Getting the Full Picture of Wellness:

Health Risk Assessment Data Provides Insights into Social Determinants of Health

2ND ANNUAL DATA REVIEW

Wellsource®

Executive Summary:

What can we learn about social determinants of health from health risk assessment data?

In this report, we will be looking at how health and lifestyle data provide valuable insights into the social determinants of health (SDoH) to address the question:

How can we build data-driven programs that target the right populations with the right intervention — at the right time?

The Second Annual Wellsource Annual Data Review will address how health risk assessment (HRA) data can provide insights into SDoH across a population. We have examined self-reported HRA data from more than 24,000 individuals who completed the **Wellcomplete Health Risk Assessment for Medicaid** to see what influences common SDoH measurements might have on population health for Medicaid recipients.

Who is this report for?

While this report focuses on analyzing SDoH insights from self-reported lifestyle data gathered from Medicaid recipients, there are lessons within these pages for all population health professionals. Recognizing the context of a person's well-being and creating programs that will address their holistic health concerns within that context is the aim of any successful wellness program.

Key Findings from the Wellsource Dataset*

17% reported the price of food matters most to them.

41% did not report eating daily breakfast.

Northeastern states were among the healthiest, while individuals living in southern states experienced higher rates of obesity, diabetes, and hypertension.

Despite having Medicaid coverage, over half of respondents were not up to date on their vaccinations.

One in four participants had not seen a dentist in the past year.

Individuals who report feeling lonely had statistically significant higher rates of obesity, diabetes, and lung problems.

Lonely individuals are 17 times more likely to report feeling down, depressed, and hopeless.

Presenteeism — working while sick — is prevalent. Almost 29% of respondents reported having one or more unproductive days due to poor health in the last year.

**We refer to this sample as the Wellsource dataset or simply dataset throughout this review for the purposes of clarity and consistency.*

Social Determinants of Health

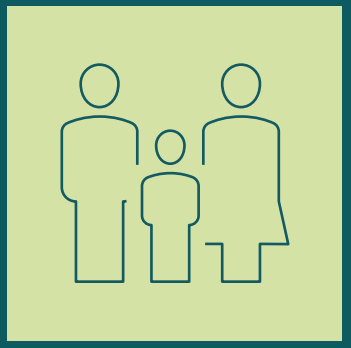
For the purposes of this report, we will focus our analysis on the following categories

EAT

How access to healthy foods is associated with positive health.

LIVE

The distinct health characteristics of geographic regions.



GROW

How often individuals opt into using preventive services when available.

PLAY

How loneliness influences physical and mental health outcomes.

WORK

The prevalence of absenteeism and presenteeism in the workplace.

About the Data: The Wellsource Medicaid Population

The dataset includes 24,167 adults who completed the **Wellcomplete Health Risk Assessment for Medicaid** between September 1, 2018 and August 31, 2019 (Appendix: Table A). The mean age was 45.5 years (18–86 years) and over half of participants (55%) were female. The majority were White (88%) and had at least a high school (or equivalent) education (98%).

But first, what are SDoH and how do you measure them?

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Social Determinants of Health: Getting the Full Picture

Your ZIP code is a better predictor of your health than your genetic code.

Studies report that an individual's health and well-being are largely influenced by SDoH,[1,2] defined by the World Health Organization as "the conditions in which people are born, grow, live, work, and age."[3]

What are SDoH?

SDoH include things such as where a person lives, their income, social support, and access to nutritious food and healthcare services.

These insights are used to explain health disparities, or preventable differences in health outcomes experienced by socially disadvantaged groups, recognizing that a person's social and economic conditions have an impact on their health. Gathering SDoH data is different from diagnostic testing to identify chronic disease. There isn't a blood test or body scan. Instead, healthcare and population health professionals rely on information such as dietary habits, social support, employment, education, and housing to help them evaluate well-being and predict health outcomes.

One of the first hurdles to building SDoH-targeted wellness programs is getting the data needed to inform your program strategy and create effective plans for your population's unique health needs.

This is why data is a critical component of any population health engagement strategy. Every piece of information you can gather on your population helps bring the full picture into greater focus.

4 out of 5

respondents to the 2017 Price Waterhouse and Coopers' Health Research Institute Clinician Survey say ***they lack the data needed to identify risk factors associated with SDoH.[4]***

Data informs program strategy. It is a tool for buy-in and ongoing measurement. Without data, you cannot set targeted goals or show improvement in health outcomes.

