

Introduction

The primary objective of the wichealth.org annual program evaluation is to measure the impact that completing lessons has on the likelihood that a user will engage in behavior change. As direct measurement of behavior change outcomes is not currently possible, the likelihood of behavior change is evaluated based on user stage of change progression (for stage-based lessons), user belief in the ability to change their behavior as well as several measures of user engagement.

In addition, the wichealth.org annual program evaluation will describe usage patterns and key performance indicator (KPI) metrics for the period of October 1, 2017 thru September 30, 2018. This report includes all wichealth.org WIC client uses for all lessons attempted and completed during the period.

Finally, the wichealth.org annual program evaluation attempts to address current and emerging research concerns raised throughout the year by the program team. This year these included:

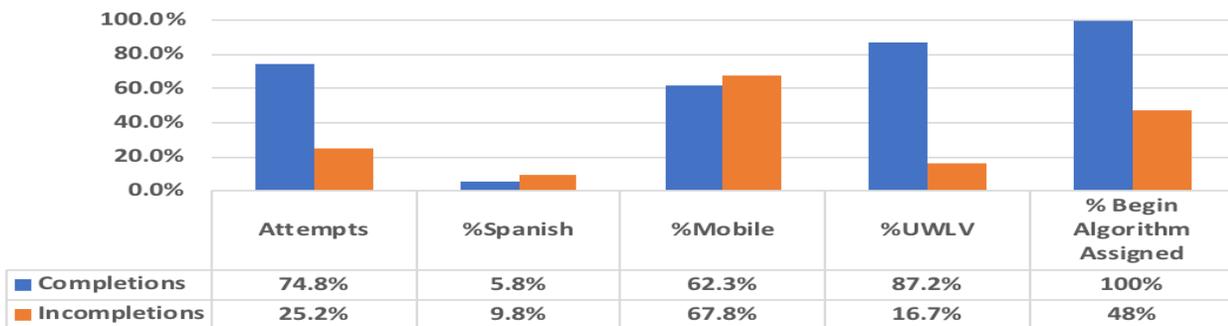
1. What are the characteristics associated with a user failing to complete an attempted wichealth.org lesson?
2. What proportion of these users that do not complete their lesson ultimately complete one (same v. other); the same day, same week, etc. as their failed attempt?
3. Has the lesson completion rate been consistent over time and if not, what is driving this?
4. What measures of engagement are strongly correlated with progression (for stage-based lessons) and user belief in the ability to change health behavior using what was learned?
5. What are factors and other insights are associated with Spanish version resource comments, which have been observed to be provided at a frequency significantly exceeding the English version rate?

Completion Rates of wichealth.org Lessons

The number of wichealth.org lessons completed during an annual evaluation continues to grow (n=1,026,384). The number of lessons completed during an annual reporting period exceeded one million for the first time, although this was partly due to including lessons associated with Mothers in Motion. Lesson attempts (n=1,371,626) have been over one million per year over the last two years, but as previously reported, just over 25% of lessons attempted are never completed (Figure 1). Key factors identified as being associated with a user not completing a lesson continue to be use of the Spanish language version and whether the lesson was completed on a mobile device. Additional factors will be explored throughout this evaluation associated with lesson completion rates, such as the observation that users aged 50 and older only demonstrate a 31.5% lesson completion rate.

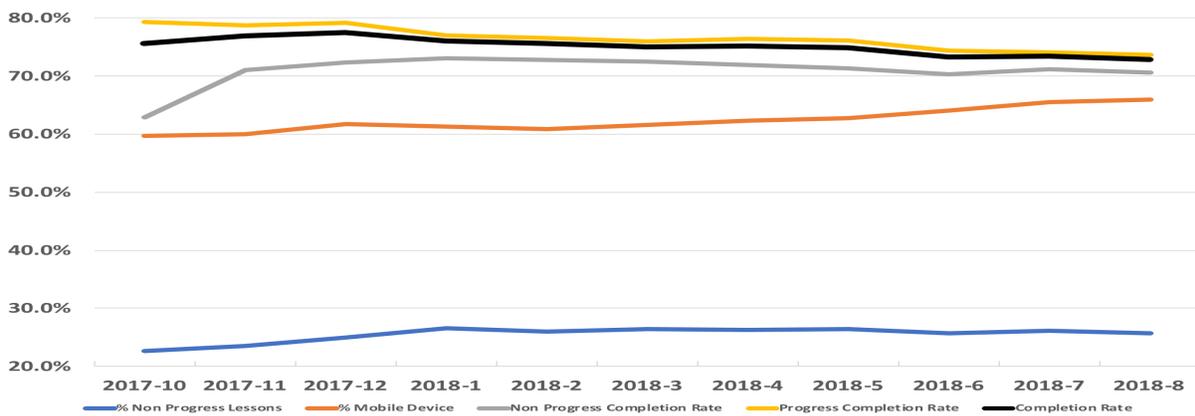
As reported in the midyear evaluation, users that do not complete lessons typically do not make it too far into the lesson, as only 48% of them are reaching the point where the beginning algorithm is assigned. Further, only 16.7% get to a point where they complete at least one resource link view. Both of these observations demonstrate that users that do not complete their lessons are most likely interrupted very early on in their session.

Figure 1. Characteristics Associated with wichealth.org Lesson Attempts by Completion Status, Oct 17 – Sep 18



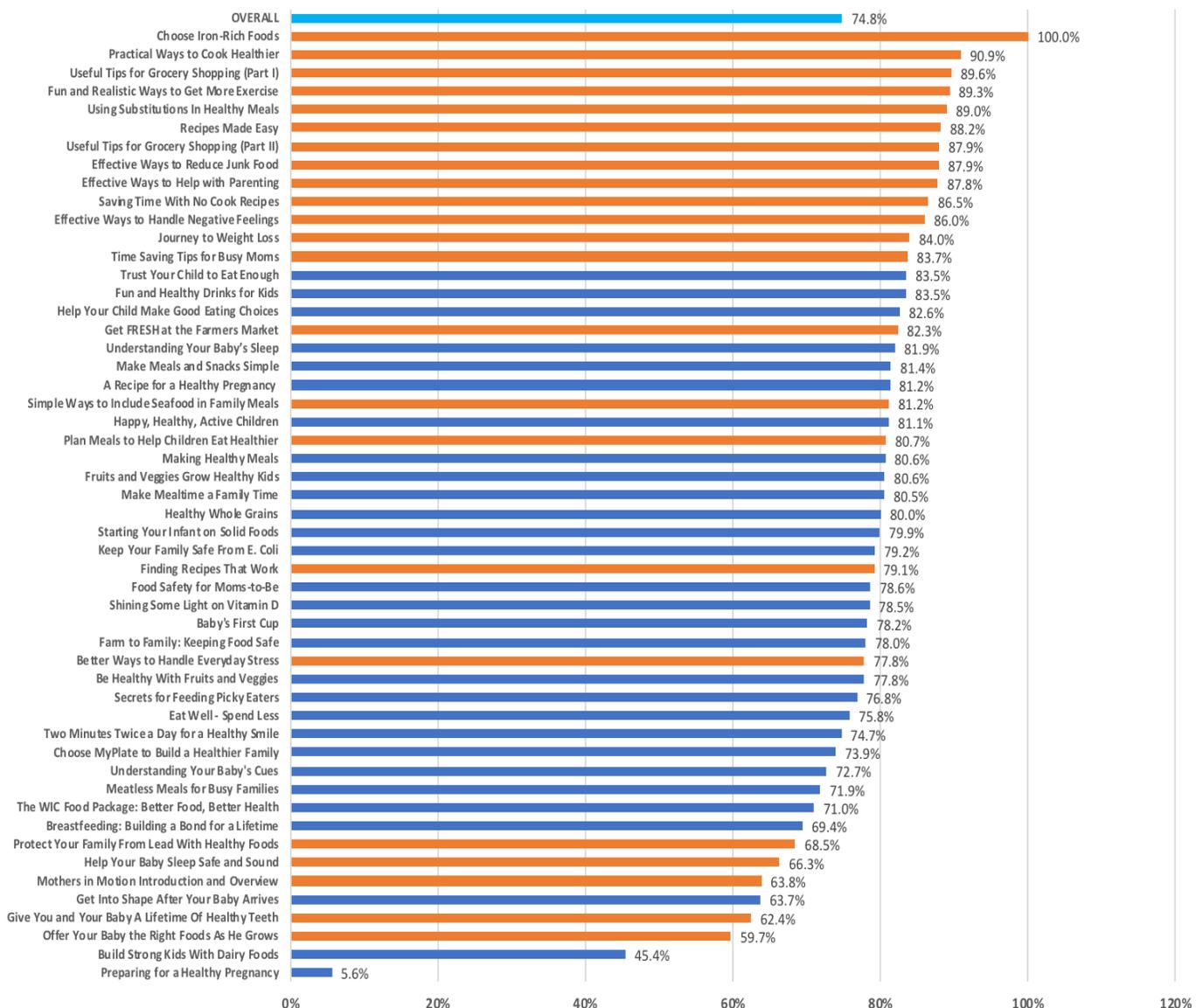
Lesson completion rates appear to be falling over time (Figure 2). Over the current annual evaluation period, overall completion rates fell about 4%, from 75.6% to 72.6%. Both stage and skills-based lessons demonstrated a decrease. Note that the mobile access rate continues to increase and did so by over 10% during the current evaluation period. The completion rate among mobile users also remains slightly lower than the overall completion rate.

Figure 2. wichealth.org Lesson Completion Rates by Month and Lesson Type, September 2017 – October 2018



As also seen in Figure 2, lesson completion rates overall for non-progression or “skills-based” lessons (71.0%) are lower than that of progression-based or “stage-based” lessons (76.1%). Figure 3 illustrates this as well presenting completion rates by lesson, with more stage-based lessons (orange) showing among those with the highest completion rates.

Figure 3. wichealth.org Lesson Completion Rates by Lesson, September 2017 – October 2018



Although completion rates appear to be decreasing, the impact on a unique user with respect to their ultimate completion of a wichealth.org lesson is not significant. The percent of unique users that attempt a lesson and never complete one is only 3%. It appears that a large contributor to lesson incompleteness is the lesson topic itself, as although most unique users with incomplete lessons are ultimately completing a lesson, only 26.5% are completing the original lesson attempted.

