

Reclaiming the Time Between Visits

Build Relationships, Improve Health Literacy & Outcomes



Eran Kabakov, DPT
CEO & Co-founder
Docola

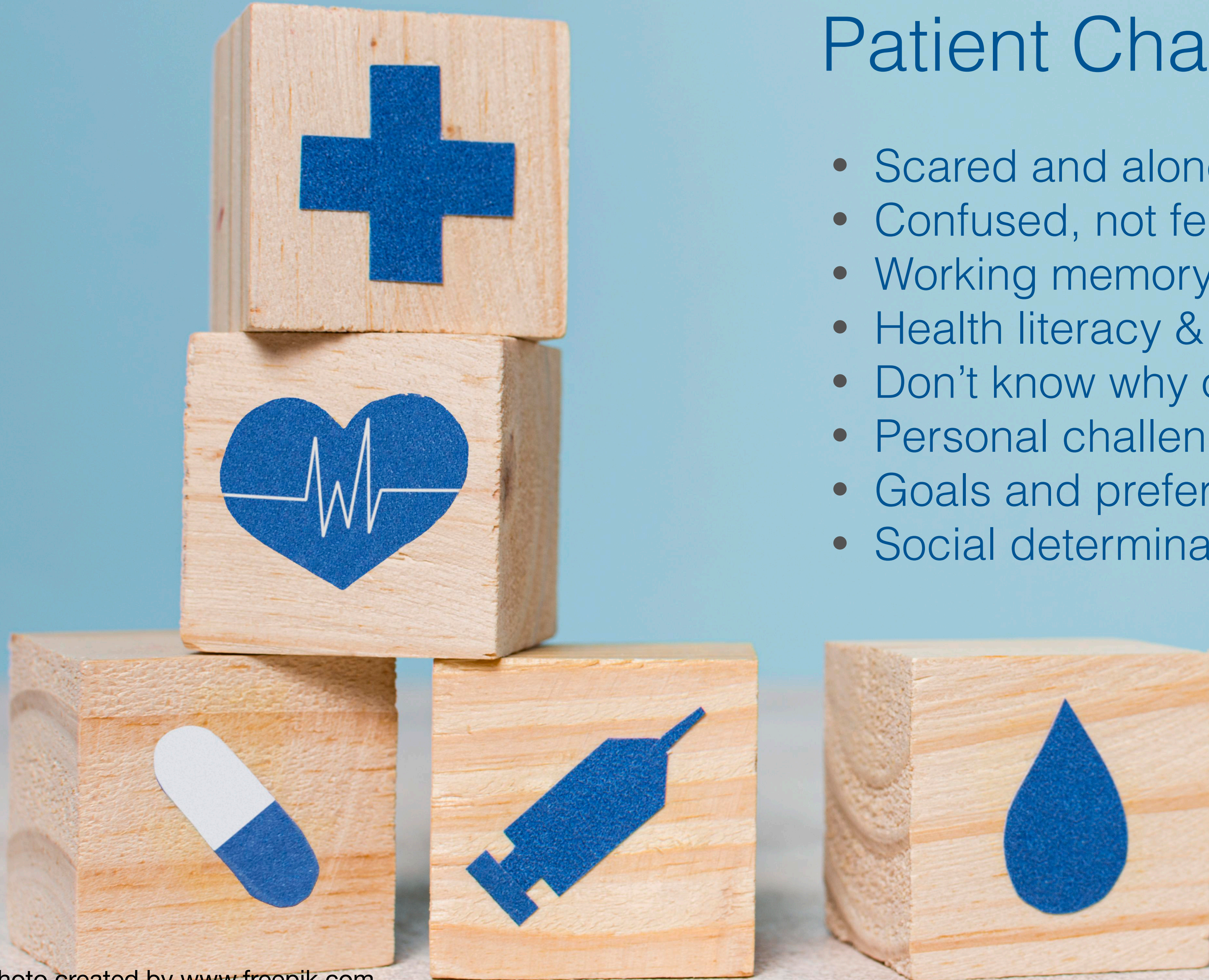


Geri Lynn Baumblatt, MA
Chief Engagement Officer
Docola



Patient Challenges

- Scared and alone
- Confused, not feeling well
- Working memory
- Health literacy & literacy
- Don't know why or how
- Personal challenges
- Goals and preferences
- Social determinants of health

