Item S1. Supplemental Methods

The e-Literacy Survey was developed for use in the CRIC ancillary study "*Is there a digital divide in chronic kidney disease?*" and consisted of 19 questions, 11 of which were developed de novo by CRIC ancillary investigators and were not piloted. The eight questions that composed the validated eHealth Literacy Scale (eHEALS) had been tested and validated in several cohorts.[1,2]

The mHealth/Technology Use Survey was developed to inform future research in the CRIC Study that intended to collect data from participants, at their homes and elsewhere. To assist in the design of and planning efforts for this future research, CRIC investigators and staff wanted to collect information about the willingness of participants to allow home data collection, along with the availability and use of certain types of technology. With this in mind, CRIC investigators drafted a brief questionnaire that was based on research activities being considered and not specifically on existing research, and this questionnaire was then vetted by several CRIC groups, including the Executive Committee, Recruitment and Retention Committee, Pilot Studies Committee, and the Measurements/Quality Control Committee. The survey was then piloted among CRIC research staff. All seven clinical centers were asked to offer the survey to the first 60 consecutive participants.

For both surveys, potential participants were approached by the CRIC research coordinator at the time of an annual clinic visit and the survey was self-administered. If the clinic visit was completed as a phone visit, the survey was administered to the participant over the phone by the research coordinator. Please see below for full text of both surveys.

CRIC e-LITERACY QUESTIONNAIRE

Please answer the following questions about your experience using the Internet and mobile devices. For each question, please choose the answer that best reflects your opinion and experience *right* now.

Internet use:	
1. Thinking about the typical month, which statement best describes your use of the internet?	☐ I do not have access to the Internet. ☐ I have access to the Internet, but I never use the Internet. ☐ I use the Internet at least once a month. I use the Internet at least once a week. ☐ I use the Internet at least once a day.
2. During a typical month, which of the following devices do you use to access the Internet? (Check all that apply)	☐ Other ☐ I do not use the Internet ☐ Computer ☐ Cell or mobile phone ☐ Mobile device other than phone (tablet, iPad) ☐ Other
a. If Other, please specify:	_____
3. Which of the following do you use the Internet for? (Check all that apply)	☐ I do not use the Internet ☐ Email ☐ Working activities ☐ Accessing my personal medical record ☐ Looking up general health information ☐ Looking up specific health information about my own health conditions ☐ Looking up other information (for example, news, weather, entertainment) ☐ Social networking (for example, Facebook, Twitter) ☐ Financial transactions or management (for example, online banking) ☐ Shopping ☐ Online classes ☐ Playing Games ☐ Other
a. If Other, please specify:	_____
Phone Use:	

4. Do you currently have a landline phone (also called a house phone) where you live?	Yes No
5. Do you currently use a personal cell/mobile phone?	Yes No
6. What type of cell/mobile phone do you primarily use?	☐ I do not use a cell/mobile phone ☐ Traditional cell/mobile phone (for example, a flip phone) ☐ Smartphone (for example, Android, iPhone, BlackBerry) ☐ Other
a. If Other, please specify:	_____
7. Which of the following do you use your cell/mobile phone for? (Check all that apply)	☐ I do not use a cell/mobile phone ☐ Send and receive phone calls ☐ Send and receive text messages ☐ Internet ☐ Social networking (e.g., Facebook, Twitter) ☐ Download apps ☐ Email ☐ Camera and video ☐ Play games ☐ Other
a. If other, please specify:	_____
8. Which of the following types of health apps have you use on your cell/mobile phone? (Check all that apply)	☐ I have never used a health app ☐ Track my exercise activity or my weight ☐ Track my eating ☐ Look up nutrition or diet information ☐ Learn about my health conditions ☐ Record my blood pressures ☐ Record my blood sugars ☐ Access my personal medical record ☐ Keep track of my medications ☐ Other
a. If Other, please specify:	_____

eHEALS Survey

The following set of questions will improve our understanding of how materials on the Internet might be made more useful to patients. <u>Regardless of whether you have access to the Internet</u>, please answer the questions below.

9. How **useful** do you feel the Internet is in helping you in making decisions about your health?	☐ Not useful at all ☐ Not useful ☐ Unsure ☐ Useful ☐ Very Useful

10. How **important** is it for you to be able to access health resources on the Internet?	☐ Not important at all ☐ Not important ☐ Unsure ☐ Important ☐ Very important
Thanks so much for your responses. Now, we'd like you to read each of the statements below and indicate your level of agreement or disagreement with them. For each statement, would you say you strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree or strongly disagree? Again, please be honest and choose the option that most accurately reflects your opinion.	
11. I know **what** health resources are available on the Internet.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
12. I know **where** to find helpful health resources on the Internet.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
13. I know **how** to find helpful health resources on the Internet.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
14. I know **how to use** the Internet to answer my question about health.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
15. I know how to use the **health information** I find on the Internet to help me.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
16. I have the skills I need to **evaluate** the health resources I find on the Internet.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
17. I can tell **high quality** health resources from low quality health resources on the Internet.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree
18. I feel **confident** in using information from the Internet to make health decisions.	☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree nor Agree ☐ Agree ☐ Strongly Agree

Potential Uses for Technology

Thanks so much for your responses. We'd like to ask you one last question that will help guide the development of a new Internet or mobile phone-based health tool. Again, please answer as honestly as possible.