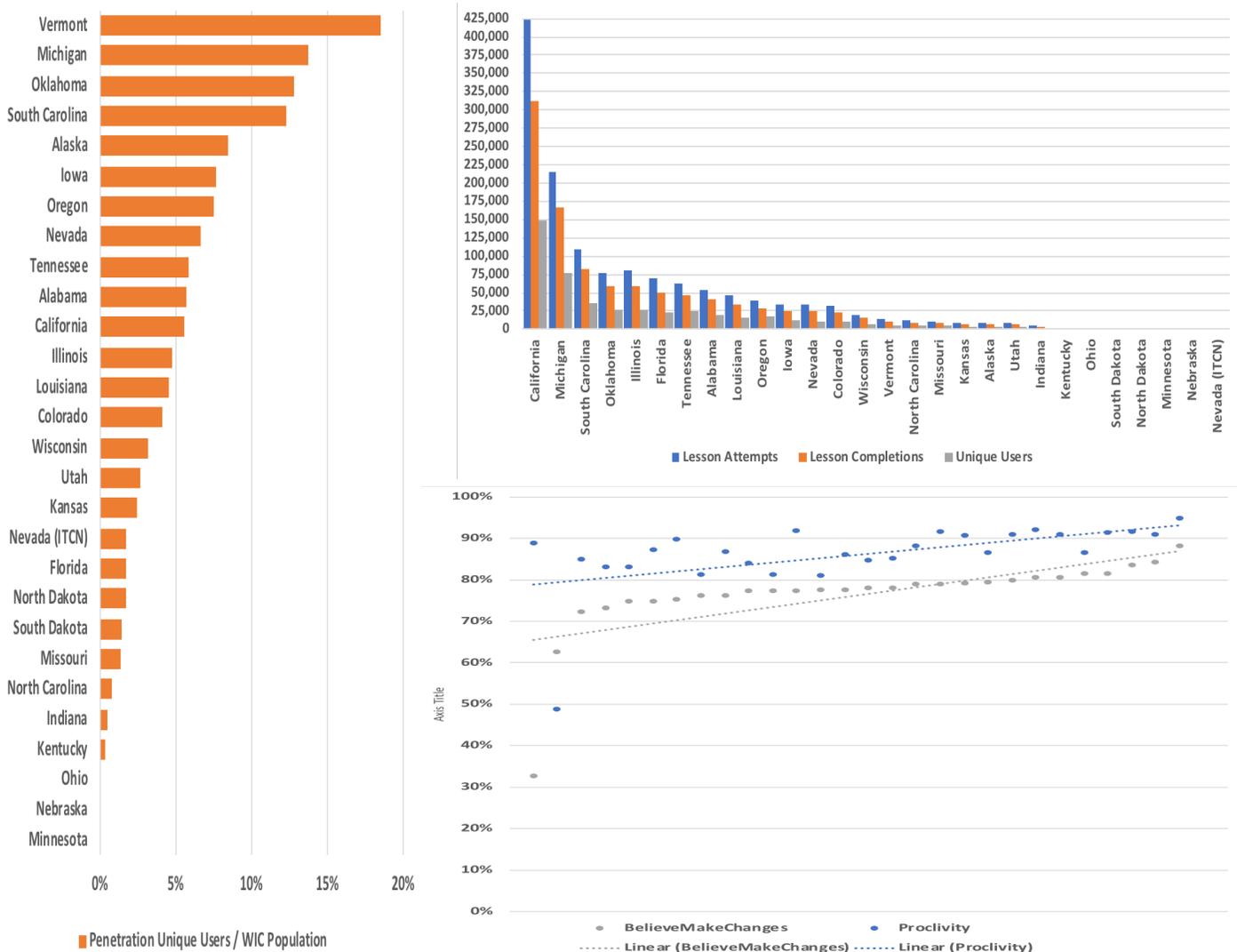
wichealth.org Lesson Completion Usage Patterns and Statistics

The 1,026,384 wichealth.org lessons completed represents a 13.6% increase in the annualized usage rate compared to the number of lessons completed during the midyear evaluation period (Oct 2017 – Mar 2018). As discussed in the midyear evaluation, the number of lessons completed per unique user depends on the length of the evaluation period, with an average of just over 1.5 lessons per unique for midyear measurements and 2 lessons per unique for annual. The current annual evaluation period was consistent with 2.1 lessons completed per unique user.

Among unique users that complete more than one lesson, over two-thirds of them do so during the same session they completed their first. Only just under 17% of unique users that completed more than one lesson had at least a month of time between lesson completions.

Key performance indicators for completed wichealth.org lessons of user proclivity, penetration and belief are presented in Figure 4.

Figure 4. Impact of wichealth.org with Respect to Penetration, Proclivity and User Belief



California (30.4%) and Michigan (16.3%) continue to make up the largest proportion of wichealth.org lesson completions by state. However, California ended up about 3pts lower than they were at midyear. Conversely, the largest jump in proportion of uses by state was seen for Florida, which was up nearly 3 pts compared to usage rates at midyear.

The “Proclivity”, or the proportion of users that access at least one resource link while completing their lesson, is illustrated adjacent to the “Believe Make Changes”, or the proportion of users who believe they are able to make a healthy behavior change using what they learned from wichealth.org. Note that the measure used through the last midyear evaluation here was “Progression”, however as most users do not have the ability to progress due to beginning their lesson in action or maintenance as well as the increase in skills-based lesson usage; the exit survey measure of whether a user believes they are able to make changes was used instead. This measure has been used extensively in the past to demonstrate the impact of wichealth.org. Here the upward linear trend shared by this and the Proclivity measure demonstrates a strong dose response relationship between extent of wichealth.org usage and impact demonstrated by belief in the ability to make the healthy behavior change of interest. The correlation coefficient (d0.82) between these two measures is also significant.

Penetration, or the proportion of the WIC client population associated with a state partner that uses wichealth.org, varies widely by state. Vermont continues to lead the way with 18.5% of the WIC participants in that state completing at least one wichealth.org lesson. This measure is based on data downloaded from the USDA Food and Nutrition Service WIC program website (<https://www.fns.usda.gov/pd/wic-program>) for 10/1/2017 thru 9/30/2018. There continues to be a significant opportunity to expand usage within the current state partners given a median penetration rate of just 3.7%.

The proportion of users that do not access any resource had been declining steadily over the last several evaluation periods. However, over the last six months there has been a slight increase in the percentage of lesson completions that do not include a resource link use. Completing a resource link is a significant part of the wichealth.org intervention and has consistently demonstrated itself as critical in order for users to progress and/or demonstrate belief in the ability to make changes. In the current annual evaluation, 84.1% of EBSU that accessed a resource link progressed at least one stage of change while only 30.6% of users that did not access any links progressed in stage of change (p<0.00001). Further, among those that accessed resource links, 82.0% believed they could make changes using what they had learned compared to only 57.6% of those that recorded no access to resource links (p<0.0001; see Table 1).

Table 1. Association between User “Proclivity” and Stage Progression by Platform, Oct 2017 – Sep 2018

	Lessons Completed	%	% Believe Can Make Changes	Non Stage Based Lessons Completed	Anticipatory Guidance Stage Users	Early Begin Stage Users	% EBSU of Total	% Progression
Link Resource Use								
None	131,438	12.8%	57.6%	62,755	3,774	28,960	22.0%	30.6%
1+ Link Views	894,946	87.2%	82.0%	186,515	44,872	238,068	26.6%	84.1%
Total	1,026,384	100%	78.9%	249,270	48,646	267,028	26.0%	78.3%

Table 2. Overall wichealth.org Performance by State, October 2017 – September 2018

State Partner	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% of Total Lessons Completed	Unique Users	% Unique Users	% Spanish	% UWLTV	Average Link Views among UWLTV	Average Link View Time among UWLTV	Non Stage Based Lessons Completed	AGBSU N	EBSU N	%BMC	% Stage Progression among EBSU	Average Stages Progressed among EBSU
California	422,518	311,833	73.8%	30.4%	148,641	30.5%	11.1%	91.4%	2.2	2.8	37,531	21,245	88,944	83.3%	79.1%	1.2
Michigan	215,205	167,459	77.8%	16.3%	76,107	15.6%	0.6%	83.9%	2.1	2.3	68,872	5,663	35,059	77.0%	78.2%	1.2
South Carolina	110,092	82,438	74.9%	8.0%	35,275	7.2%	1.3%	81.1%	2.2	2.3	25,246	4,550	19,063	77.1%	73.2%	1.2
Oklahoma	76,407	59,317	77.6%	5.8%	27,479	5.6%	4.5%	85.9%	2.1	2.2	18,577	2,076	14,126	77.3%	76.1%	1.2
Illinois	80,194	58,648	73.1%	5.7%	27,180	5.6%	9.5%	86.7%	2.1	2.4	16,348	2,091	15,199	76.1%	78.1%	1.2
Florida	70,086	50,496	72.0%	4.9%	22,986	4.7%	14.4%	80.7%	2.1	2.2	11,719	137	13,693	77.3%	81.3%	1.2
Tennessee	61,728	45,964	74.5%	4.5%	24,313	5.0%	2.0%	82.8%	1.9	1.6	14,928	1,666	10,565	72.9%	76.8%	1.2
Alabama	54,481	40,286	73.9%	3.9%	20,193	4.1%	0.6%	92.0%	2.0	1.9	5,446	3,322	11,917	80.3%	72.0%	1.2
Louisiana	46,690	33,550	71.9%	3.3%	15,819	3.2%	0.8%	90.6%	2.1	1.8	7,801	2,688	9,476	79.7%	72.6%	1.2
Oregon	38,799	29,025	74.8%	2.8%	17,052	3.5%	4.2%	90.4%	2.0	2.8	7,957	530	8,423	79.0%	86.0%	1.1
Iowa	34,698	25,606	73.8%	2.5%	12,792	2.6%	1.4%	80.9%	2.0	2.1	7,854	1,145	6,427	76.0%	79.2%	1.2
Nevada	33,451	25,018	74.8%	2.4%	11,126	2.3%	8.0%	90.8%	2.1	2.6	1,816	837	8,204	80.4%	77.2%	1.2
Colorado	31,234	23,559	75.4%	2.3%	10,182	2.1%	3.0%	91.7%	2.0	2.2	7,778	358	5,573	77.1%	83.6%	1.2
Wisconsin	20,071	15,034	74.9%	1.5%	7,575	1.6%	2.8%	82.9%	1.9	1.9	5,406	133	3,766	74.6%	84.8%	1.2
Vermont	14,613	11,392	78.0%	1.1%	5,474	1.1%	0.1%	84.7%	2.0	2.2	4,165	404	2,536	72.1%	84.3%	1.2
North Carolina	12,032	9,086	75.5%	0.9%	4,929	1.0%	2.7%	91.3%	2.0	2.0	707	300	2,935	78.8%	79.1%	1.2
Missouri	10,918	8,740	80.1%	0.9%	4,765	1.0%	0.3%	89.6%	2.0	2.2	1,183	268	2,823	75.1%	82.1%	1.2
Kansas	9,125	6,745	73.9%	0.7%	3,447	0.7%	3.9%	84.9%	2.1	2.1	1,528	326	1,894	77.8%	80.6%	1.2
Alaska	8,660	6,556	75.7%	0.6%	4,019	0.8%	1.7%	91.1%	2.2	2.7	1,053	395	1,809	81.3%	79.2%	1.2
Utah	8,230	6,495	78.9%	0.6%	3,666	0.8%	2.2%	86.3%	2.2	3.3	1,437	224	1,917	81.2%	81.0%	1.1
Indiana	5,280	3,846	72.8%	0.4%	2,075	0.4%	2.4%	88.6%	2.1	2.6	757	189	1,090	32.6%	78.7%	1.2
Kentucky	2,365	1,836	77.6%	0.2%	1,027	0.2%	0.9%	90.8%	1.9	1.9	73	0	704	84.1%	85.9%	1.2
Ohio	1,621	1,098	67.7%	0.1%	476	0.1%	0.2%	48.5%	2.0	3.0	600	68	181	62.3%	82.3%	1.2
South Dakota	1,254	980	78.1%	0.1%	554	0.1%	1.5%	88.0%	2.2	2.7	85	23	347	78.8%	82.4%	1.2
North Dakota	1,145	889	77.6%	0.1%	533	0.1%	1.0%	84.6%	2.0	1.9	280	3	251	77.7%	92.0%	1.2
Minnesota	399	272	68.2%	0.0%	138	0.0%	4.0%	87.1%	1.9	2.3	81	2	55	74.6%	80.0%	1.1
Nebraska	191	125	65.4%	0.0%	48	0.0%	3.2%	86.4%	2.6	3.8	38	3	28	79.2%	89.3%	1.0
Nevada (ITCN)	139	91	65.5%	0.0%	58	0.0%	4.4%	94.5%	1.7	1.7	4	0	23	87.9%	87.0%	1.2
Grand Total	1,371,626	1,026,384	74.8%		487,929		5.8%	87.2%	2.1	2.4	249,270	48,646	267,028	78.9%	78.3%	1.2