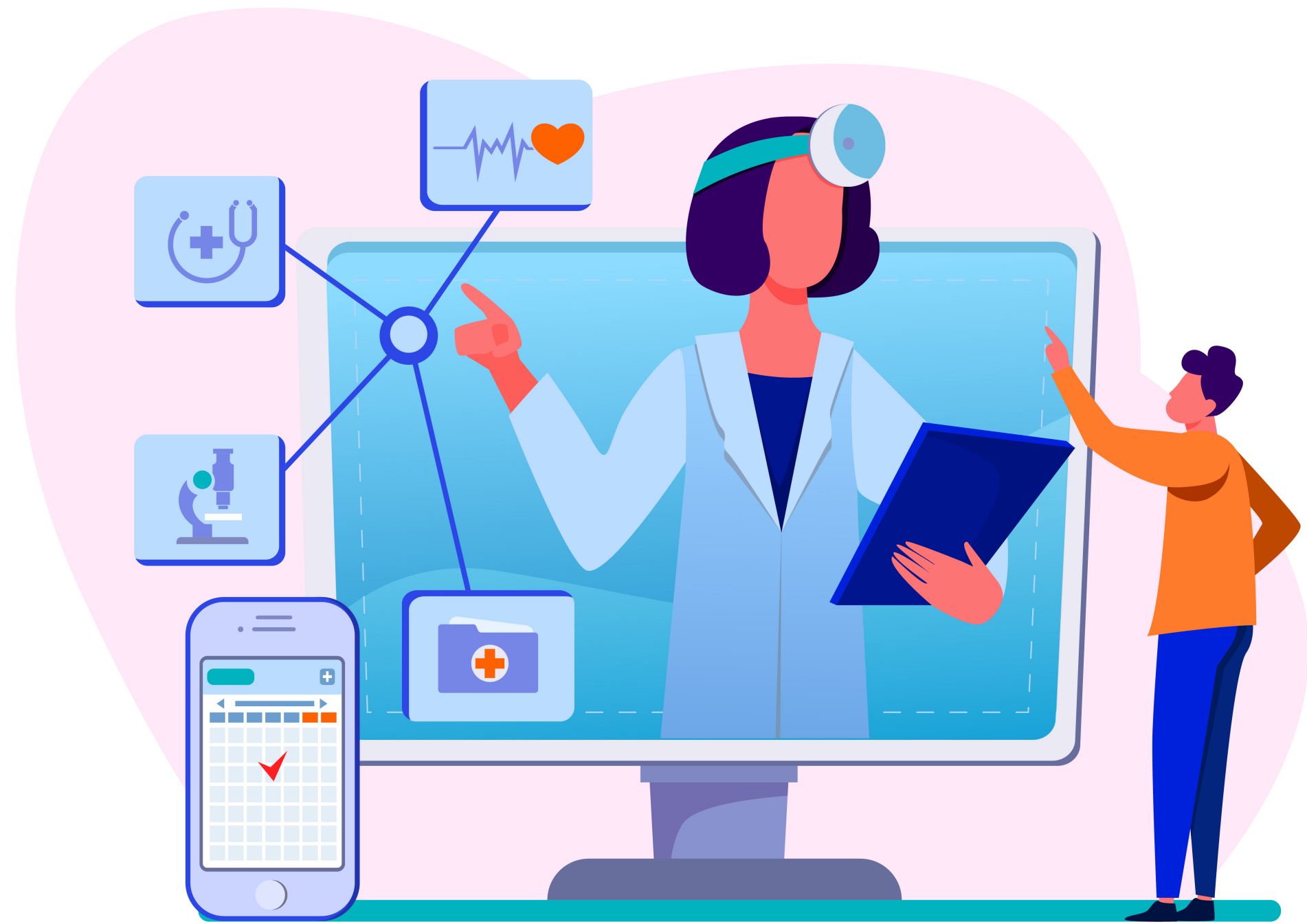




Care Team Challenges

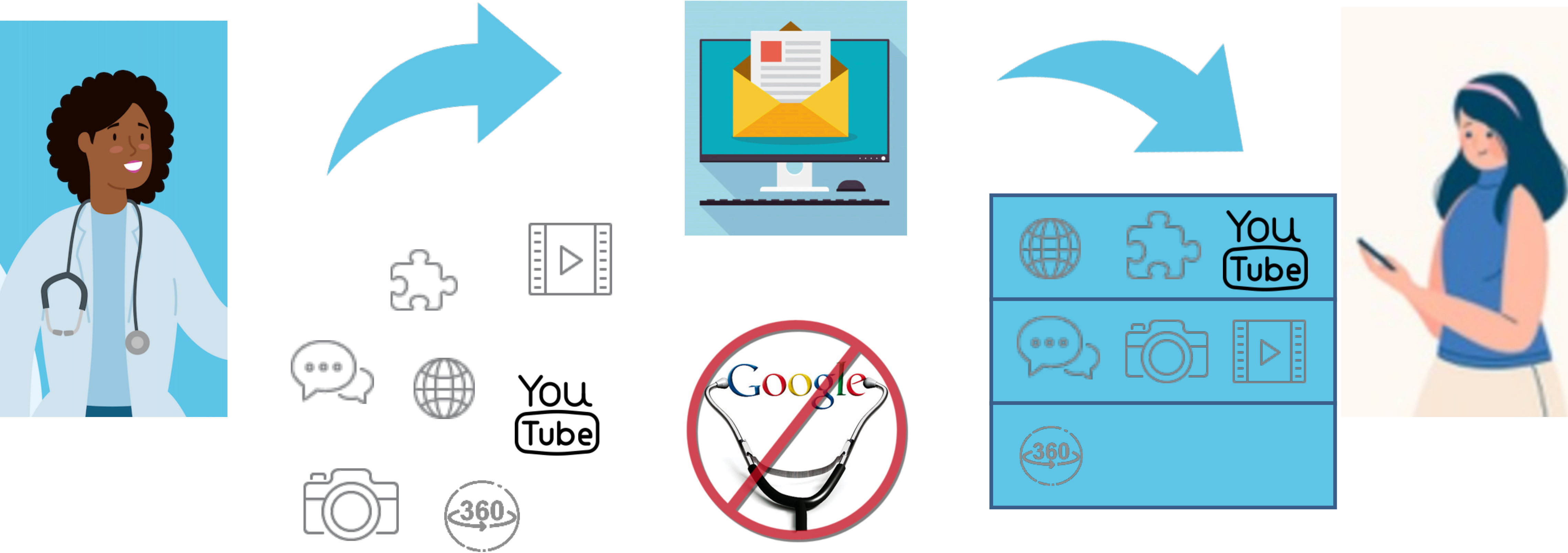
- Time/efficiency
- Consistency
- Cost
- Personalization
- Ensuring understanding
- Charting and documentation
- Dr. Google & social media

Why ePrescribe information?



- People only recall 20% of in-clinic education
- Flip the clinic: pre-educate
- Meet info needs, prevent web search
- Make information actionable
- Build relationships and trust
- Track and document
- Save time: no repeating basic info
- Have better conversations

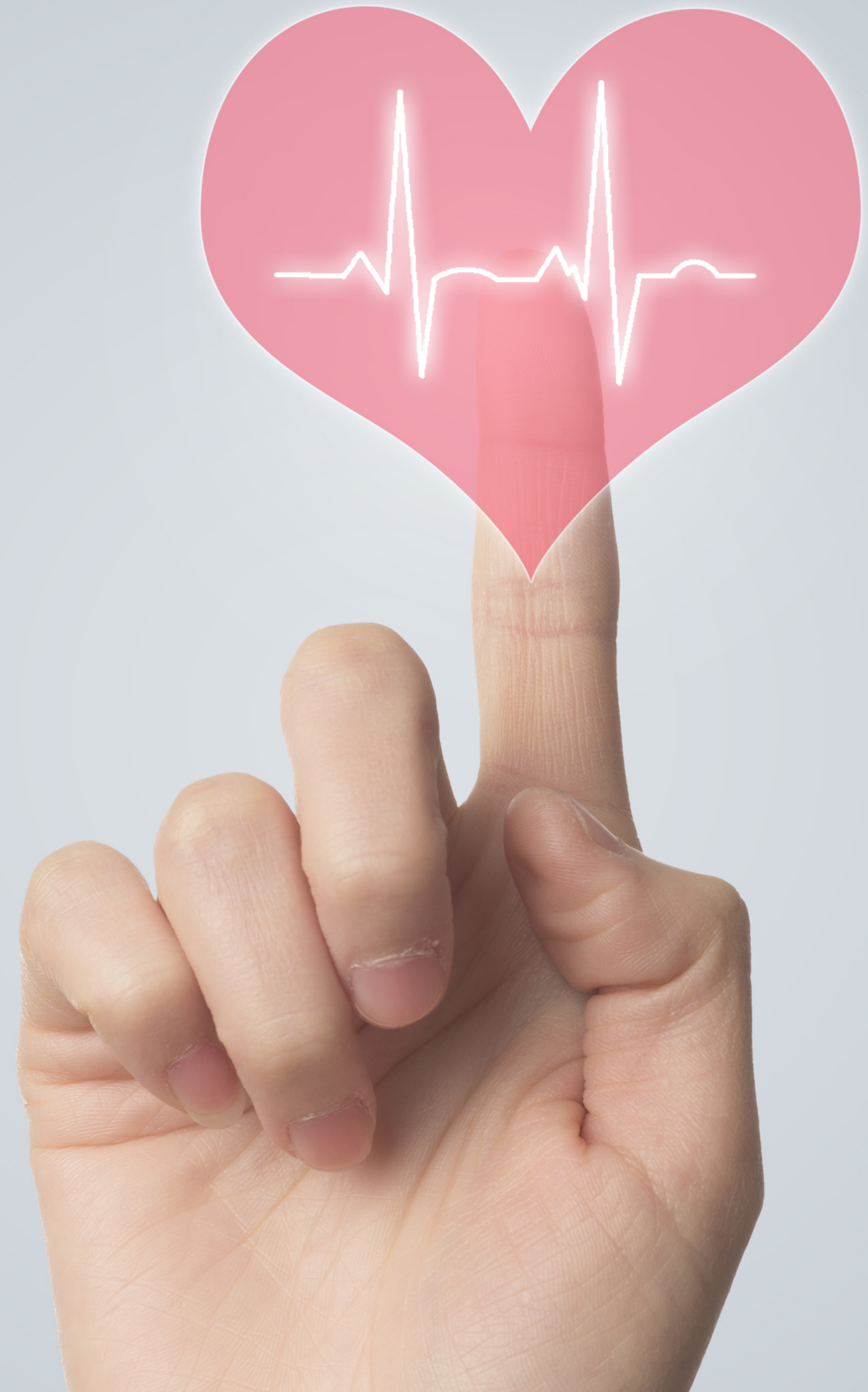
e-Prescribe Education: Information Therapy



