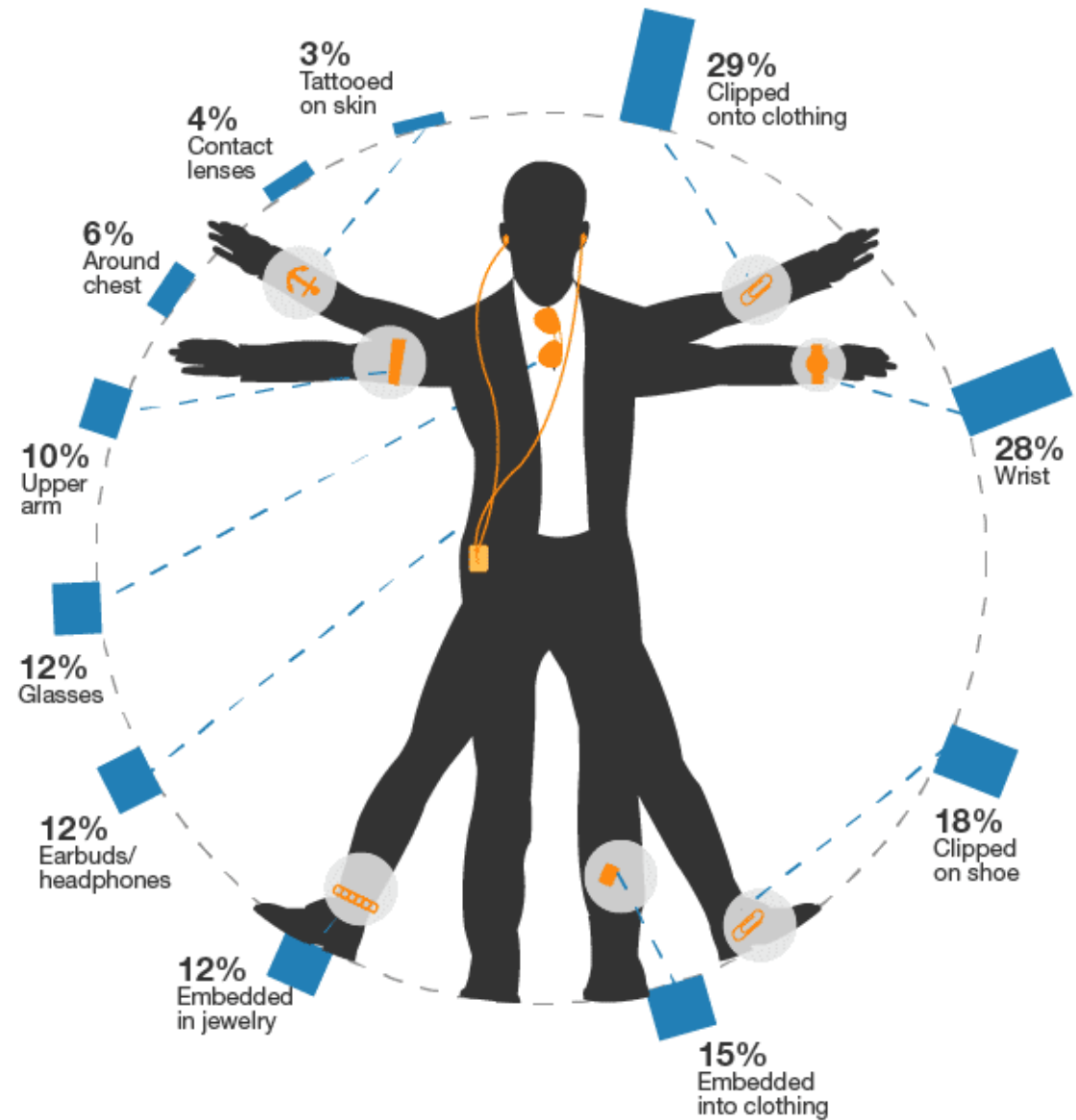
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- Desire for Personalized therapy with more client involvement
- Using apps for self-therapy
 - comfort with personalized apps for therapy
 - VA has a library, leading the way
- Increased comfort with wearable monitoring devices

Increased comfort with wearable devices and remote monitoring

SOCIAL TRENDS AFFECTING HEALTHCARE AND TECHNOLOGY

"How would you be interested in wearing/using a sensor device, assuming it was from a brand you trust, offering a service that interests you?"



Base: 4,657 US online adults (18+)
(multiple responses accepted)

Increased use of
virtual reality –
gaming,
inexpensive,
Google glasses,
etc.

SOCIAL TRENDS
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TECHNOLOGY AS THERAPEUTIC

Computers and Therapy

- Internet-supported interventions
 - Web-based therapy
 - Self-guided treatments
 - Therapist assisted online self-help
 - Tumaini online support groups
- Computerized therapy
- Virtual reality therapy
- Video game therapy
- Therapeutic robots

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<https://www.ai-therapy.com/articles/computers-and-therapy>

MACHINE LEARNING

ARTIFICIAL INTELLIGENCE



Computerized therapy

- Software administers interventions with no (or limited) therapist involvement
- Computer is actively part of the therapy, not just a means of delivery
- Personalized treatment plan through algorithms
 - CBT can work well
- Available over the internet, smartphone apps, standalone programs, or embedded in robots

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Increased use of virtual reality – gaming, Google glasses, etc.