Table 2 presents wichealth.org KPIs as well as other performance measures by state partner. Florida now leads with the proportion of Spanish language version users, representing 14.4% of lessons completed in that state. Users with at least one resource link view, as indicated above, fell slightly over the last six months and this was in part due to the increase in lessons completed from Florida where the rate of exposure to at least one resource link is relatively low at just 80.7%. The state of Indiana demonstrated a significantly lower rate of users indicating they believed in their ability to make changes using what they learned, with only 32.5% reporting this, which is less than half of the result for any other state partner.

Table 3 presents wichealth.org KPIs by lesson and lesson type. Over the last two years, the lesson “Two Minutes Twice a Day for a Healthy Smile”, has been the most frequently completed lesson, with “Breastfeeding: Building a Bond for a Lifetime” close behind in lesson completions and most frequent with respect to lesson attempts.

Table 3. Overall wichealth.org Performance by Lesson and Lesson Type, October 2017 – September 2018

Lesson Name	Lesson Type	Lesson Group	Lessons	Lessons Completed	% Lessons Completed	% Lessons Completed (Mobile)	% Lessons Completed (UWLV)	Average Link Views	Average Link View Time (min)	% BMC	AGBSU	EBSU N	% Stage Progression	Average Stages Progressed (among)	
Two Minutes Twice a Day for a Healthy Smile	Stages	Children Ages 1-5	87,071	65,021	74.7%	6.3%	5.8%	63.3%	2.2	83.9%	0	1,182	68.2%	1.1	
Secrets for Feeding Picky Eaters	Stages	Children Ages 1-5	74,380	57,117	76.8%	5.6%	7.7%	59.3%	2.5	85.7%	0	46,955	96.1%	1.1	
Fun and Healthy Drinks for Kids	Stages	Children Ages 1-5	51,682	51,475	99.6%	5.0%	7.5%	60.6%	1.4	84.2%	0	5,346	94.0%	1.1	
Happy, Healthy, Active Children	Stages	Children Ages 1-5	49,375	40,052	81.1%	3.9%	9.0%	60.6%	1.4	85.3%	0	4,845	93.7%	1.1	
Help Your Child Make Good Eating Choices	Stages	Children Ages 1-5	43,535	35,950	82.6%	3.5%	8.0%	61.1%	1.6	83.4%	0	6,332	89.4%	1.2	
Build Strong Kids With Dairy Foods	Stages	Children Ages 1-5	43,065	19,544	45.4%	1.8%	3.0%	60.3%	2.9	83.6%	0	8,480	83.5%	1.4	
Diff: Your Baby the Right Foods As He Grows	Skills	Children Ages 1-5	34,381	56,506	164.4%	5.5%	5.4%	63.0%	4.3	80.9%	0	NA	NA	NA	
Protect Your Family From Lead With Healthy Foods	Skills	Children Ages 1-5	61,915	42,395	68.5%	4.1%	8.8%	62.7%	4.3	84.2%	0	0	NA	NA	
Simple Ways to Include Seafood in Family Meals	Skills	Children Ages 1-5	24,746	20,082	81.2%	2.0%	5.1%	58.0%	2.8	79.9%	0	0	NA	NA	
Get FRESH at the Farmers Market	Skills	Children Ages 1-5	14,919	12,278	82.3%	1.2%	0.7%	62.1%	3.1	86.3%	0	0	NA	NA	
Children Ages 1-5			732,809	545,882	74.5%	53.2%	6.7%	61.4%	2.2	82.0%	25,473	167,485	83.2%	1.2	
Healthy Whole Grains	Stages	Healthy Families	18,330	14,670	80.0%	1.4%	3.8%	61.9%	2.3	83.2%	0	9,939	48.3%	1.2	
Eat Well - Spend Less	Stages	Healthy Families	14,083	10,675	75.8%	1.0%	9.1%	61.4%	2.4	81.1%	0	6,351	94.3%	1.2	
Making Healthy Meals	Stages	Healthy Families	12,628	10,182	80.6%	1.0%	9.1%	61.0%	1.6	83.6%	0	2,687	96.8%	1.1	
Choose MyPlate to Build a Healthier Family	Stages	Healthy Families	13,774	10,181	73.9%	1.0%	10.2%	61.6%	2.5	83.8%	0	6,217	95.0%	1.2	
Be Healthy With Fruits and Veggies	Stages	Healthy Families	12,818	9,972	77.8%	1.0%	9.2%	61.7%	2.0	83.0%	0	4,360	94.3%	1.2	
Make Mealtime a Family Time	Stages	Healthy Families	10,571	8,509	80.5%	0.8%	8.9%	61.9%	2.1	81.7%	0	3,395	92.0%	1.2	
Meatless Meals for Busy Families	Stages	Healthy Families	11,358	8,162	71.9%	0.8%	8.6%	59.5%	2.4	81.1%	0	5,342	89.3%	1.0	
Keep Your Family Safe From E. Coli	Stages	Healthy Families	10,108	8,009	79.2%	0.8%	8.1%	61.4%	1.9	82.2%	0	2,092	93.5%	1.1	
Farm to Family: Keeping Food Safe	Stages	Healthy Families	9,489	7,401	78.0%	0.7%	5.8%	62.0%	2.0	82.4%	0	2,421	87.9%	1.1	
The WIC Food Package: Better Food, Better Health	Stages	Healthy Families	100	71	71.0%	0.0%	0.0%	48.5%	1.6	80.3%	0	22	95.5%	1.1	
Choose Iron-Rich Foods	Stages	Healthy Families	1	1	100.0%	0.0%	0.0%	100.0%	2.0	4.9	100.0%	0	1	100.0%	1.0
Healthy Families			113,260	87,833	77.5%	8.6%	6.7%	61.4%	2.1	83.0%	0	42,827	82.7%	1.1	
Starting Your Infant on Solid Foods	Stages	Infants	71,814	57,372	79.9%	5.6%	5.5%	64.3%	1.7	78.3%	20,057	12,347	85.3%	1.4	
Understanding Your Baby's Sleep	Stages	Infants	54,487	44,649	81.9%	4.4%	5.8%	64.3%	2.0	78.1%	0	3	0.0%	NA	
Understanding Your Baby's Cues	Stages	Infants	55,276	40,187	72.7%	3.9%	6.0%	64.8%	1.9	81.3%	0	11,483	0.1%	1.4	
Baby's First Cup	Stages	Infants	50,860	39,777	78.2%	3.9%	5.1%	65.3%	2.0	81.1%	0	17,901	56.6%	1.3	
Shining Some Light on Vitamin D	Stages	Infants	8,908	6,994	78.5%	0.7%	0.0%	63.1%	1.9	74.7%	3,116	2,562	76.9%	1.4	
Give You and Your Baby A Lifetime Of Healthy Teeth	Skills	Infants	18,739	11,699	62.4%	1.1%	2.4%	66.9%	3.5	83.8%	0	0	NA	NA	
Help Your Baby Sleep Safe and Sound	Skills	Infants	11,127	7,380	66.3%	0.7%	0.7%	67.9%	4.1	79.7%	0	0	NA	NA	
As more lessons are move into the skills-based format, additional means of assessing a user impact needs to be considered.															
Additional metrics around engagement or expectation could be added to better evaluate these lessons.															
Further analysis of user action plan statements may provide user sentiment measures able to better represented, and predict the likelihood that the user engages in positive behavior change.															
Meal Planning	Skills	Meal Planning	32,613	37,891	116.2%	1.7%	0.0%	63.1%	1.2	80.5%	0	0	NA	NA	
Using Substitutions in Healthy Meals	Skills	Meal Planning	14,216	12,647	89.0%	1.2%	0.0%	62.9%	1.4	85.9%	0	0	NA	NA	
Making Time With Your Kids	Skills	Meal Planning	10,111	9,253	91.5%	0.8%	0.0%	64.1%	1.0	81.1%	0	0	NA	NA	
Meal Planning	Skills	Meal Planning	8,649	8,649	100.0%	0.8%	0.0%	65.1%	1.4	82.3%	0	0	NA	NA	
Meal Planning			57,150	48,282	84.5%	4.7%	0.0%	63.6%	1.3	80.3%	0	0	NA	NA	
Mothers in Motion Introduction and Overview	Skills	Mothers in Motion	30,484	19,463	63.8%	1.9%	0.0%	63.4%	0.0	NA	0.0%	0	NA	NA	
How to Help Endangerous Behavior	Skills	Mothers in Motion	3,662	3,662	100.0%	0.8%	0.0%	64.0%	0.0	85.6%	0	0	NA	NA	
Better Ways to Handle Everyday Stress	Skills	Mothers in Motion	6,519	5,073	77.8%	0.5%	0.0%	69.1%	2.2	81.6%	0	0	NA	NA	
Journey to Weight Loss	Skills	Mothers in Motion	3,756	3,154	84.0%	0.3%	0.0%	59.9%	1.6	79.0%	0	0	NA	NA	
Time Saving Tips for Busy Moms	Skills	Mothers in Motion	3,281	2,745	83.7%	0.3%	0.0%	67.5%	2.2	77.9%	0	0	NA	NA	
Effective Ways to Handle Negative Feelings	Skills	Mothers in Motion	2,760	2,373	86.0%	0.2%	0.0%	65.9%	2.2	76.4%	0	0	NA	NA	
Effective Ways to Reduce Junk Food	Skills	Mothers in Motion	2,047	1,799	87.9%	0.2%	0.0%	68.5%	1.5	74.3%	0	0	NA	NA	
Fun and Realistic Ways to Get More Exercise	Skills	Mothers in Motion	1,984	1,772	89.3%	0.2%	0.0%	66.4%	2.0	72.4%	0	0	NA	NA	
Effective Ways to Help with Parenting	Skills	Mothers in Motion	2,014	1,768	87.8%	0.2%	0.0%	68.2%	2.1	72.7%	0	0	NA	NA	
Useful Tips for Grocery Shopping (Part II)	Skills	Mothers in Motion	1,931	1,698	87.9%	0.2%	0.0%	64.9%	1.5	70.1%	0	0	NA	NA	
Useful Tips for Grocery Shopping (Part I)	Skills	Mothers in Motion	1,816	1,627	89.6%	0.2%	0.0%	66.2%	2.0	70.9%	0	0	NA	NA	
Practical Ways to Cook Healthier	Skills	Mothers in Motion	1,587	1,442	90.9%	0.1%	0.0%	68.1%	2.0	69.6%	0	0	NA	NA	
Mothers in Motion			67,762	50,648	74.7%	4.9%	0.0%	65.6%	1.9	48.3%	0	0	NA	NA	
A Recipe for a Healthy Pregnancy	Stages	New & Expecting Parents	12,801	10,399	81.2%	1.0%	5.4%	59.4%	2.5	87.2%	0	6,923	96.6%	1.2	
Food Safety for Moms-to-Be	Stages	New & Expecting Parents	8,270	6,504	78.6%	0.6%	3.1%	59.9%	2.0	83.6%	0	2,180	90.3%	1.1	
Get Into Shape After Your Baby Arrives	Stages	New & Expecting Parents	8,242	5,251	63.7%	0.5%	4.4%	62.9%	2.2	83.8%	0	3,087	91.5%	1.1	
Preparing for a Healthy Pregnancy	Stages	New & Expecting Parents	9,348	519	5.6%	0.1%	6.4%	67.4%	1.9	69.7%	0	230	90.9%	1.4	
New & Expecting Parents			38,661	22,673	58.6%	2.2%	4.5%	60.5%	2.3	85.0%	0	12,420	94.1%	1.2	
OVERALL			1,371,626	1,026,384	74.8%		5.9%	62.3%	2.1	79.0%	48,646	267,028	78.3%	1.2	