Asynchronous Engagement

Benefits Patients & Care Partners

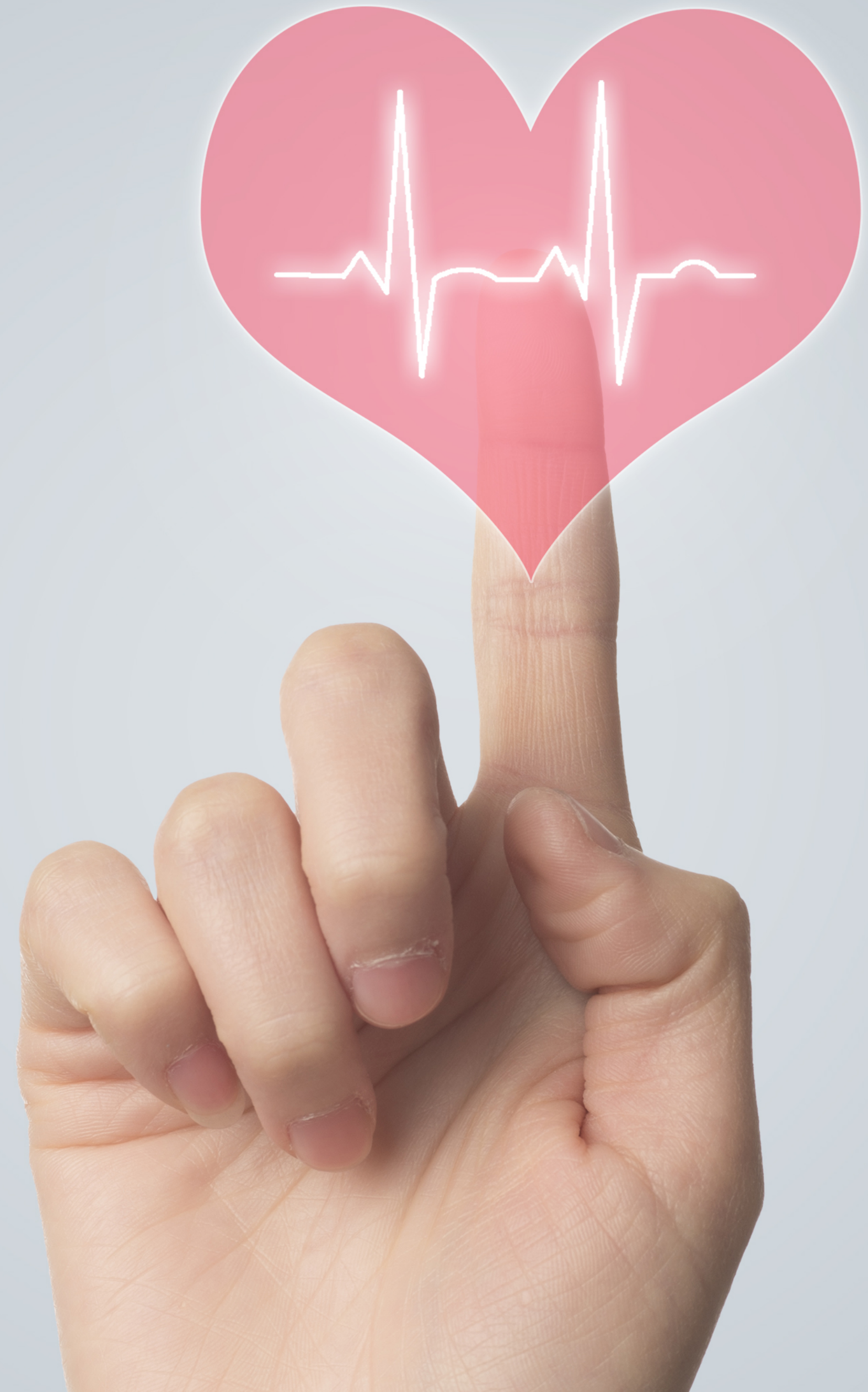
- Understand and recall
- Informational needs are met
- Confidence and self-efficacy
- New health behaviors
- Participation (adherence)
- Health outcomes and QoL
- Normalizes questions and topics
- Safe/emboldened to ask Q & honestly disclose
- Reduced anxiety and loneliness
- Feel cared for



Asynchronous Engagement

Benefits the Care Team

- Build trust & relationships
- Better conversations/experience
- Appropriate use of web (Dr. Google)
- Efficiencies
- Consistency
- Confidence they understand
- New insights
- Quality & safety
- Documentation



Demo: ePrescribing Patient Education

Trust: Universal Dimensions of Social Cognition¹⁻²

Warmth

Do you have my best interests at heart?

Competence

Do I believe you know what you're doing?

Am I safe? Do I matter to you?



1. Cuddy et al, 2011. 2. Kulms & Kopp, 2018.

Trust & Health Literacy³

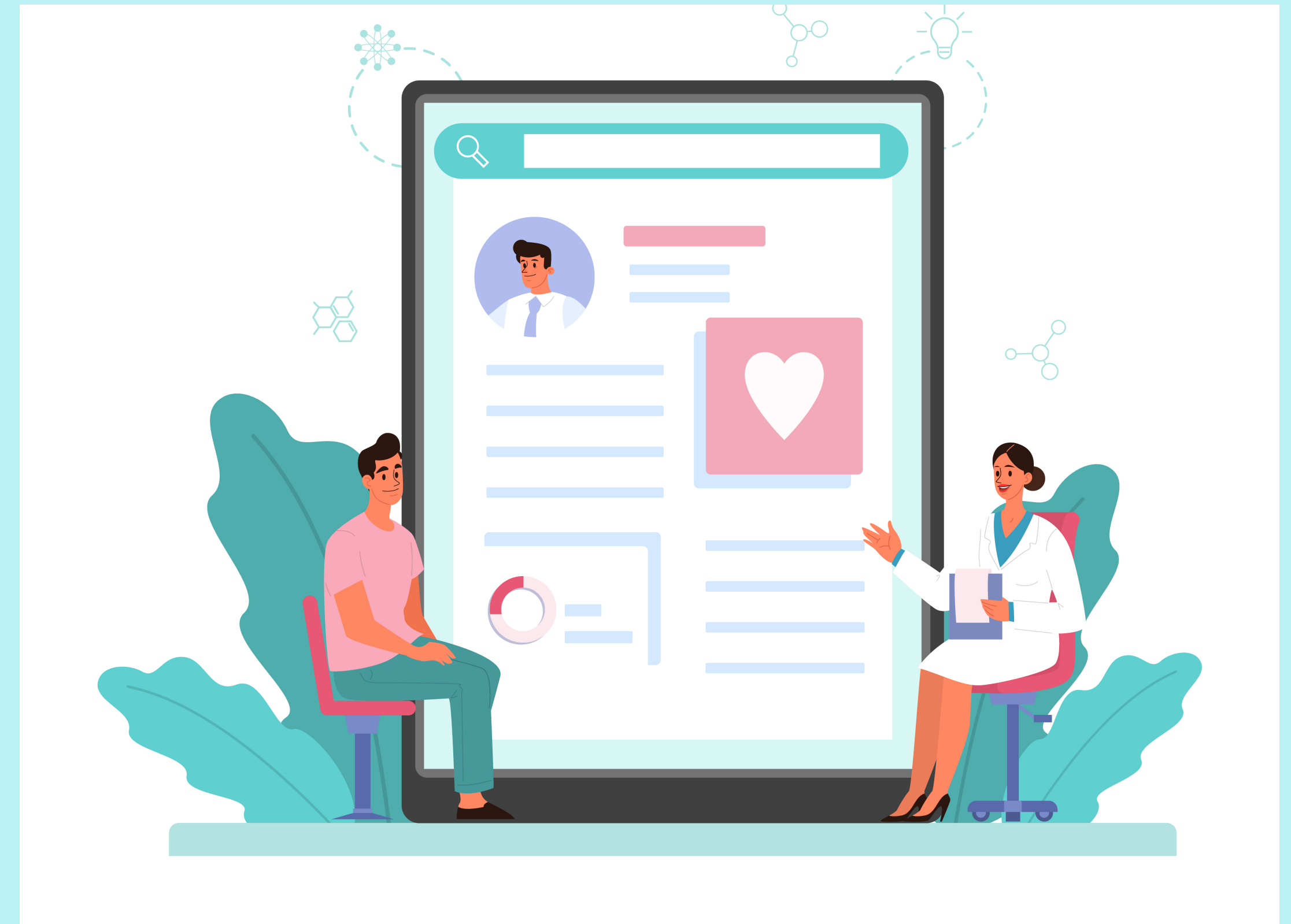
Patients can't appraise online health info