Where can you gather SDoH information?

Population health management professionals traditionally rely on data from many data sources:

- Claims data provides historical context for health.
- Electronic health record data is a current snapshot of a person's physical wellbeing (e.g., ICD Z-codes).
- Census data can be used to extrapolate regional information such as average income or environmental impacts.
- Health Risk Assessment (HRA) data provides insights into an individual's outlook on health, their readiness to change, and the resources they have available to pursue healthier lifestyles.

This report focuses on analyzing those valuable insights gathered from self-reported lifestyle data from the **Wellcomplete Health Risk Assessment for Medicaid**.

Why should you care?

The real business costs and benefits

Ignoring health disparities can cost you.

The estimated direct medical cost of health disparities per year exceeds $102 billion.[4]

You're required to by regulation.

As of 2017, nineteen states required managed care organizations to screen Medicaid enrollees for social needs and provide referrals to services such as case management and community resources.[5]

It helps you achieve health plan accreditation.

Assessing SDoH is required by accrediting bodies such as the National Committee of Quality Assurance (NCQA) and Utilization Review Accreditation Commission (URAC).

EAT

How access to healthy foods is associated with positive health.

Good nutrition is a cornerstone of good health.

That's why having reliable access to affordable, nutritious food is an important aspect of health, and one that can be heavily reliant on an individual's environment. Food insecurity means an individual doesn't have reliable access to adequate amounts of affordable, nutritious food. It is typically measured as availability, access, utilization, and stability. At an individual level, this may mean there is only a corner mini-mart in a neighborhood. Or it could mean that a Medicaid beneficiary is not connected with food assistance and, therefore, cannot afford nutritious food.

Wellsource Dataset

Where a person purchases their food is a measure of food security. In the Wellsource dataset, over 92% of individuals reported the grocery store as their primary source of food all of the time or most of the time. Individuals who reported their food entirely came from vending machines, convenience stores (e.g., corner store or gas station), or fast food restaurants more frequently reported not meeting the recommended daily intakes of fruits, vegetables, and whole grains than those who get their food elsewhere.

How do Medicaid beneficiaries determine what food they will purchase? In the dataset, 17% of individuals reported the price of food is what mattered most to them — indicating the ability to afford food is a top contributing factor to food insecurity (Appendix: Table B). The distance one had to travel to access food mattered less by comparison — less than 1% reported proximity to matter most when it came to food consumption.

17% of individuals reported cost of food to be high on the list of what matters most to them.

Another measure of food security is the number of meals skipped each day. In the dataset, 41% did not report eating breakfast daily; the reason, however, was not collected (Appendix: Table B).

What to do with this data

As population health professionals, you can work with local public health offices and community organizations to create programs that provide ready access to fresh, nutritious food and educational resources. HRA data can help you identify key indicators of food security.

For example, if your population indicates in their HRA that they often skip breakfast or eat an unhealthy breakfast, consider working with local charitable groups to prepare and deliver breakfast.

Offering healthy snacks is a great way to increase healthy eating within a workforce, but that might not be enough for employees on Medicaid. Invite local truck famers to sell fresh produce to employees on-site and supplement the cost.

SPOTLIGHT: PROGRAMS WE ADMIRE

The Visiting Nurse Association of Texas (VNA) Meals on Wheels program serves meals to over 4,000 elderly residents a day, Monday through Friday. Using predictive analytics against a simulated virtual population, it's estimated the VNA saves $10.4 million annually in healthcare costs, due to proper nutrition, but also because of the benefit of ongoing social interaction with the delivery workers.[6]

"The benefit of the meal to a person, how it reduces isolation and all these levels of chronic conditions…is eye-opening."

– Chris Culak, VNA's Vice President of Development

LIVE

The distinct health characteristics of geographic regions.

Location, location, location.