Table 4. Top 50 Most Accessed wichealth.org Lesson Links, October 2017 – September 2018

Table 4. Top 50 Most Accessed wichealth.org Lesson Links, October 2017 – September 2018

Resource Link Name	Lesson Name	Stage	Links Viewed	Average Link View Time	% User Engagement
Introducing Table Foods Action Plan	Offer Your Baby the Right Foods As He Grows	Making A Plan	36,411	0.7	16.4%
Help your child enjoy new foods and develop a lifetime of healthy eating.	Trust Your Child to Eat Enough	Sticking To It	29,324	1.1	7.4%
Lead protection action plan	Protect Your Family From Lead With Healthy Foods	Making A Plan	25,236	0.7	21.8%
Fun snack ideas!	Make Meals and Snacks Simple	Sticking To It	20,486	0.9	14.0%
Make snack time fun.	Secrets for Feeding Picky Eaters	Started It	20,237	0.8	8.3%
Choose the best cup for your baby or toddler.	Fun and Healthy Drinks for Kids	Sticking To It	16,929	1.1	8.7%
Encouraging your child to drink water.	Fun and Healthy Drinks for Kids	Sticking To It	16,354	0.8	11.6%
Explore different ways your child can get planned physical activity.	Happy, Healthy, Active Children	Sticking To It	16,193	0.9	8.6%
Don't give up on a picky eater!	Make Meals and Snacks Simple	Sticking To It	15,775	0.9	10.0%
Let your child choose what and how much to eat.	Secrets for Feeding Picky Eaters	Started It	15,727	1.3	6.3%
Plan fun food activities.	Help Your Child Make Good Eating Choices	Sticking To It	15,430	1.0	11.2%
Help me choose the best foods for my baby right now.	Offer Your Baby the Right Foods As He Grows	Making A Plan	14,165	1.3	9.0%
Let your child choose what foods and how much to eat.	Secrets for Feeding Picky Eaters	Started It	13,582	2.7	8.1%
Create a breastfeeding plan to share with your family and health-care providers.	Breastfeeding: Building a Bond for a Lifetime	Anticipating	13,450	1.9	10.4%
Know what foods damage teeth.	Two Minutes Twice a Day for a Healthy Smile	Getting Ready	13,388	0.8	7.2%
Breastfeeding for busy moms.	Breastfeeding: Building a Bond for a Lifetime	Anticipating	13,340	1.1	11.1%
My child is a picky eater.	Secrets for Feeding Picky Eaters	Getting Ready	13,168	1.2	9.8%
Which milk is right for my child over 2 years old?	Fun and Healthy Drinks for Kids	Sticking To It	12,624	2.4	11.0%
Show me tips for preparing table foods.	Offer Your Baby the Right Foods As He Grows	Making A Plan	12,009	1.3	10.4%
The risks of starting solid foods too soon.	Starting Your Infant on Solid Foods	Anticipating	12,008	0.8	7.8%
Common eating problems and how to cope with them.	Secrets for Feeding Picky Eaters	Getting Ready	11,436	1.3	8.5%
Remain calm during tantrums.	Secrets for Feeding Picky Eaters	Getting Ready	11,406	1.3	10.2%
Teach me ways to get my baby to try new foods.	Offer Your Baby the Right Foods As He Grows	Making A Plan	11,260	1.1	11.1%
What kind of foods protect against lead?	Protect Your Family From Lead With Healthy Foods	Making A Plan	10,796	0.6	13.5%
Steps to Calm Your Crying Baby	Understanding Your Baby's Cues	Sticking To It	10,525	0.6	8.5%
Involve the family in eating together.	Help Your Child Make Good Eating Choices	Sticking To It	10,442	0.8	11.9%
Steps to Help Calm Your Crying Baby	Understanding Your Baby's Sleep	Started It	10,406	0.8	10.1%
Myths about starting solid foods.	Starting Your Infant on Solid Foods	Anticipating	10,187	0.7	6.7%
Baby Sleep Patterns	Understanding Your Baby's Sleep	Started It	10,151	0.8	9.3%
Tips for Sleepy Parents	Understanding Your Baby's Sleep	Started It	9,969	0.8	8.9%
How will I know if my baby is ready for new kinds of foods?	Offer Your Baby the Right Foods As He Grows	Making A Plan	9,905	1.0	11.2%
Kick the can for healthier teeth.	Two Minutes Twice a Day for a Healthy Smile	Getting Ready	9,615	0.6	6.7%
2 Ways Babies Sleep	Understanding Your Baby's Sleep	Started It	9,561	0.9	8.8%
Tips and techniques for brushing your children's teeth.	Two Minutes Twice a Day for a Healthy Smile	Started It	9,195	2.9	9.0%
Choose the best cup for your growing toddler.	Baby's First Cup	Started It	9,188	1.2	8.0%
Healthy Sleep for Babies	Understanding Your Baby's Sleep	Started It	9,135	2.2	9.7%
Healthy teeth for mom and baby.	Two Minutes Twice a Day for a Healthy Smile	Started It	9,016	0.7	6.4%
The DO's and DON'T's to help your teething infant.	Two Minutes Twice a Day for a Healthy Smile	Started It	8,911	0.9	7.2%
Fun physical activity game for your child.	Happy, Healthy, Active Children	Sticking To It	8,452	0.7	12.2%
Developing good eating habits now will help your child as he/she grows.	Secrets for Feeding Picky Eaters	Getting Ready	8,384	1.7	10.6%
Offer a variety of healthy foods.	Secrets for Feeding Picky Eaters	Getting Ready	8,247	0.8	10.8%
Energy drinks- what's in them?	Fun and Healthy Drinks for Kids	Sticking To It	8,230	3.6	10.4%
What other things can I do to keep my family safe from lead?	Protect Your Family From Lead With Healthy Foods	Making A Plan	8,060	0.8	13.7%
Encourage self-feeding.	Starting Your Infant on Solid Foods	Sticking To It	7,895	0.6	9.4%
How can I protect my baby from teeth problems?	Baby's First Cup	Started It	7,871	0.7	6.6%
Running out of ideas for snacks and meals for your 1-3 year old?	Make Meals and Snacks Simple	Started It	7,839	1.2	8.6%
Know that your child will like or dislike some foods.	Secrets for Feeding Picky Eaters	Getting Ready	7,799	1.1	10.7%
What if my baby is overwhelmed?	Understanding Your Baby's Cues	Sticking To It	7,772	0.7	8.9%
Find healthy meal and snack recipes in a snap!	Make Meals and Snacks Simple	Sticking To It	7,468	1.2	13.9%
Easy fruit and veggie recipes for your family.	Fruits and Veggies Grow Healthy Kids	Sticking To It	7,205	1.0	13.4%

Table 4 shows the top 50 most accessed wichealth.org lesson resources during the current evaluation period. The proportion of views that were liked, favorited, shared or commented on is provided by the “User Engagement” metric. This is a slight change from the definition of engagement from the prior midyear evaluation, as a user comments on resource links was not previously included. Overall for the last year, the median value for this metric was 9.9% among all resources, or about 1 in 10 users that view a resource link end up liking, favoriting, sharing or commenting on it. This is consistent with the midyear evaluation, adjusting for the inclusion of user resource comments.

One of the goals of the next evaluation report will be to present work and findings associated with conducting a natural language processing approach to elucidate themes from user comments, especially with respect to the user’s reported action plan at the conclusion of their lesson. However, analysis of comment activity by wichealth.org language version over the last year demonstrated that user engagement via commenting on resource links is much more common among Spanish language users.

Figure 6 shows the remarkable variance between the English and Spanish site version rate of resource comments made per lesson completed. Overall, only 1% of English lessons completed recorded any resource comments left by users. The Spanish version resource comment rate over 6 times the English rate at 6.1%. Further analysis of this will be presented in the midyear evaluation. The other user actions of engagement, including link likes, favorites and shares appear to also be many times more frequent among Spanish lessons completed than English lessons. This will be investigated in more detail in the midyear evaluation.