Engagement barrier: when HCP's info didn't match web search

Initially people value knowledge & technical competence

Once engaged, focus shifts to feeling valued as a person:

- Person-centered care
- Easy to understand
- Felt listened to and understood

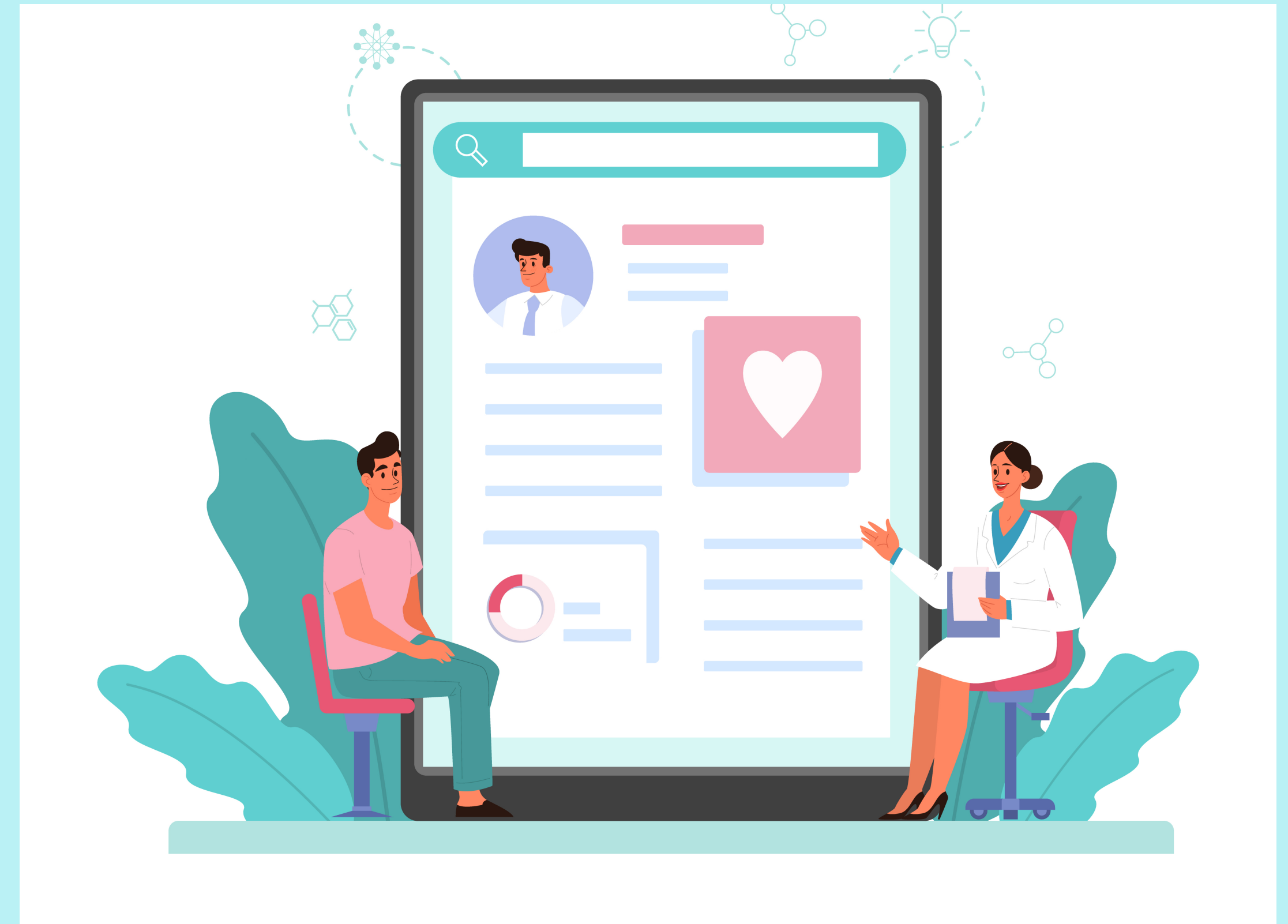


Prescribing Information⁴

When clear info is prescribed to patients, they:

- Find the info more helpful
- Are more likely to be adherent
- Rate clinician's performance highly

There's positive relationship between prescribed information and self-reported health literacy.



Engaging Patients



Jessie Gruman
bit.ly/GrumanPE

People need to know their participation is:

- Important
- Possible
- Safe

Important: Explain Why



Nicotine & healing



Dental work



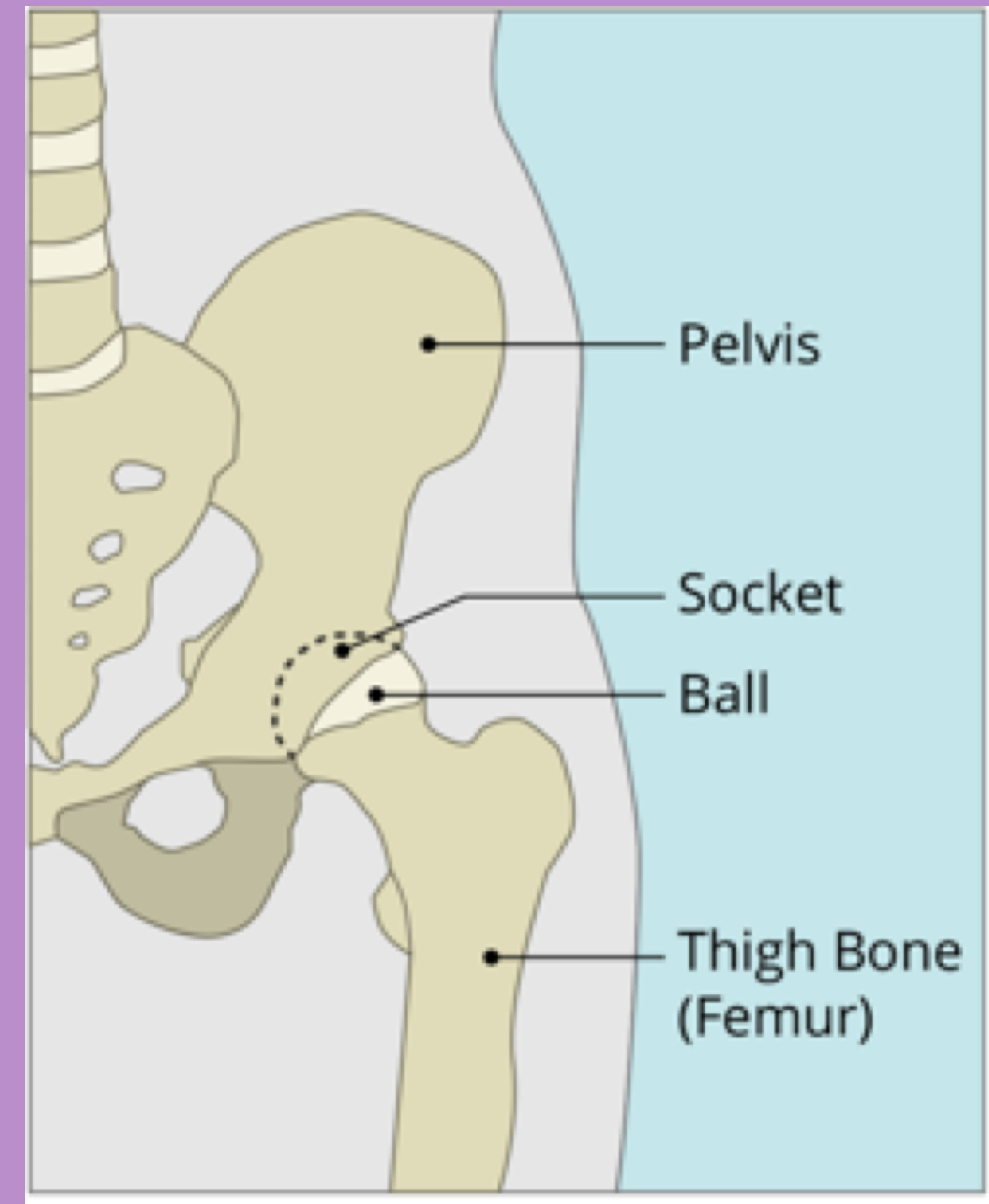
Shaving



Reduce sodium

Important: Advance Care Planning

- Causality logic
- Marker of frailty
- Emotional resistance:
need time to process info



Possible: How to & can they?