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1-16 of 4,855 results for "google cardboard"

Sort by Relevance ▾

Show results for

Electronics >

- 3D Viewing Glasses
- Video Display Glasses
- Audio & Video Accessories
- + See more

Cell Phones & Accessories >

- Cell Phone VR Headsets
- Cell Phone Accessories
- Cell Phone Cases, Holsters & Clips
- Cell Phone Accessory Kits
- Cell Phone Cables
- Cell Phone Cases
- Cell Phone Car Cradles & Mounts

Video Games >

- Video Game Accessories

Camera & Photo >

+ See All 27 Departments

Refine by

Amazon Prime

Prime

Eligible for Free Shipping

Free Shipping by Amazon



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A New Way To Watch Virtual Reality

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D-scope Pro Google Cardboard...



Google Cardboard V2 with Str...



Black Google Cardboard Kit ...



Best Seller

Google Cardboard, Topmaxions 3D VR Virtual Reality DIY Glasses For 3D Movies and Games Compatible with Android & Apple Up to 6 Inch Easy Setup Machine

by Topmaxions

\$11.99 ~~\$19.99~~ Prime
Get it by **Tuesday, Nov 1**

More Buying Choices
\$9.85 new (6 offers)

★★★★☆ 317

FREE Shipping on eligible orders

Product Features

... *GOOGLE CARDBOARD* is the primary experience version of 3D VR Glasses. ...

[Electronics: See all 597 items](#)



Blisstime Google Cardboard 3d Vr Virtual Reality DIY 3D Glasses for Smartphone with NFC and Headband

by Blisstime®

\$7.99 ~~\$19.99~~ Prime
Get it by **Tuesday, Nov 1**

★★★★☆ 435

FREE Shipping on eligible orders

Product Features

Can achieve all the function of *Google* virtual reality glasses.

[Cell Phones & Accessories: See all 3,433 items](#)

VIRTUAL REALITY THERAPY?

An automated audiovisual treatment of phobias administered by non-professionals

Article in *Journal of Behavior Therapy and Experimental Psychiatry* 6(2):111-115 · August 1975 with 4 Reads

DOI: 10.1016/0005-7916(75)90034-8



1st [Myron S. Denholtz](#)



2nd [Edward T. Mann](#)

Abstract

This study describes the combination of desensitization, modeling and positive reinforcement in a totally automated audiovisual program designed for use by non-professionals to treat flight phobics. Of 51 subjects who completed the program, 40 were able to fly after treatment. Also, significant positive change was noted on the Taylor Manifest Anxiety Scale for those subjects who overcome their fear of flying.

www.researchgate.net/publication/222282700_An_automated_audiovisual_treatment_of_phobias_administered_by_non-professionals

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VIRTUAL REALITY THERAPY?

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[Previous Article](#)

Volume 135, Issue 11, November 1978, pp. 1340-1343

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Automated treatment for flight phobia: a 3 1/2 year follow-up

Published online: April 01, 2006 | <http://dx.doi.org/10.1176/ajp.135.11.1340>

[Abstract](#) [PDF](#) [PDF Plus](#)

Abstract

The authors contacted 43 patients who had been given audiovisual treatment for flight phobia 3 1/2--5 1/2 years previously. Of the 26 subjects who had flown successfully by the end of treatment, 23 had maintained their ability to fly at follow-up. Eighteen said their attitude toward flying was more positive since treatment, and 21 rated their comfort level while flying as "much better" or "better"; however, only 3 said they were "cured." Eleven patients said the treatment had helped to alleviate other fears or anxieties.

We also recommend:

A direct-interview family study of generalized social phobia.

M B Stein et al., *American Journal of Psychiatry*, 1998

Risk of heavy drinking and alcohol use disorders in social phobia: a prospective analysis.

R M Crum et al., *American Journal of Psychiatry*, 2001

Treatment of fear of flying.

L Solyom et al., *American Journal of Psychiatry*, 1973

VR VIDEO GAME THERAPY

- Games are being developed that target specific psychological issues
- User navigates a fantasy world
- Tasks and challenges designed to teach good mental health skills and techniques
 - E.g., challenge their negative thoughts or practice self-calming skills

Emerging
Technology
Trends in the
Doctor's Office



SPARX

- Free (in NZ) online 3D VR game using an avatar
- “first scientifically-proven ‘gamified’ online therapy for depressed young people”
- Targets depression, stress, or anxiety in young persons
- Teaches how to resolve issues on their own using CBT skills
- Prescreen with personality test