Figure 6. Resource Comment Rate by Lesson & wichealth.org Language Version, October 2017 – September 2018

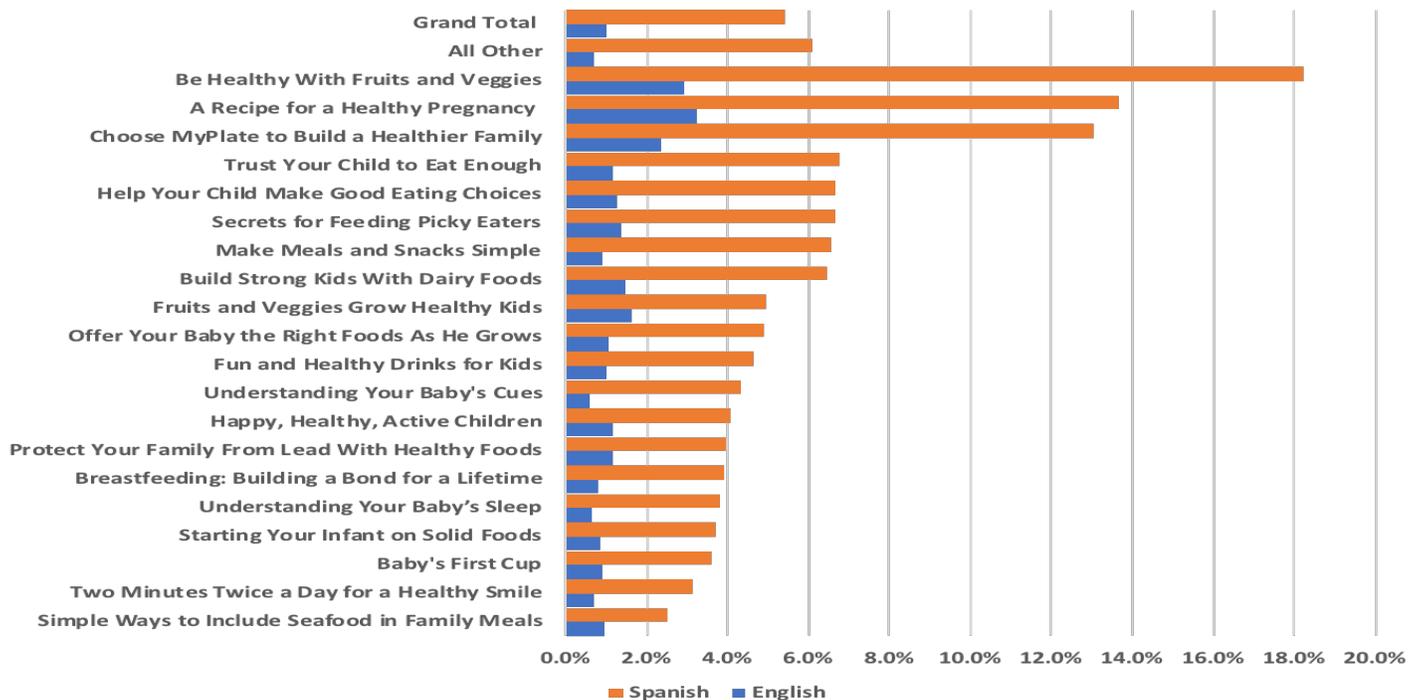


Table 5 presents the wichealth.org KPIs by race for the current evaluation period. African-American EBSU users continue to be significantly less likely to progress at least one stage of change, adjusting for skills-based lessons where there is no opportunity to progress during lesson completion (73.0% compared to 78.3% overall, $p < 0.001$). Mobile device usage increases have been driven by African-Americans, among whom 67% are completing lessons by mobile device. As recommended in the midyear evaluation, additional data needs to be collected about why a client is choosing a mobile device over a device with fixed access. This information would help better understand whether mobile devices are enabling access or serving as a means of convenience and/or enablement of multitasking.

User information about race was missing for 191,366 lessons completed (18.6%). This continues to improve which has been driven by updates correcting for how Spanish site activity was being identified in the system

Table 5. wichealth.org KPIs by Race, October 2017 – September 2018

Race	Lessons Attempted	Lessons Completed	Lessons Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWL	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
White	676,888	520,628	76.9%	50.7%	3.1%	60.1%	87.2%	2.1	2.3	78.0%	135,835	23,767	131,594	79.2%	1.2
Missing	263,307	191,366	72.7%	18.6%	16.3%	66.9%	88.8%	2.2	2.7	81.2%	35,368	9,781	53,832	80.9%	1.1
Black or African American	250,179	182,786	73.1%	17.8%	0.2%	66.9%	84.5%	2.0	2.2	77.5%	52,454	8,761	45,204	73.0%	1.2
Multiracial	81,644	60,712	74.4%	5.9%	11.3%	63.5%	88.2%	2.2	2.7	80.3%	12,423	2,998	16,578	79.2%	1.2
Asian	57,877	40,898	70.7%	4.0%	0.4%	48.0%	89.0%	2.5	3.0	81.1%	7,695	1,770	11,573	75.4%	1.2
American Indian or Alaskan Native	30,865	21,994	71.3%	2.1%	20.2%	63.4%	89.1%	2.1	2.6	80.3%	4,120	1,189	6,072	78.9%	1.2
Native Hawaiian or Pacific Islander	10,866	8,000	73.6%	0.8%	2.5%	59.9%	89.6%	2.3	2.4	82.8%	1,375	380	2,175	74.2%	1.2
Grand Total	1,371,626	1,026,384	74.8%		5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Latino users were responsible for 28.9% of lessons completed during the last annual evaluation period (Table 6). Latino users that began stage-based lessons in an early stage continue to be more likely to progress compared to non-Latino users (80.3% compared to 76.9%, $p < 0.01$). This observation is also consistent with the greater likelihood of Latinos to access resource links as well as spend more time viewing them. Further, Latinos are similarly more likely to believe they can make changes using what they learned from the lesson. However, as reported in the midyear evaluation, Latinos have a higher rate of mobile access which is inconsistent with the higher performance observed on wichealth.org KPIs. As indicated above, the reason why a particular user accesses wichealth.org using a mobile device could be the key to this observation. The better overall performance of non-mobile users compared to mobile users could be associated with whether the user's motivation for mobile device use is associated with facilitation of access or, conversely, convenience.

Table 6. wichealth.org KPIs by Latino Ethnicity, October 2017 – September 2018

Latino	Lessons Attempted	Lessons Completed	Lessons Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWLTV	Average Link Views among UWLTV	Average Link View Time among UWLTV	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
No	881,098	670,032	76.0%	65.3%	0.1%	60.8%	86.1%	2.1	2.3	77.4%	185,878	29,706	166,318	76.9%	1.2
Yes	409,190	296,768	72.5%	28.9%	17.7%	64.8%	89.5%	2.2	2.8	82.1%	49,455	16,905	84,622	80.3%	1.1
Missing	81,338	59,584	73.3%	5.8%	10.9%	67.3%	87.4%	2.1	2.3	78.7%	13,937	2,035	16,088	82.1%	1.2
Grand Total	1,371,626	1,026,384	74.8%		5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Age group continues to be associated with several wichealth.org KPIs (Table 7). As reported in the last several evaluations, older users tend to have more link views and longer link views than younger users. Younger users (24yrs and under) were significantly less likely to demonstrate stage progression among EBSU. Mobile device usage is strongly associated with user age and users between the ages of 18 and 29 are significantly more likely to use a mobile device to access wichealth.org than other users ($p < 0.01$). Users over the age of 50 had a lesson completion rate of only 31.5%. Missing data for age continues to be high at 22% but continues to improve. Allowing users to input date of birth as an open-ended item is a key reason for the higher level of missing data for user age. Restrictions to input format or use of calendar or drop downs for users to select date of birth would greatly reduce missing data for user age.

Table 7. wichealth.org KPIs by User Age Group, October 2017 – September 2018

Age Group	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWLTV	Average Link Views among UWLTV	Average Link View Time among UWLTV	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
<18 Years	3,655	2,424	66.3%	0.2%	2.3%	63.0%	88.2%	2.0	2.6	79.3%	544	363	595	60.2%	1.3
18 - 24 Years	238,828	179,778	75.3%	17.5%	2.3%	66.7%	87.4%	2.1	2.1	77.9%	43,524	13,518	45,948	71.3%	1.2
25 - 29 Years	322,460	244,859	75.9%	23.9%	3.8%	65.8%	86.9%	2.1	2.3	79.3%	59,977	12,649	63,331	77.4%	1.2
30 - 34 Years	257,010	193,446	75.3%	18.8%	6.1%	61.4%	86.9%	2.1	2.5	79.2%	48,054	8,191	49,731	79.9%	1.2
35 - 39 Years	152,517	113,230	74.2%	11.0%	8.1%	55.7%	87.1%	2.2	2.7	78.6%	28,375	3,737	29,340	80.8%	1.2
40 - 44 Years	58,127	42,381	72.9%	4.1%	9.9%	48.9%	87.4%	2.2	3.0	79.0%	10,366	975	11,447	82.3%	1.2
45 - 49 Years	16,954	12,440	73.4%	1.2%	5.9%	39.4%	87.3%	2.2	3.1	79.2%	3,205	142	3,284	84.0%	1.2
50+ Years	31,363	9,884	31.5%	1.0%	12.9%	30.5%	89.2%	2.3	3.5	78.7%	2,336	121	2,527	83.3%	1.2
Missing	290,712	227,942	78.4%	22.2%	8.2%	64.4%	87.5%	2.1	2.4	79.0%	52,889	8,950	60,825	80.8%	1.2
Grand Total	1,371,625	1,026,384	74.8%		5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Table 8 presents the relationship between a user's child status (gestational/parity status) and wichealth.org KPIs. The majority (74%) of wichealth.org users that attempt and complete lessons are women that are not pregnant, with the largest group (40.4%) having only one child. Notable variance across child status groups is observed in frequency of mobile access, user belief in the ability to change behavior and likelihood of early beginning stage users progressing at least one stage of change. Mobile access to wichealth.org tends to be higher among those that report the least amount of information. This is an important trend as additional thought about how user profile data is collected may need to be considered. As mobile device usage continues to increase, innovative methods for collecting user data must be explored. However, belief in the ability to change behavior tends to be higher among users that do not provide information in their profile about their children. Users with unknown child information, have more users that report the ability to change behavior using what they learned than those that enter child information on their profile. Finally, stage progression follows a similar trend with users with unknown child status having the greatest likelihood of advancing at least one stage. Although completing one's wichealth.org profile would seem to suggest a user that is more engaged with the site, this activity is not predictive of better performance on wichealth.org KPIs. Again, this suggests a need to improve how user profile information is collected, especially among mobile users.

Table 9 compares KPIs by wichealth.org site language version. The lesson completion rate among those using the Spanish language version of wichealth.org is significantly lower than that observed for users of the English version ($p < 0.001$). However, among those that completed lessons, Spanish version user stage progression was significantly higher than for English site users ($p < 0.01$). Overall, most users that do not complete their lesson end up completing a different lesson. Matching the most appropriate lesson topic to a given user is an area that needs additional consideration. A lesson topic recommendation engine may help to reduce the number of users that do not complete the first lesson they choose to attempt. Based on the data, this is especially important among Spanish version users, which may indicate that the lesson topic descriptions may need improvement, especially those in Spanish.