- Avoid sodium?
- Know how to take meds?
- Read instructions: literacy or vision?
- Afford the co-pay?
- Open the bottle or package?
- Swallow those pills?
- Inject insulin correctly?
- Have a care partner who can help?



Possible

Post-op Depression

- Surprising
- Surgery as trauma
- Cultural understandings of “depression”



Safe

Opioids

Worried won't
get enough

Still have pain

Can't sleep



Worried they'll
get **any**

Constipation

Addiction

Safe: Ask Embarrassing Questions



When is it OK to have sex? Will it be different?



What if I have hemorrhoids?



What if I don't have someone who can drive me home?

Safe: Psychological Safety

Improves honest responding¹⁻²

Effect especially strong when info is stigmatized³

Creates a “sense of invulnerability to criticism... privacy, and an impression their responses ‘disappear’ into the computer.”⁴

Time constraints, shame and fear of stigma aren’t as prevalent⁵

“A human being would be judgmental. I shared a lot of personal things and it was because of that” [a real person wasn’t asking]⁴

Important

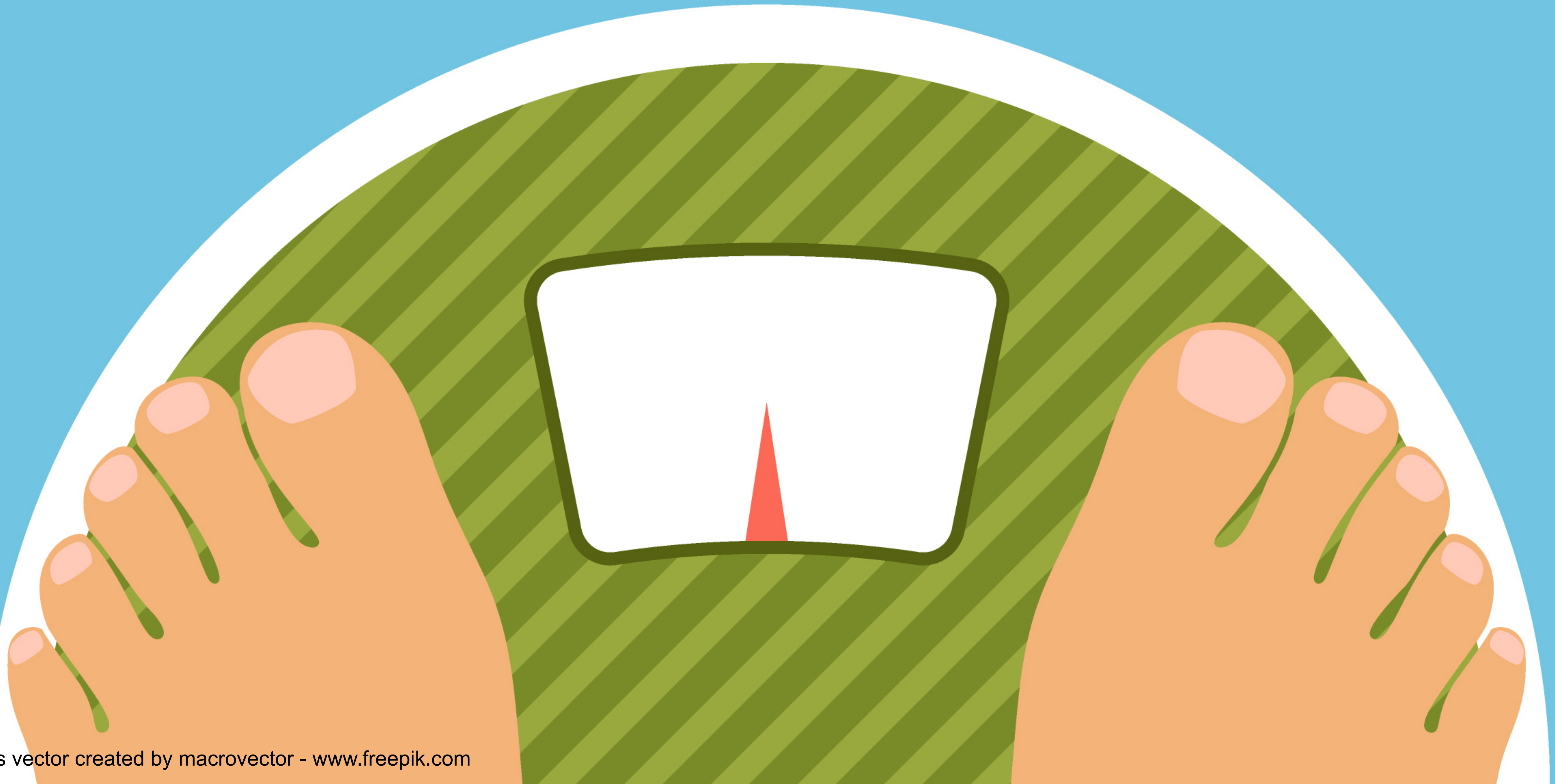
Why take daily weight

Possible

Have a scale that's accurate

Safe

To stand/balance



Reduced Readmissions, LOS, and ED Visits

171 HF Patients¹

- Multimedia reduced readmission by 30% (24 vs 44 readmits in control group)
- Improved knowledge and self-care at 3 and 12 months

258 CABG patients who viewed videos before surgery²

- Felt significantly better prepared for recovery
- Reported higher self-efficacy for incentive spirometer use and did more reps each time
- Had shorter ICU stays
- Were released from the hospital more quickly

Asynchronous support of stroke survivor care partners³

Patients had:

- Lower readmission rates
- Significantly fewer ED visits

1. Boyde et al, 2017: doi:10.1177/1474515117727740

2. Maher & Kulik, 1998: doi:10.1097/00008483-199905000-00004

3. Pierce et al, 2009: doi:10.1080/09638280902751972

Outcomes from Improved Understanding

MEDICALNEWS TODAY

Instructional Web-Based Video Decreases Patient No-Shows For Colonoscopy

Adapted Media Release | Published Monday 21 May 2012

THE AMERICAN JOURNAL *of* MEDICINE®

Official Journal of the Alliance for Academic Internal Medicine

Online Educational Video Improves Bowel Preparation and Reduces the Need for Repeat Colonoscopy Within Three Years

[Umar Hayat](#), MD^a, [Peter J.W. Lee](#), MBChB^b, [Rocio Lopez](#), MPH^c, [John J. Vargo](#), MD, MPH^b, [Maged K. Rizk](#), MD^{b,*},  

JOURNAL OF CLINICAL
GASTROENTEROLOGY

A Web-based Multimedia Program Before Colonoscopy Increased Knowledge and Decreased Anxiety, Sedation Requirement, and Procedure Time.

[Parker S](#)^{1,2}, [Zipursky J](#)², [Ma H](#)², [Baumblatt GL](#)³, [Siegel CA](#)^{1,2}.