Emerging
Technology
Trends in the
Doctor's Office



www.sparx.org.nz

...from the on-field clinics

- IT support to set up systems and work with information
- Awareness of safety/HIPAA concern
- Help establish an electronic office
- Install tech that helps speed up writing or speaking clinical records
- More consultations available
- Psychiatrists and other specialists
- Online global worker library
 - Kindle books?
- Improve video conferencing
- Life sized projectors (real feel)
- VR with 180/360 deg cameras to know client's world better
- Avatar based therapy
- Support groups for workers
- Protected privacy and security
- Track facial features/nonverbal
- Increased networking (Bulletin Board?) about IT use for MHM

DREAMS
TECHNOLOGY PLATFORM

HELP WANTED



Clinic Contacts:

The Well (Sorin@TheWellCM.com)

Tumaini (gisela.roth@aimint.org)

Olive Tree (John@OliveTreeCounseling.org)

Cornerstone (kathya@ccfthailand.org)

Online library for
global workers

OT, Tumaini

Clinical IT Tech
support

The Well, Tumaini, OT

Webinar tech.
developer

The Well, OT

Excel Pivot Tables and
ODBC protocol

OT

Effective online
marketer

The Well, OT

Clinicians

The Well, Tumaini, OT, Cornerstone

TECHNOLOGY IDEAS FOR MHM?

- This presentation can be downloaded from

www.TraumaResilience.com/TrainingMaterials.html



Technology and the new mission field

Mars



SpaceX CEO **Elon Musk** has given more details about his plan to colonize Mars.

Musk answered questions on Reddit on Sunday. The session was a follow up to Musk's comments at a space conference in Mexico last month during which he unveiled his plan to send up to 1 million people to Mars within the next 40 to 100 years.



Photo: Refugio Ruiz, AP



IMAGE 1 OF 3

FILE - In this Sept. 27, 2016, file photo, SpaceX founder Elon Musk speaks during the 67th International Astronautical Congress in Guadalajara, Mexico. Musk elaborated on his plans to colonize Mars in a Reddit session Sunday, Oct. 23, 2016. [less](#)

Technology and the new mission field

Mars



FEATURE

Robo therapy

A new class of robots provides social and cognitive support.

By Kirsten Weir
June 2015, Vol 46, No. 6
Print version: page 42



A child with autism spectrum disorder sits in a room with his mother. Across from them is a robot, with a human-like head and upper torso perched atop a rolling platform. The child backs away, and the robot hangs its head and whimpers. The child moves closer, looking the robot in the face. When he does, the robot responds with smiles, happy sounds and a cascade of bubbles.

It sounds like a game, but this so-called "bubblebot" is an important early step in the budding field of socially assistive robotics. The bubblebot was designed to help children with autism develop social skills, but the possibilities for therapeutic robots don't end there. Socially assistive robots could provide companionship to lonely seniors, teach coping skills to adolescents with depression or even help someone quit smoking or lose weight.

Robot therapy isn't as out there as it sounds. For decades, robotic systems have helped provide physical therapy, says Brian Scassellati, PhD, a social robotics researcher at Yale University. Recovering stroke victims, for instance, have used a robotic system to help guide their limb movements during physical rehabilitation exercises. "Socially assistive robots don't offer physical support, but rather cognitive or social support," he says. "Anytime you could use a good personal coach or trainer, we're starting to see robots involved in that kind of application."

While children with autism spectrum disorder often have trouble interacting with human peers or adults, many of these children are drawn to technology. Dozens of research groups worldwide have begun exploring robots for children with autism, Scassellati says. "In almost all the cases, you see kids with autism get very excited to interact with the robot, and they have sustained interest."

Digital edition

- See Dr. Maja Mataric discuss using robots in the treatment of autism.

Related APA Resources

- Newsletter Article (2210)
- Web Page (1672)
- Magazine Article (1008)
- Newsletter (394)
- Scholarship/Grant/Award (321)

[More resources \[+\]](#)

Letters to the Editor

- [Send us a letter](#)

- ## Therapeutic robots are being developed
- New field of socially assistive robotics
 - Help children with autism develop social skills
 - Teaching coping skills to depressed adolescents
 - Companionship to lonely seniors

Therapeutic Robots for Lonely Astronauts

Technology and the new mission field

Mars



The screenshot shows a news article on the Space.com website. The article title is "Japan's Kirobo Talking Robot Chats With Astronaut in Space for 1st Time (Video)". The author is Megan Gannon, News Editor, and the date is December 20, 2013, 10:46am ET. The article includes a video player showing a man in a space station talking to a small white robot. The video title is "Human and Robot Talk for the First Time in Space | Video". The article text below the video reads: "In a milestone for robot-human relations, the talking Japanese robot Kirobo had its first conversation with an astronaut in space. Astronaut Koichi Wakata of the Japan Aerospace Exploration Agency (JAXA)..."

Space.com > Tech

Japan's Kirobo Talking Robot Chats With Astronaut in Space for 1st Time (Video)

By Megan Gannon, News Editor | December 20, 2013 10:46am ET

Replay Share Embed Info

Title: Human and Robot Talk for the First Time in Space | Video

In a milestone for robot-human relations, the talking Japanese robot Kirobo had its first conversation with an astronaut in space.

Astronaut Koichi Wakata of the Japan Aerospace Exploration Agency (JAXA)

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