Table 8. wichealth.org KPIs by User Child Status Group, October 2017 – September 2018

Child Status	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWL	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
Not Pregnant, 1 Child	559,589	414,392	74.1%	40.4%	4.1%	59.7%	86.6%	2.1	2.4	77.8%	103,628	11,289	107,888	75.3%	1.2
Not Pregnant, 2-4 Children	259,550	198,898	76.6%	19.4%	4.3%	62.3%	86.7%	2.1	2.2	78.1%	50,885	4,842	53,065	79.9%	1.2
Not Pregnant, Children Unknown	184,532	145,902	79.1%	14.2%	5.7%	64.0%	87.7%	2.2	2.4	81.6%	37,099	4,333	39,731	85.6%	1.1
Pregnant, Children Unknown	173,348	124,113	71.6%	12.1%	3.4%	64.0%	88.8%	2.3	2.8	80.4%	25,815	18,624	29,384	74.1%	1.2
Pregnancy Status and Children Unknown	85,095	61,412	72.2%	6.0%	29.4%	66.7%	87.7%	2.1	2.5	79.4%	13,361	1,925	17,433	84.6%	1.1
Pregnant, 1 Child	71,422	52,917	74.1%	5.2%	3.9%	65.1%	88.0%	2.1	2.4	78.9%	11,628	5,773	12,433	75.5%	1.2
Pregnant, 2-4 Children	22,790	17,357	76.2%	1.7%	3.5%	67.8%	87.8%	2.1	2.0	79.7%	4,157	1,407	4,167	78.7%	1.2
Pregnancy Status Unknown, 1 Child	10,983	8,063	73.4%	0.8%	7.2%	77.4%	86.5%	2.0	1.9	73.5%	1,862	375	2,066	71.8%	1.2
Pregnancy Status Unknown, 2-4 Children	2,924	2,228	76.2%	0.2%	5.3%	68.5%	87.6%	2.0	1.7	72.8%	510	58	584	83.2%	1.2
5+ Children	1,392	1,102	79.2%	0.1%	1.5%	57.9%	86.0%	2.1	2.0	77.3%	325	20	277	82.7%	1.2
Grand Total	1,371,625	1,026,384	74.8%		5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Table 9. wichealth.org KPIs by User Language, October 2017 – September 2018

Language	Lessons Attempted	Lessons Completed	Lessons Completion Rate	% Lessons Completed	% Mobile	% UWL	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
English	1,278,352	967,011	75.6%	94.2%	62.1%	87.1%	2.1	2.4	79.1%	241,059	45,662	248,060	77.8%	1.2
Spanish	93,274	59,373	63.7%	5.8%	66.9%	88.5%	2.1	3.1	75.7%	8,211	2,984	18,968	84.7%	1.1
Grand Total	1,371,626	1,026,384	74.8%		62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

A user's home continues to be the most frequent (72.5%) place wichealth.org users complete their lessons (Table 10). As this is an exit survey item, lesson completion rate among respondents is 100%. Users are also more likely to use a mobile device when using wichealth.org from home. Belief in the ability to change behavior as well as likelihood of progression among early beginning stage users is greatest among users that completed their lessons at work. Work locations and libraries are the places that users are least likely to complete their lessons on a mobile device.

Table 10. wichealth.org KPIs by User Access Location, October 2017 – March 2018

Location	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWL	Average Link Views among UWL	Average Link View Time among UWL	% BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
Home	743,992	743,973	100%	72.5%	6.3%	65.4%	90.3%	2.2	2.6	86.7%	162,501	35,961	201,250	78.9%	1.2
Missing	445,709	100,487	23%	9.8%	4.8%	61.8%	56.5%	1.8	1.3	6.9%	50,324	3,705	16,066	67.7%	1.2
Work	81,890	81,889	100%	8.0%	1.8%	40.8%	90.7%	2.2	2.7	88.0%	18,947	3,140	22,450	82.0%	1.2
WIC clinic	61,908	61,908	100%	6.0%	8.2%	53.2%	92.3%	2.0	1.4	86.0%	9,436	3,974	16,862	76.1%	1.2
Other	30,827	30,827	100%	3.0%	3.0%	75.0%	90.8%	2.1	2.3	84.3%	6,443	1,486	8,444	78.5%	1.2
Library	7,300	7,300	100%	0.7%	3.9%	21.8%	90.3%	2.3	2.3	88.4%	1,619	380	1,956	78.6%	1.2
Grand Total	1,371,626	1,026,384			5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Statistics on user preference regarding how wichealth.org users would like to receive nutrition education is presented in table 11. 77.1% of users indicate that they prefer to get their nutrition education from wichealth.org. As indicated in the midyear evaluation, this is significantly less than reported previously. This is related to a decrease in missing data associated with Spanish site version users. Among users that reported a class or group session at a WIC clinic as their preferred method of receiving nutrition education, 10.2% were Spanish version users, nearly twice the overall rate. Other

than those not providing a response to this item, wichealth.org KPIs are remarkably consistent across reported user preferences.

Table 11. wichealth.org KPIs by User Preferred Method of Nutrition Education, October 2017 – September 2018

Preferred Method of Nutrition Education	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWL	% UWL*	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
wichealth.org website	791,125	791,111	100%	77.1%	5.7%	63.1%	90.6%		2.2	2.5	87.5%	171,968	37,114	214,306	79.5%	1.2
No Response	460,620	115,397	25%	11.2%	5.5%	61.2%	60.3%		1.8	1.4	12.2%	54,696	4,171	19,560	67.9%	1.2
One-on-one with a counselor at the WIC clinic	68,865	68,863	100%	6.7%	5.6%	59.0%	90.5%		2.1	2.3	86.8%	13,161	4,270	18,654	76.0%	1.2
Bulletin board or handouts from the WIC clinic	31,546	31,544	100%	3.1%	6.7%	56.8%	90.8%		2.1	2.2	83.9%	5,953	1,799	8,796	75.9%	1.2
A class or group session at the WIC clinic	19,470	19,469	100%	1.9%	10.2%	60.5%	89.9%		2.1	2.7	87.4%	3,492	1,292	5,712	78.4%	1.2
Grand Total	1,371,626	1,026,384			5.8%	62.3%	87.2%		2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Key performance indicators for wichealth.org appear to be inversely related to how many lessons a user completed (Table 12). Other than those not completing any lessons, users that complete the fewest number of lessons (1 or 2) are more likely to access resource links during their lesson, more likely to report belief in the ability to change behavior and more likely to progress in stage of change if they started their lesson in an early beginning stage. The next evaluation will look more closely at measures of engagement by various user groups to better understand why those that complete the most lessons tend to demonstrate the poorest performance with respect to wichealth.org KPIs.

The largest group of unique users (49.4%) completed just one lesson. Most lessons are completed by users that finished at least two lessons during the period, however, most unique users, still complete only one lesson. The statistics on this vary depending on whether this is being evaluated over a six-month period (midyear evaluation) compared to a full year (annual evaluation). For a year-long annual evaluation period, the average number of lessons completed per unique user has been about two for the last several years. In the last several midyear evaluations, the average number of lessons completed per unique user was about 1.5. Despite this, more than 40% of wichealth.org users complete more than one lesson, which has been increasing over time.

Table 12. wichealth.org KPIs by Whether User Completed Multiple Lessons, October 2017 – September 2018

Number of Lessons Completed	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	Unique Users	% Unique Users	% Spanish*	% Mobile*	% UWL*	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
0	27,355	0	0.0%	0.0%	14,292	2.8%	16.4%	63.5%	27.6%	1.5	2.6	0.0%	5,476	1,235	6,941	18.8%	1.1
1	344,563	248,269	72.1%	24.2%	248,269	49.4%	7.2%	61.5%	91.5%	2.0	2.6	83.3%	38,478	13,905	72,093	82.5%	1.2
2	352,093	269,450	76.5%	26.3%	134,725	26.8%	6.5%	62.1%	89.1%	2.1	2.6	81.3%	54,701	12,480	75,580	82.8%	1.2
3	197,224	151,806	77.0%	14.8%	50,602	10.1%	5.8%	63.7%	85.6%	2.1	2.6	77.9%	39,351	7,874	38,748	78.0%	1.2
4	117,257	91,916	78.4%	9.0%	22,979	4.6%	4.9%	63.1%	86.2%	2.2	2.4	77.4%	28,676	4,606	21,682	75.9%	1.2
5	70,233	54,970	78.3%	5.4%	10,994	2.2%	4.8%	63.8%	86.0%	2.2	2.4	76.8%	17,658	2,798	12,841	72.7%	1.2
6+	262,901	209,973	79.9%	20.5%	20,231	4.0%	3.9%	61.9%	81.6%	2.3	1.9	72.5%	70,406	6,983	46,084	67.2%	1.2
Grand Total	1,371,626	1,026,384	74.8%		502,092		5.8%	62.3%	87.2%	2.1	2.4	78.9%	81,324	24,012	122,685	78.3%	1.2

Table 13 presents descriptive statistics on the span of time between lessons among users that completed at least two lessons. Among the users that completed multiple lessons, 67.3% did so on the same day. 22.2% of users completing at least two lessons did so with at least a month between lessons. Getting users to return to wichealth.org 30-90 days following lesson completion will become increasingly important as wichealth.org migrates content to skills-based lessons that would be best evaluated using longer term follow-up opportunities to assess how a user is doing with respect to the action or change in behavior they planned at the conclusion of their lesson. The re-design and launch of the wichealth.org impact manager should address a significant part of this need. Subsequent evaluations will focus on outcomes assessed by returning users via the impact manager and the characteristics of return users and the methods used to promote their return.

Table 13. wichealth.org KPIs by Whether User Completed Multiple Lessons, October 2017 – September 2018

Lessons Group	Average Time Between Completions				Grand Total	%
	Same Day	Within Week	>1 Week <=1 Month	>1 Month		
2 Lessons	177,197	1,859	4,893	85,501	269,450	34.6%
3 Lessons	94,511	3,132	8,892	45,271	151,806	19.5%
4 Lessons	58,765	2,398	7,939	22,814	91,916	11.8%
5 Lessons	35,409	1,890	6,164	11,507	54,970	7.1%
6+ Lessons	157,651	16,774	28,075	7,473	209,973	27.0%
Grand Total	523,533	26,053	55,963	172,566	778,115	
%	67.3%	3.3%	7.2%	22.2%		

Tables 14 and 15 provide additional information on wichealth.org users regarding their level of education and marital status. Note that users that report not finishing high school are most likely to complete their wichealth.org lessons on a mobile device and least likely to indicate positive belief in the ability to change behavior as well as demonstrate stage progression. Users with an advanced college degree are the least likely, in fact less than half as likely as those not finishing high school, to complete their lessons using a mobile device. However, those not completing high school are also the most likely to attempt a lesson and not complete it. Therefore, two factors need to be considered with respect to lesson completion: appropriateness of the lesson topic as well the wichealth.org mobile access user experience.