19. Thinking about your own health and daily schedule, please read the following statements and select those you feel apply to you: (Check all that apply)	☐ I'd like more help remembering to take my medications. ☐ I'd like more help learning about what my medications are for. ☐ I'd like more help learning about possible side effects from my medications.
Thank you so much for your responses and your time. We value your participation and the information you've provided will be put to good use!	

CRIC mHealth/Technology Use Survey

Thank you for your ongoing commitment to the CRIC Study. We are now planning the next phase of CRIC, and we would like to get input from you and other CRIC participants.

We would like to know what you think about using technology and devices at home to collect information in the next phase of CRIC. This may involve using computers, smart phones, other types of hand-held devices, or devices worn on your wrist or chest to better capture different types of information about your health. Your responses to these questions will not commit you to doing any of these possible activities.

Please answer the following questions by checking yes or no.

	Yes	No
Did the participant agree to complete the questionnaire?		
1. Do you use the Internet?		
2. Do you use and read email?		
3. Do you use a smartphone (a cell phone that can access the internet such as an iPhone)?		
4. Are you willing to answer study questionnaires using?		
a. The internet?		
b. Email?		
c. Smartphone?		

Which of the following activities would you consider doing at home (the frequency of the activities would vary depending on the activity, and all devices and supplies would be given to you by the CRIC Study)?

	Yes	No
5. Wear an arm-band device that measures blood pressure.		

6. Measure your blood pressure using a home blood pressure machine similar to what your doctor uses.		
7. Wear a watch-shaped device on your wrist that measures your physical activity levels (similar to fitbit, iWatch, or Garmin device).		
8. Wear a patch (shaped like a large band-aid) on your chest that measures your heart rhythm.		
9. Occasionally test a sample of your urine at home using a test strip and monitor to measure protein and other things in your urine.		
10. Occasionally use a finger-stick device to draw a drop of blood for lab tests such as your level of kidney function.		
11. You currently visit our clinic every year to provide study information such as questionnaires and a blood draw. Would you be willing to have us collect that information at your home instead? (We may use the services of a company to perform home visits; we would monitor their performance closely to make sure it meets our highest standards of quality).		
12. Do you have any comments about what we have asked you in this questionnaire?		

Table S1: Survey questions used to determine study outcomes.

Study Outcome	e-Literacy Survey Question Number	mHealth/Technology Use Survey Question Number
Technology Use		
Internet Use	Q1^, Q2*, Q3*	Q1*
Email Use	Q3*, Q7*	Q2*
Smartphone Use	Q6*, Q7*	Q3*
mHealth app Use	Q8*	Not applicable
Future Interest in mHealth Use	Q19*	Q4*
eHealth Literacy	Q11-18#	Not applicable
^Current use determined by use of internet at least once a month, once a week, or once a day *Current use determined by affirmative response #Responses on Likert scale of 1-5; cumulative score of ≥32 considered to be adequate		

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Table S2: Characteristics of CRIC participants who did and did not respond to the e-Literacy Survey, by question type.

A. mHealth Questions	Non-Responders (n=188)	Responders (N=633)
Race		
Black or African American	117 (62%)	352 (56%)
White	68 (36%)	252 (40%)
Other	3 (2%)	29 (5%)
Ethnicity		
Hispanic or Latino	2 (1%)	68 (11%)
Non-Hispanic or Latino	186 (99%)	565 (89%)
Sex		
Female	62 (33%)	250 (39%)
Male	126 (67%)	383 (61%)
B. eHEALS Questions	**Non-Responders (N=13)**	**Responders (n=633)**
Race		
Black or AA	8 (62%)	352 (56%)
White	3 (23%)	252 (40%)
Other	2 (15%)	29 (5%)
Ethnicity		
Hispanic or Latino	1 (8%)	68 (11%)
Non-Hispanic or Latino	12 (92%)	565 (89%)
Sex		
Female	7 (54%)	250 (39%)
Male	6 (46%)	383 (61%)

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Table S3: Associations of Baseline Characteristics with eHealth literacy domains.