Impact of Asynchronous Care

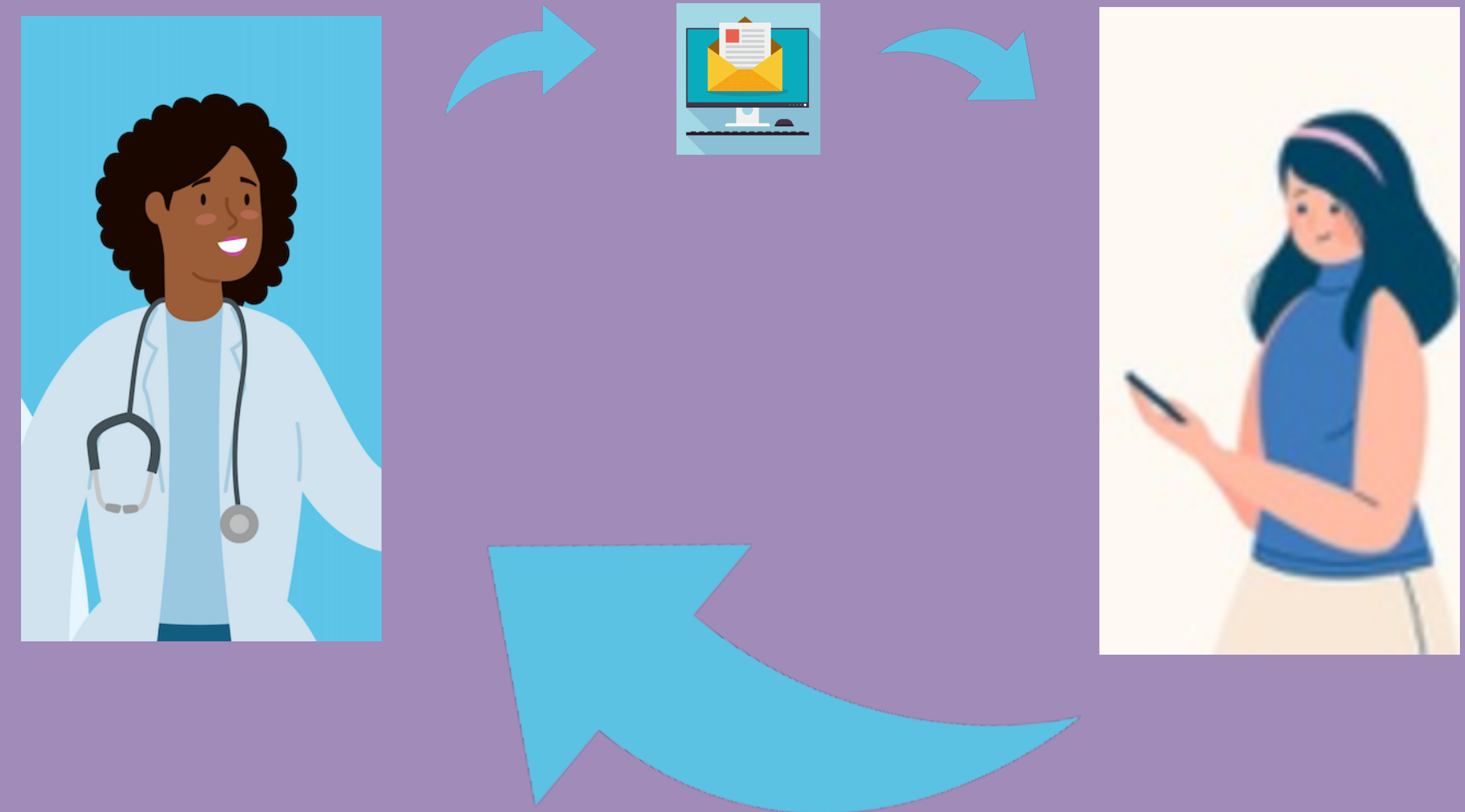
Patients' writings revealed challenges HCPs previously hadn't considered significant¹

Insights informed what to emphasize to patients and changes to patient ed¹

Prevented dropouts and deterioration of patients' health¹

Rated appropriateness of patient questions higher²

Better and more efficient visits²



Improved Efficiency

Significantly less time spent on patient education¹ & 4

Less time on phone with diabetes patients²

More ortho patients (58% vs 33%) reached an informed decision during the first visit³



1. de Leew et al, 2019: doi.org/10.1002/pd.5463 2. Menenghini et al, 1998: doi.org/10.2337/diacare.21.4.591 3. Bozic, et al, 2013: doi DOI: [10.2106/JBJS.M.00004](https://doi.org/10.2106/JBJS.M.00004) 4: Sim & Galbraith, 2020: doi:10.1016/j.pec.2020.05.003

Time vector created by www.freepik.com

Better Relationships & Experiences

People felt more connected to healthcare team¹

Positive effect on patient-doc relationship²

People prefer online health info from HCP & use Dr. Google less, improving interactions³

People turn to technology to fill knowledge gaps⁴

More likely to rate consult as excellent⁵



1. Zan et al, 2015: doi: 10.2196/mhealth.3789. 2. Choy et al, 2020: doi 10.2196/19256 PMID: 32924959 3. Lee, et al, 2017: doi.org/10.2196/jmir.7489 4. Kraschnewski et al, 2017: DOI: 10.2196/jmir.3385 5. Boudreault et al, 2016: doi:10.1097/SAP.0000000000000557

Emerging Effects & Opportunities

Self advocacy¹

Improved Social Support²

Less lonely and isolated³⁻⁴
& psychosocial improvements⁵

Family caregiver efficacy⁶

Clinician Professional Fulfillment (PFI) & Burnout



1. Hoffman et al, 2017: doi:10.1002/cncr.30489 2. Weinert et al, 2008: PMCID: [PMC2700733](https://pubmed.ncbi.nlm.nih.gov/32924959/): 32924959 3. Seavy, K, n.d. <https://elementcare.org/resources/professionals/> 4. Weinert et al, 2011: doi.org/10.1097/NNR.0b013e3181ffbcf2. 5. de Jong et al., 2014: doi:10.2196/jmir.3000 6. Maher & Kulik, 1998: doi:10.1097/00008483-199905000-00004

Medical vector created by pikisuperstar - www.freepik.com

Clinician Professional Fulfillment vs Burnout

Satisfaction & Happiness

Engagement

Exhausted vs Energized

Feel Meaningful/Worthwhile

Professional self-efficacy

Detect expected burnout

Do I have meaningful patient interactions?

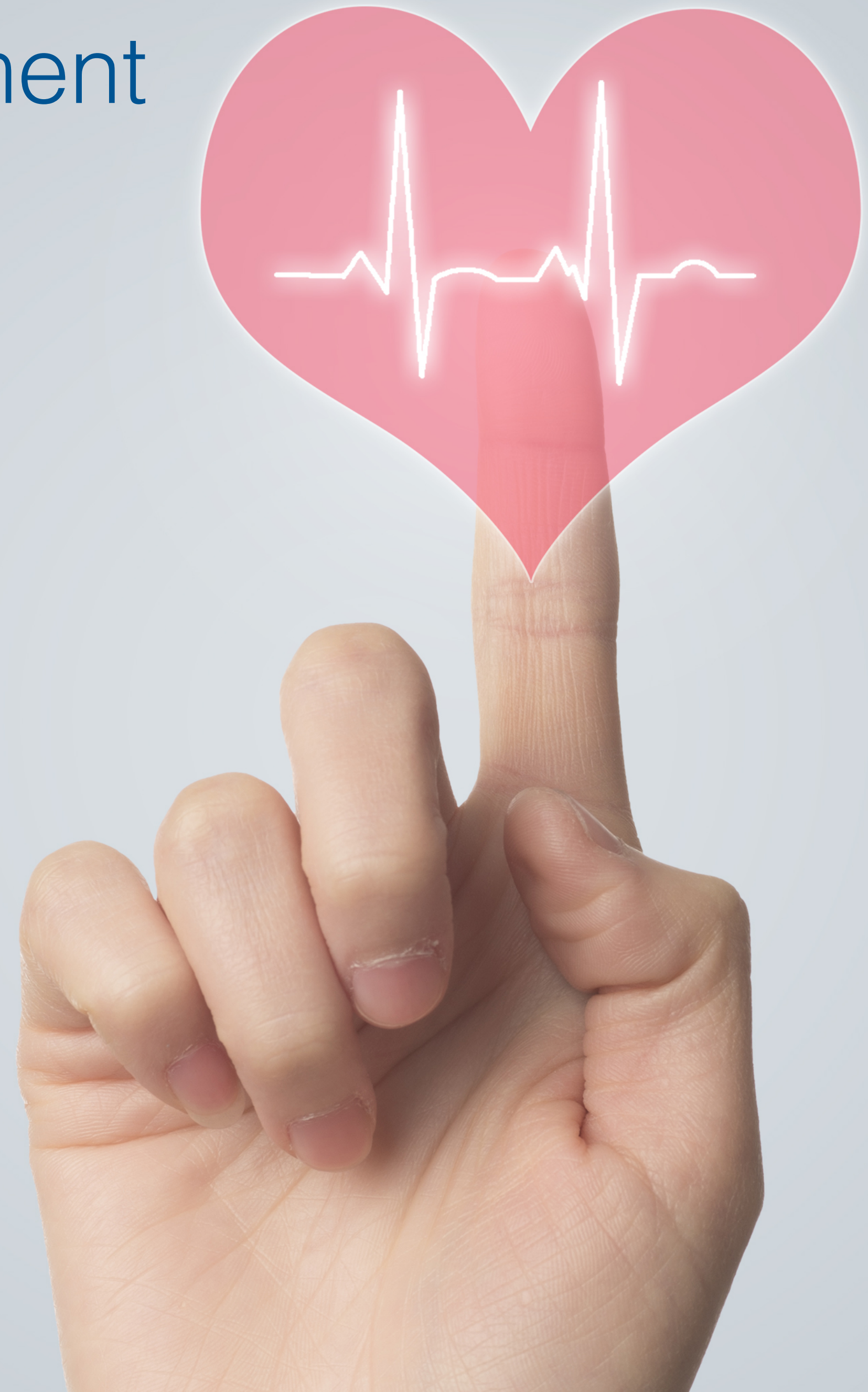
Do I matter?