Table 14. wichealth.org KPIs by User Level of Education, October 2017 – September 2018

User Level of Education	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWL	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
High school degree or GED	395,768	289,257	73.1%	28.2%	4.6%	67.8%	86.6%	2.1	2.2	77.6%	70,421	15,920	73,296	73.3%	1.2
Missing	304,033	236,049	77.6%	23.0%	7.4%	65.5%	87.8%	2.1	2.3	81.1%	57,373	7,305	64,584	85.0%	1.1
Some college	289,692	221,002	76.3%	21.5%	1.8%	58.4%	87.6%	2.2	2.5	78.5%	54,075	11,573	56,168	77.5%	1.2
Did not finish high school	134,872	92,681	68.7%	9.0%	15.0%	72.6%	86.6%	2.0	2.1	76.6%	20,854	5,286	24,219	72.0%	1.2
4-year college or university degree	99,224	74,879	75.5%	7.3%	7.1%	43.9%	87.0%	2.3	3.2	79.5%	19,013	3,134	19,767	81.8%	1.1
Community college degree	78,781	60,667	77.0%	5.9%	1.6%	52.4%	87.1%	2.2	2.7	80.0%	15,232	3,023	15,483	79.9%	1.2
Trade skills training	46,672	34,798	74.6%	3.4%	9.2%	62.9%	88.1%	2.2	2.7	78.7%	7,819	1,795	9,186	79.0%	1.2
Advanced college degree	22,584	17,051	75.5%	1.7%	7.1%	35.4%	87.2%	2.3	3.2	79.4%	4,483	610	4,325	82.6%	1.1
Grand Total	1,371,626	1,026,384	74.8%		5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Individuals not providing marital status information their profile appear to demonstrate the best performance on wichealth.org KPIs. Again, profile completion isn't associated with better wichealth.org outcomes as seen with other indicators of engagement. Further consideration of how and when to collect user profile information, as well as potentially providing a reminder to those about to complete their lesson that they need to review their profile is warranted.

Table 15. wichealth.org KPIs by User Marital Status October 2017 – September 2018

User Marital Status	Lessons Attempted	Lessons Completed	Lesson Completion Rate	% Lessons Completed	% Spanish	% Mobile	% UWL	Average Link Views among UWL	Average Link View Time among UWL	%BMC	Non Stage Based Lessons Completed	AGBSU N	EBSU N	% Stage Progression among EBSU	Average Stages Progressed among EBSU
Single, never married	578,131	426,257	73.7%	41.5%	3.5%	65.8%	86.5%	2.1	2.3	78.1%	105,916	25,586	107,781	73.2%	1.2
Married	403,728	299,460	74.2%	29.2%	8.6%	55.5%	87.6%	2.2	2.7	78.4%	69,733	12,849	78,694	79.9%	1.2
Missing	311,729	241,936	77.6%	23.6%	7.0%	66.2%	87.8%	2.1	2.3	81.1%	58,963	7,719	65,963	84.6%	1.1
Divorced	73,441	55,419	75.5%	5.4%	2.9%	56.9%	87.3%	2.1	2.3	77.4%	13,889	2,381	13,764	78.3%	1.2
Widowed	4,597	3,312	72.0%	0.3%	2.6%	53.5%	88.1%	2.1	2.5	78.4%	769	111	826	80.1%	1.2
Grand Total	1,371,626	1,026,384	74.8%		5.8%	62.3%	87.2%	2.1	2.4	78.9%	249,270	48,646	267,028	78.3%	1.2

Table 16 presents the top 3 reasons why users that complete lessons hold back from behavior change among lessons with at least 200 responses to the multiple-choice options. The holding back multiple-choice response distribution has remained consistent over the last several evaluation and content tailored to address these concerns should be available to route users

to when needed. Further, over 6,000 additional open-ended responses associated with why users are holding back from behavior change were also collected. One of the key objectives of the next midyear evaluation is to complete a full analysis of these as well as other open-ended response collected from users during their session.

Table 16. Top Reasons Why wichealth.org Clients are Holding Back from Behavior Change, Oct 2017 – Sep 2018

<u>Lesson / Top 3 Holding Backing Responses</u>	<u>N Responses</u>
<u>Breastfeeding: Building a Bond for a Lifetime</u>	<u>5,973</u>
It's too late for me to start breastfeeding my baby.	3,830
Trying to breastfeed is just too overwhelming.	1,654
I'm too busy to worry about trying to breastfeed.	489
<u>Offer Your Baby the Right Foods As He Grows</u>	<u>4,174</u>
My baby doesn't seem ready for table foods.	1,824
My baby likes the foods I'm already feeding him.	1,239
My baby is breastfeeding or bottle feeding, so I don't know why I need to do this.	1,111
<u>Protect Your Family From Lead With Healthy Foods</u>	<u>3,066</u>
I don't believe my family is at risk from lead.	1,997
It is hard to find the time to do this.	750
I don't think diet makes much of a difference when it comes to the risks of lead.	319
<u>Simple Ways to Include Seafood in Family Meals</u>	<u>2,686</u>
Fish and other seafood are too expensive.	1,031
I don't think my family will eat fish or shellfish.	995
I don't like fish or other seafood.	660
<u>Starting Your Infant on Solid Foods</u>	<u>1,602</u>
I think my child is too young.	1,248
My doctor says to wait.	234
I don't see anything wrong with waiting to feed my infant solids.	120
<u>Secrets for Feeding Picky Eaters</u>	<u>872</u>
My child is picky, but his choices are healthy.	434
I've tried to do this in the past with no success.	254
I don't think I should force my child to eat something he doesn't like.	184
<u>Trust Your Child to Eat Enough</u>	<u>554</u>
Nothing is wrong with my child's eating habits.	224
I know how much food my child should eat so I put it on the plate for her to finish.	194
I don't think anything is wrong with the way we are now.	136
<u>Two Minutes Twice a Day for a Healthy Smile</u>	<u>398</u>
There's nothing wrong with how we are now.	299
I've tried doing this before and it was just too hard.	56
We don't have enough time to do this.	43
<u>Help Your Child Make Good Eating Choices</u>	<u>395</u>
I give my child the right amount of food so they should be able to finish it all.	236
My child is too young.	98
My child would eat all the wrong foods if I let him/her decide what to eat.	61
<u>Build Strong Kids With Dairy Foods</u>	<u>270</u>
I think I have all the information I will need.	149
I don't think I need to learn about this.	92
I really don't understand why I need to know about this.	29
<u>Meatless Meals for Busy Families</u>	<u>252</u>
I've tried offering meatless meals before, and my family doesn't like them.	88
My family is picky about what they eat.	88
My family won't eat meatless meals.	76

wichealth.org Health eKitchen Usage Patterns and Statistics

Health eKitchen has demonstrated to be an invaluable resource for wichealth.org users as well as an effective means of increasing user engagement and lesson progression outcomes when used prior to lesson completion (<https://www.researchgate.net/publication/328378616>). Table 17 shows that stage progression is most likely when there is an HeK view completed prior to the lesson. As lessons migrate toward skills-based formats, evaluation of the impact HeK will need to consider other indicators such as engagement and likelihood of achieving one's desired action plan based on sentiment analysis will be needed. Note that mobile use may be a contributor here as HeK users that also completed at least one lesson were less likely than lesson completers with no HeK views to access wichealth.org using a mobile device.

Table 17. wichealth.org Lessons Completed by HeK View Group, October 2017 – September 2018

<u>Cohort</u>	<u>N</u>	<u>Unique Users</u>	<u>% Mobile</u>	<u>% BMC</u>	<u>%EBSU</u>	<u>% Progress</u>
No HEK Views	974,348	470,589	62.7%	78.9%	26.1%	78.1%
HeK View Before Lesson	43,584	16,360	55.8%	77.7%	24.1%	82.4%
HeK View After Lesson	8,452	3,921	56.4%	76.2%	25.1%	80.4%

Table 18. wichealth.org Lessons Completed associated with HeK Views, October 2017 – September 2018

Lesson Name	Lesson Attempts with Associated HeK Views	% of Lessons Attempted	Lesson Completions Associated with HeK Views	% of Lessons Completed	% of Incomplete Lessons Associated with HeK Views
Saving Time With No Cook Recipes	2,168	20.6%	1,800	19.8%	26.0%
Recipes Made Easy	1,398	14.3%	1,233	14.3%	14.2%
The WIC Food Package: Better Food, Better Heal	12	12.0%	10	14.1%	6.9%
Finding Recipes That Work	2,790	12.3%	2,224	12.4%	12.0%
Using Substitutions In Healthy Meals	1,712	12.0%	1,528	12.1%	11.7%
Useful Tips for Grocery Shopping (Part I)	189	10.4%	161	9.9%	14.8%
Useful Tips for Grocery Shopping (Part II)	179	9.3%	152	9.0%	11.6%
Preparing for a Healthy Pregnancy	540	5.8%	46	8.9%	5.6%
Practical Ways to Cook Healthier	145	9.1%	120	8.3%	17.2%
Effective Ways to Help with Parenting	173	8.6%	144	8.1%	11.8%
Fun and Realistic Ways to Get More Exercise	172	8.7%	144	8.1%	13.2%
Meatless Meals for Busy Families	886	7.8%	643	7.9%	7.6%
Effective Ways to Reduce Junk Food	171	8.4%	141	7.8%	12.1%
Effective Ways to Handle Negative Feelings	206	7.5%	174	7.3%	8.3%
Time Saving Tips for Busy Moms	255	7.8%	201	7.3%	10.1%
Get FRESH at the Farmers Market	1,122	7.5%	892	7.3%	8.7%
Journey to Weight Loss	273	7.3%	219	6.9%	9.0%
Making Healthy Meals	856	6.8%	681	6.7%	7.2%
Plan Meals to Help Children Eat Healthier	680	7.1%	510	6.6%	9.2%
Better Ways to Handle Everyday Stress	464	7.1%	328	6.5%	9.4%
Mothers in Motion Introduction and Overview	2,036	6.7%	1,240	6.4%	7.2%
Simple Ways to Include Seafood in Family Meals	1,595	6.4%	1,261	6.3%	7.2%
Keep Your Family Safe From E. Coli	628	6.2%	490	6.1%	6.6%
Choose MyPlate to Build a Healthier Family	839	6.1%	595	5.8%	6.8%
Healthy Whole Grains	1,083	5.9%	846	5.8%	6.5%
Eat Well - Spend Less	834	5.9%	606	5.7%	6.7%
Farm to Family: Keeping Food Safe	538	5.7%	407	5.5%	6.3%
Make Mealtime a Family Time	601	5.7%	462	5.4%	6.7%
Make Meals and Snacks Simple	3,667	5.5%	2,813	5.2%	6.9%
Be Healthy With Fruits and Veggies	696	5.4%	507	5.1%	6.6%
Fun and Healthy Drinks for Kids	3,200	5.2%	2,582	5.0%	6.1%
Get Into Shape After Your Baby Arrives	407	4.9%	263	5.0%	4.8%
Protect Your Family From Lead With Healthy Foc	3,045	4.9%	2,113	5.0%	4.8%
Give You and Your Baby A Lifetime Of Healthy Te	937	5.0%	568	4.9%	5.2%
Build Strong Kids With Dairy Foods	2,177	5.1%	942	4.8%	5.3%
Food Safety for Moms-to-Be	426	5.2%	307	4.7%	6.7%
Help Your Child Make Good Eating Choices	2,109	4.8%	1,694	4.7%	5.5%
Trust Your Child to Eat Enough	2,956	4.7%	2,407	4.6%	5.3%
Two Minutes Twice a Day for a Healthy Smile	3,944	4.5%	2,893	4.4%	4.8%
Secrets for Feeding Picky Eaters	3,333	4.5%	2,466	4.3%	5.0%
Happy, Healthy, Active Children	2,152	4.4%	1,705	4.3%	4.8%
A Recipe for a Healthy Pregnancy	578	4.5%	441	4.2%	5.7%
Offer Your Baby the Right Foods As He Grows	4,198	4.4%	2,386	4.2%	4.8%
Fruits and Veggies Grow Healthy Kids	2,094	4.4%	1,597	4.1%	5.3%
Shining Some Light on Vitamin D	389	4.4%	286	4.1%	5.4%
Breastfeeding: Building a Bond for a Lifetime	3,366	3.7%	2,338	3.7%	3.7%
Baby's First Cup	1,942	3.8%	1,469	3.7%	4.3%
Understanding Your Baby's Sleep	1,950	3.6%	1,556	3.5%	4.0%
Understanding Your Baby's Cues	1,930	3.5%	1,348	3.4%	3.9%
Starting Your Infant on Solid Foods	2,418	3.4%	1,864	3.2%	3.8%
Help Your Baby Sleep Safe and Sound	425	3.8%	233	3.2%	5.1%
Choose Iron-Rich Foods	0	0.0%	0	0.0%	0.0%
Grand Total	70,884	5.2%	52,036	5.1%	5.5%