	Know what health resources are available on Internet	Know Where to Find Helpful Resources	Know how to Find helpful Resources	Know how to use Internet to answer my health questions	Know how to use health info I find on the Internet to help me	Have skills to evaluate health resources I find on internet	Can Distinguish High vs. low quality health resources	Feel confident using information from internet to make health decisions
	PR (95% CI)	PR (95% CI)	PR (95% CI)	PR (95% CI)	PR (95% CI)	PR (95% CI)	PR (95% CI)	PR (95% CI)
Age ≥65 vs. <65 years	0.75 (0.65-0.87)	0.73 (0.63-0.85)	0.72 (0.62-0.83)	0.70 (0.59-0.76)	0.66 (0.57-0.75)	0.70 (0.59-0.82)	0.71 (0.59-0.86)	0.61 (0.50-0.74)
Female vs. Male sex	0.99 (0.85-1.16)	1.04 (0.90-1.22)	0.93 (0.80-1.08)	0.84 (0.72-0.97)	0.99 (0.86-1.15)	0.84 (0.70-1.00*)	0.97 (0.80-1.19)	0.83 (0.66-1.03)
White vs. Non-White race	1.10 (0.95-1.28)	1.15 (0.99-1.34)	1.19 (1.03-1.38)	1.25 (1.09-1.44)	1.13 (0.98-1.31)	1.24 (1.05-1.45)	1.37 (1.13-1.66)	1.07 (0.87-1.31)
Education level								
<High school	REF	REF	REF	REF	REF	REF	REF	REF
≥High school	2.03 (1.51-2.74)	2.53 (1.80-3.55)	3.24 (2.21-4.75)	3.58 (2.42-5.31)	2.55 (1.83-3.55)	3.81 (2.44-5.95)	3.03 (1.93-4.76)	2.71 (1.75-4.20)
Annual Income								
<$20,000	REF	REF	REF	REF	REF	REF	REF	REF
≥$20,000	1.51 (1.22-1.87)	1.97 (1.54-2.51)	1.97 (1.56-2.49)	2.10 (1.66-2.66)	1.93 (1.53-2.44)	2.14 (1.63-2.80)	2.09 (1.53-2.84)	1.99 (1.45-2.71)
Don't wish to answer	1.44 (1.10-1.88)	1.79 (1.34-2.40)	1.63 (1.22-2.18)	1.89 (1.43-2.50)	1.79 (1.36-2.36)	1.91 (1.38-2.63)	1.87 (1.29-2.72)	1.81 (1.23-2.64)
Health Insurance								
Medicaid	REF	REF	REF	REF	REF	REF	REF	REF
Medicare/VA/Private	1.09 (0.86-1.37)	1.09 (0.86-1.38)	1.06 (0.84-1.32)	1.14 (0.91-1.43)	1.06 (0.84-1.32)	1.10 (0.84-1.43)	1.01 (0.75-1.36)	1.02 (0.75-1.38)
Adequate vs. Inadequate Health Literacy[3]	1.85 (1.31-2.61)	2.56 (1.68-3.91)	3.26 (2.02-5.24)	3.42 (2.13-5.51)	3.06 (1.94-4.83)	3.14 (1.90-5.17)	2.70 (1.60-4.58)	3.04 (1.69-5.45)
Disease Self-efficacy score (per SD)[4]	1.12 (1.01-1.24)	1.10 (0.99-1.23)	1.14 (1.02-1.28)	1.11 (1.00-1.23*)	1.10 (0.99-1.22)	1.19 (1.04-1.37)	1.16 (1.00-1.35)	1.22 (1.04-1.42)
Depressive symptom score (per SD))[5]	0.93 (0.86-1.01)	0.97 (0.90-1.05)	0.93 (0.86-1.01)	0.93 (0.86-1.00)	0.96 (0.89-1.03)	0.91 (0.83-1.00*)	0.91 (0.82-1.02)	0.98 (0.88-1.08)
Cognition score (per SD)[6]	1.24 (1.13-1.36)	1.43 (1.29-1.58)	1.49 (1.35-1.65)	1.53 (1.39-1.68)	1.46 (1.32-1.61)	1.55 (1.38-1.74)	1.51 (1.31-1.74)	1.36 (1.19-1.56)
Social support score (per SD)[7]	1.15 (1.00-1.33)	1.25 (1.06-1.47)	1.18 (0.99-1.39)	1.22 (1.03-1.44)	1.29 (1.08-1.54)	1.24 (1.03-1.49)	1.27 (1.01-1.58)	1.11 (0.87-1.42)
Comorbidity score								
0-3	REF	REF	REF	REF	REF	REF	REF	REF
4-6	0.87 (0.73-1.04)	0.81 (0.69-0.96)	0.79 (0.68-0.93)	0.79 (0.69-0.91)	0.74 (0.64-0.85)	0.83 (0.69-0.99)	0.81 (0.65-1.02)	0.72 (0.57-0.89)
7-11	0.75 (0.61-0.93)	0.64 (0.51-0.79)	0.61 (0.49-0.75)	0.59 (0.48-0.72)	0.55 (0.45-0.68)	0.62 (0.49-0.79)	0.64 (0.48-0.85)	0.53 (0.40-0.72)

[1]Assessed with S-TOFHLA instrument (adequate score >16, out of 36)[3]

[2]Assessed with modified mini-Mental State Exam (score range 0-100)[6]

[3]Assessed with Becks depression inventory (score range 0-63)[5]

[4]Assessed with disease self-efficacy[4] (score range 5-50); only assessed in Phase III cohort participants (N=462)

[5]Assessed with Lubben social network scale, score range (0-30)[7]; only assessed in Phase III cohort participants ≥65 years of age (N=235)

[6]Score constructed using the Charlson scoring system.[8]

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