Benefits: asynchronous engagement

For Patients

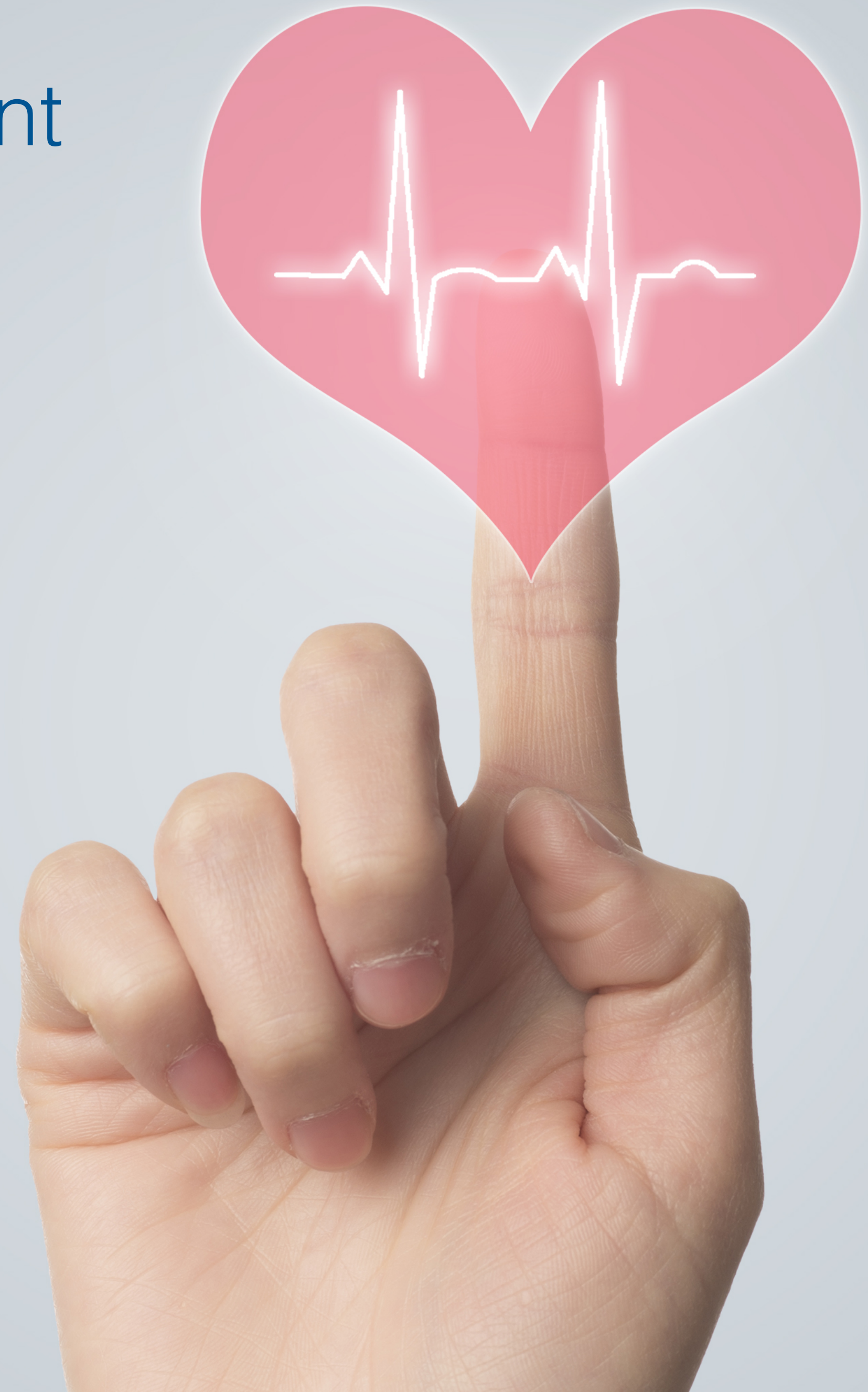
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Benefits: Asynchronous engagement

For the Care Team

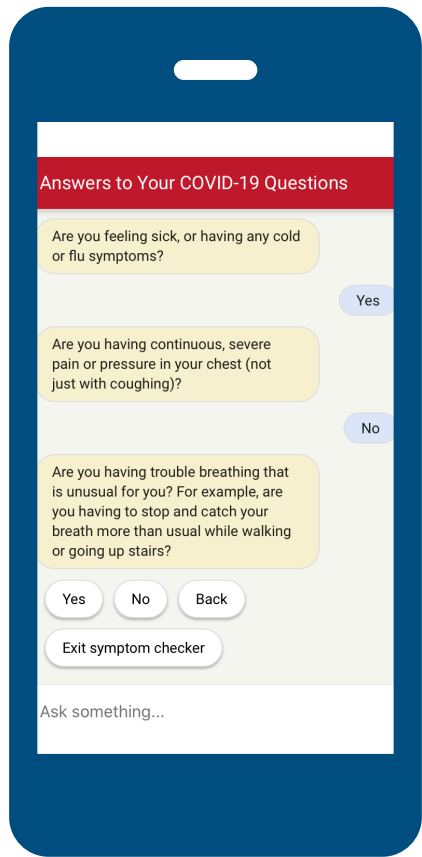
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Reclaiming the Time Between Visits

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Improving Patient-Provider Communication with Asynchronous Technology to Leverage the Time Between Consults



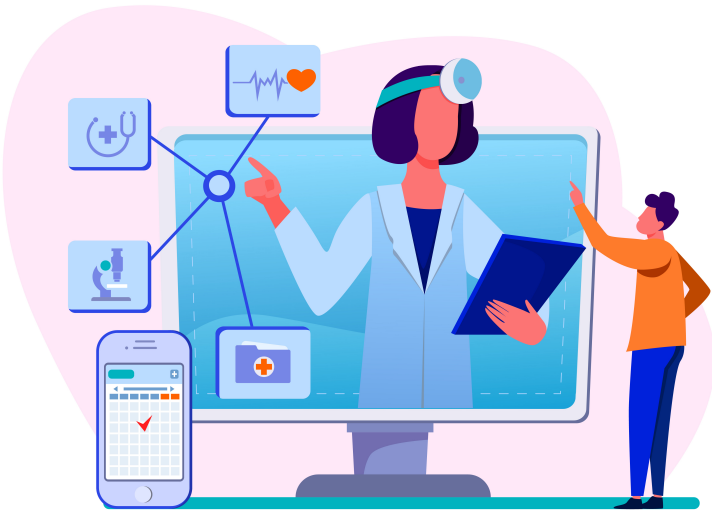
Penn Medicine: COVID-19 bot. Publicly available:
<https://www.pennmedicine.org/coronavirus/frequently-asked-questions-about-covid-19>

COVID-19 has accelerated video visits. But asynchronous communication platforms to leverage the time between visits remain underutilized.