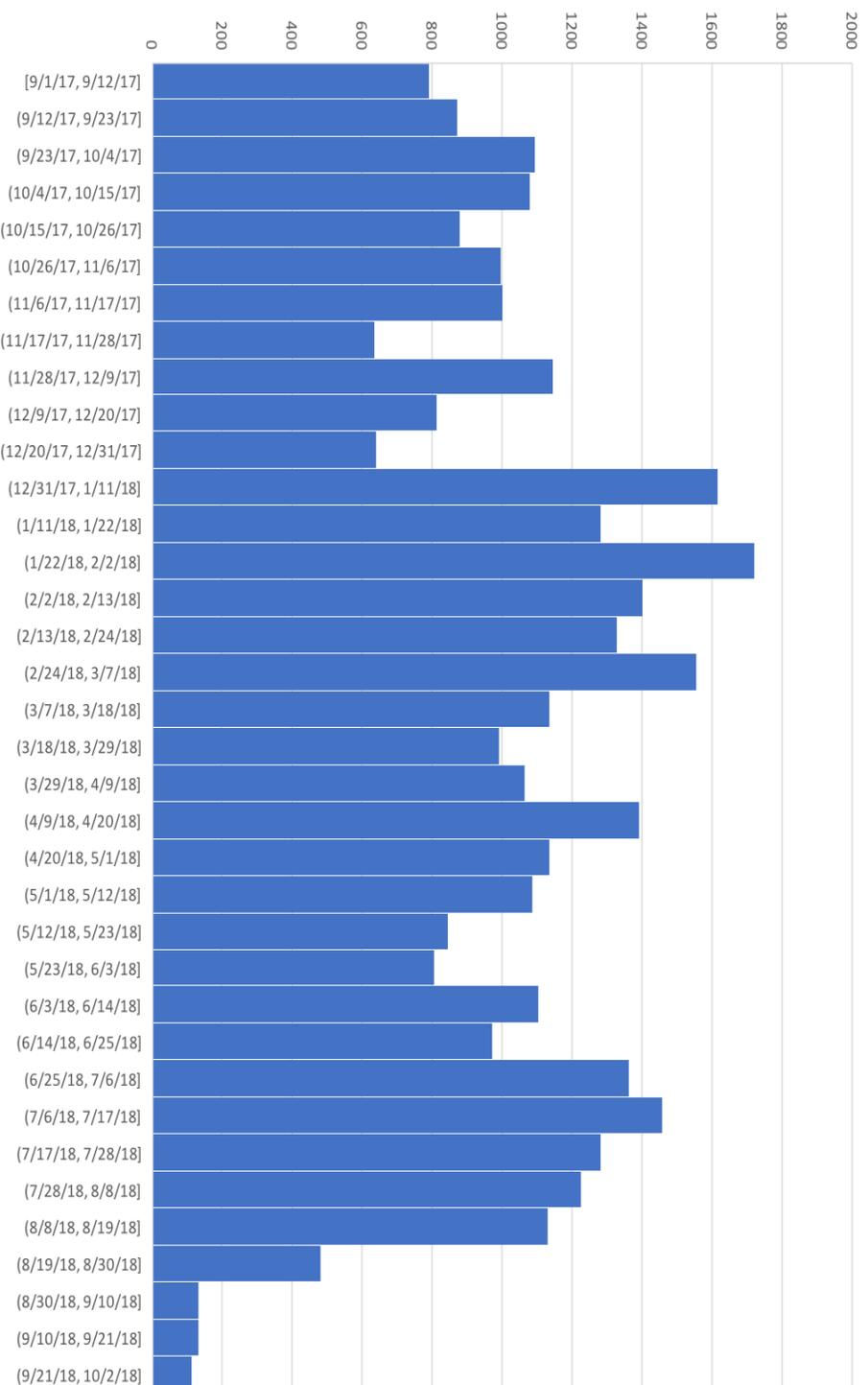
Table 18 presents the lessons most associated with HeK uses. Note that nearly 19,000 incomplete lessons were attempted by users that completed HeK views. About 1 in 5 users that attempted or completed the lesson “Saving Time with No Cook Recipes” also completed a HeK view. Many of the lessons most likely to be associated with an HeK view, like that just mentioned, are even more likely to have a HeK view during a user’s session if the lesson attempted is not completed. Some users may be directed to HeK in some way during these lessons and is not returning to complete them. Overall, HeK views occur among lesson completions only about 10% less than lessons attempted that are never completed.

Table 19. wichhealth.org Health eKitchen Views by Resource, October 2017 – September 2018

Resource Name	Unique Users with Views
Banana Peanut Butter Smoothie	1,273
Homemade Mac and Cheese	1,007
Slow Cooker Southwest Chicken	966
Breakfast Casserole	947
One Pot Jambalaya	933
Simple Overnight Oats	674
Baked Sweet and Sour Chicken	667
Fruity Milk Smoothie	583
Slow Simmered Beef Stew	569
Energizing Spiced Smoothie	548
Fruit and Veggie Muffins	517
Banana Peanut Butter Frozen Yogurt	511
Avocado Milkshake	482
Hek Recipe Title ES	482
Tropical Smoothie	447
Peanut Butter Rollup	446
Easy Cheesy Waffles	437
Banana Ricotta Dip and Apple Wedges	428
Bananarama Smoothie	413
Chicken and Broccoli Skillet Meal	382
<i>All Other</i>	24,022
Grand Total	36,734

Table 19 presents the top 20 Hek resources by unique users with views during the annual evaluation period. Users completing Hek views was lower than expected given the results reported in the mid-year evaluation. Review of user exposure to Hek views over time indicates a sharp decrease in views of the last 4-6 weeks of the annual evaluation period (Figure 7). Further investigation of why Hek views decreased toward the end of the evaluation period and whether this is sustained is warranted.

Figure 7. wichhealth.org Health eKitchen User Hek Views over Time, October 2017 – September 2018



Recommendations

The following items require follow-up for potential improvement or investigation:

- 1) Completion rates have been decreasing but the impact on a unique user is minimal. The percent of unique users that attempt a lesson and never complete one is only 3%. Most users (73.5%) complete a different lesson indicating that the selection of the appropriate lesson topic is an important factor associated with lesson completion. Matching the most appropriate lesson topic to a given user is an area that needs additional consideration. A lesson topic recommendation engine could be a viable solution that could increase the likelihood that a user initiates the best lesson to match their needs and interests. Based on the data, this is especially important among users 50 years of age and older and Spanish version users. Lesson topic descriptions may need review and improvement.
- 2) User engagement continues to be strong with a median of 9.9% of users liking, favoriting, sharing or commenting on resource links they use. One of the goals of the next evaluation report will be to present work and findings associated with analysis of user comments using natural language processing techniques to extract themes that could provide additional insights about the impact the resource had on the user, as well as other open-ended responses such as why a user may be holding back from behavior change. As lessons migrate toward skills-based content, the analysis of the user's reported action plan at the conclusion of their lesson will also be valuable. Further investigation is needed to understand why resource comment activity is so much higher among Spanish language users and whether this is observed for all measures of engagement.
- 3) Missing data for age continues to be high at 22%. Allowing users to input date of birth as an open-ended item is a key reason for the higher level of missing data for user age. Restrictions to input format or use of calendar or drop downs for users to select date of birth would greatly reduce missing data for user age.
- 4) Mobile access among wichealth.org users is more frequent among those that report the least amount of information on their user profile. Additional thought and new innovative methods for collecting user data must be explored as mobile device usage continues to increase. Although completing one's wichealth.org profile would seem to suggest a user that is more engaged with the site, it does not predict better performance on wichealth.org KPIs. Again, this suggests a need to improve how user profile information is collected, especially among mobile users.
- 5) Although a small proportion of the total, lessons completed by users at work demonstrate the greatest user belief in the ability to change behavior as well as likelihood of progression among early beginning stage users. Work locations and libraries are the places that users are least likely to complete their lessons on a mobile device. Learning more about lessons completions in the workplace, such as whether the lessons are completed during lunch or breaks or whether levels of user engagement are higher is needed. Similar to how the current evaluation detailed the breakdown of lesson attempts compared to completions, the level of engagement stratified by key user characteristics such as lesson completion location will be presented in the next evaluation.
- 6) Key performance indicators for wichealth.org appear to be inversely related to how many lessons a user completed. Users that complete the fewest number of lessons are more likely to access resource links during their lesson, more likely to report belief in the ability to change behavior and more likely to progress in stage of change if they started their lesson in an early beginning stage. As indicated above, the next evaluation will look more closely at measures of engagement by various user groups to better understand if engagement decreases as the number of lessons a user is exposed to increases.
- 7) Among the users that completed multiple lessons, 67.3% did so on the same day. Getting users to return to wichealth.org for follow-up will become more important as wichealth.org migrates content to skills-based lessons best evaluated using longer term follow-up opportunities. Relaunch of the Impact manager may help to increase the user return rate.
- 8) Profile completion is not associated with better wichealth.org outcomes. More innovative ways of collecting user profile information needs to be explored.
- 9) Users completing HeK views was lower than expected given the results reported in the mid-year evaluation. There was a sharp decrease in views during the last 4-6 weeks of the annual evaluation period. Further investigation of why HeK views decreased toward the end of the evaluation period and whether this has been sustained is warranted.