This explores the benefits of chatbots, embodied conversational agents, email, e-prescribing patient education videos and multimedia, and other resources to ensure people get the right information at the right time.

Bi-directional platforms can also be used to ask people about their goals, preferences, solicit questions, and help de-stigmatize communication on topics like depression, abuse, or food security.

Opportunities



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Clinician Experience & Education

Few studies assess impact on the clinician experience or their understanding of the benefits of asynchronous communication. In an era of burnout, we should learn how it affects:

- Patient/clinician relationships
- Consults/conversations
- Confidence that patients understand info
- Trust/universal dimensions of social cognition
- Appropriate utilization of Dr. Google

Family Caregivers

In the COVID-19 era, they often cannot be physically present. Yet, as the population ages, they are increasingly important.

While these platforms make it easier than ever to include family caregivers, both the platforms and how they are implemented need to be proactively designed to support communication, training, and support of the circle of care.

Content Clearinghouse

Many quality, free and low-cost patient resources exist. Hospitals and clinicians often don't find them as they are scattered across the web. As a result videos, decision aids, and PDFs are underutilized; and organizations often re-invent their own.

An existing free, care communication platform makes it possible to create one place where healthcare orgs can search for, find, and e-prescribe resources.

Feedback Loop

Asynchronous communication is most successful when paired with quality resources and communication approaches that consider health literacy, decision, behavioral, and online learning science.

These platforms also provide a feedback loop that can be leveraged to help clinicians and content/communication developers understand how to amplify the positive impacts.

Normalize 8, 13, 20-21, 44, 59

Less Decision Conflict 23, 30, 65

Safe to Ask/Honest Disclosure 13, 20-21, 36, 59



More honest online about sex and drug use because the computer didn't judge them ²¹

Shame and stigma less prevalent in online communication ¹³

Patients felt emboldened to ask questions in email ³⁶

Patients prefer email to send psychosocial messages ³⁷

Knowledge 2-3, 5, 12, 15, 17, 23-24, 28-33, 37, 39, 46, 50, 53-54, 58, 60, 65

Recall 18-19



Most felt they gained clarity on disease duration, symptoms, and the time medication takes to start acting ⁵²

Improved knowledge, compliance with diet and bowel prep for colonoscopy ²

Hip surgery patients who viewed multimedia patient ed had significantly better recall & satisfaction ¹⁸

Adherence ,10-11, 14, 22, 26, 35, 40, 42

Self Efficacy 5,10-12, 28-29, 31-33, 37, 50, 57, 60, 66

Improved Attitude/Confidence 2-33, 41, 46, 66

New Health Behavior 6, 10-11, 42-43



Improved attitude/intention to get colon cancer screening ⁴⁵

Improved self-management & efficacy for back pain, dyspnea, & heart failure ⁴

More mammograms, Paps, and flu vaccinations ²³

Higher self-efficacy & more use of incentive spirometer & speeding recovery ²⁸

Patient Exp 3-5, 18-21, 23, 31, 47, 60

Clinician Exp 13, 21, 59

Improved Consult 3-4, 20

Efficiency 3, 15-17, 21, 33, 45, 48, 52, 56, 59



HCP spent significantly less time on patient ed ⁴⁴

Surgeons more satisfied w/ visits Patients more confident to ask Q ³

Felt more connected to their healthcare team & better prepared to start convos w/ docs ⁵

86% of hospitals improved doc communication & 100% improved aggregate HCAHPs top box % ⁴⁶

Improved Health 1, 9, 16, 24, 26-28, 34, 37-8, 55, 58, 61-62

Less Anxiety 7-8, 15, 56-7, 61, 64

Better QoL 2, 12, 15, 22, 24, 48



Children had less asthma symptom days (81 vs 51/year) & used significantly lower daily dose of inhaled steroids ²⁴

Less anxiety day of colonoscopy ¹⁵

Improved health in 12 studies: A1C and FEV ³⁸

Readmits 11, 25, 49-50

Fewer Visits 1,9,16, 24-5, 37, 51-52

Quality & Safety 2, 12, 15, 22, 24, 48

Length of Stay 9, 11, 60

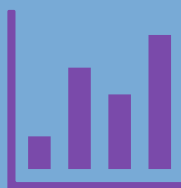


44% reduction 30-day readmits in Medicare population ⁴⁸

14% reduction in total cost of care due to reduced ED and physician office visits ⁵⁰

Patients needed less sedation med & had shorter procedures ¹⁵

Emerging Impacts



Clinician Understanding ¹³
Family Caregiver Efficacy ¹¹
Patient Activation ^{30 & 64}
Less Lonely/Isolated ⁷⁻⁸
Self Advocacy ³⁰
Improved Social Support ⁵⁷
Improved doc-patient relationship ⁵⁹
Psychosocial outcomes ³⁷

Clinicians became aware of patient issues they hadn't considered significant & informed changes to conversations & patient ed ¹³

1. Meneghini, LF et al, 1998 2. Cho, YY et al, 2015 3. Bozic, KJ et al, 2013 4. Boudreault DJ, et al 2016 5. Zan, S et al, 2015 6. Crawford, AG et al, 2005 7. Seavy, K n.d. 8. Weinert et al, 2011 9. Lorig, KR et al, 2002 10. Mahler HI, et al, 1999 11. Mahler HI, et al, 1998 12. Tongpeth, J et al, 2018 13. Das, A et al, 2015 14. Carolan-Olah, M et al, 2019 15. Parker, S et al, 2018 16. Meneghini, LF et al, 1998 17. de Leeuw, RA et al, 2019 18. Dallimore, RK et al, 2017 19. Cornoiu, A et al, 2011 20. Rose, G et al, 2016 21. Mackenzie, S et al, 2007 22. Hayat, U et al, 2016 23. Smith, SK et al, 2010 24. Krishna, S et al, 2003 25. Pierce, LL et al, 2009 26. Kwon, HS et al, 2004 27. Ralston, JD et al, 2009 28. Murray, E et al, 2005 29. Solomon, M et al, 2012 30. Hoffman, AS et al, 2017 31. Denny, MC et al, 2017 31. Lo, SF et al, 2011 33. Lo, SF et al, 2010 34. Steinberg, DM et al, 2014 35. DeKoekkoek, T et al, 2015 36. Houston, TK et al, 2004 37. de Jong, C. et al, 2014 38. Velázquez-López, L t al, 2017 39. Wonggom, P et al, 2020. 40. Muller, AM et al, 2016 41. King, AC et al, 2013 42. Orr, JA & King, RJ, 2015 43. Sebastian, J, et al, 2017 44. Sim, B & Galbraith, K, 2020 45. Meppelink, CS et al, 2015 46. Emmi Solutions, 2015 47. Forster, AJ et al, 2007 48. Graham, J et al, 2012 49. Boyde, M et al, 2018 50. Newman, ED et al, 2019 51. Roswell, RH, 2019 52. Lopez-Olivo, MA et al, 2018 53. Matsuyama, RK et al, 2013 54. Bond, G et al, 2007 55. Cheng, C et al, 2020 56. Weinert, C et al, 2008. 57. Armstrong, AW et al, 2011 58. Choy, MA et al, 2020 59. Melin, M et al, 2018 60. Rathbone, AL et al, 2017 61. Andrade, AD et al, 2014 62. Bickmore, TW et al, 2018 63. Utami, D et al, 2017. 64. Zhan, Z et al, 2018



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Thank you!



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