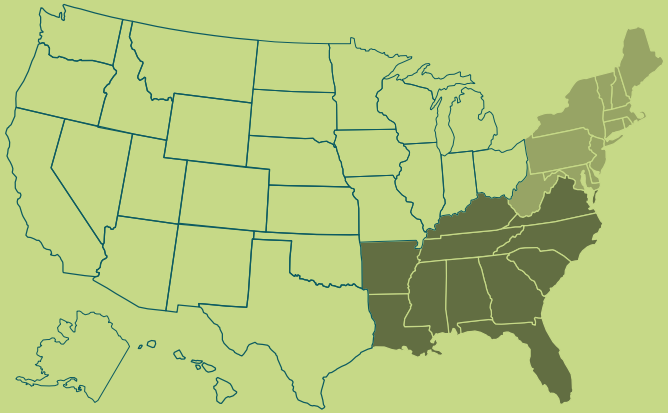
Where someone lives has a huge impact on health. An individual's geographic location can influence a person's access to food, safe housing, transportation, and health care.

For example, living in areas with high pollution increases the risk for chronic obstructive pulmonary disease[7] and cardiovascular disease.[8] Location can also influence the likelihood for an unhealthy diet, as food quality has been demonstrated to be typically poorer in low income neighborhoods.[9] Regional characteristics should also be considered. For example, surveys have shown that southern U.S. states tend to have higher rates of obesity, smoking, and cancer than others.[10]

Wellsource Dataset

Using zip code, we identified two regions with adequate sample size of participants for comparison and analysis: southern and northeastern regions.

REGIONAL COMPARISON



SEE TABLE C: SOUTHEAST VS. NORTHEAST REGIONS

Our dataset indicates that the northeastern states are among the healthiest, while individuals living in southern states experienced 5% higher rate of obesity, 3% higher rate of diabetes, and 6% higher rate of hypertension (Appendix: Table C).

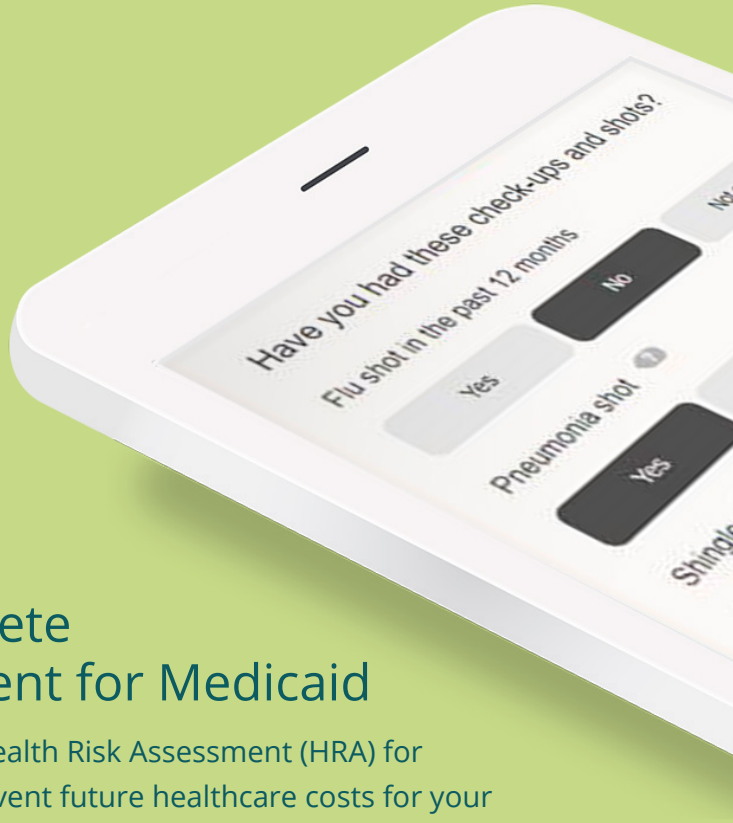
They also more frequently reported unhealthy behaviors such as tobacco use, poor eating habits, and sedentary behaviors.

What to do with this data

If you're a wellness professional covering national populations, you can use HRA data to better target regional efforts.

For example, this type of data can help pinpoint cities and zip codes that require the most intervention and identify the appropriate community partners within those geographic areas.

This can help to identify disparities in your population which might be overlooked.

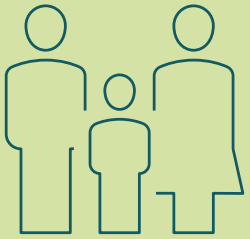


About the Wellcomplete Health Risk Assessment for Medicaid

Our NCQA-certified Wellcomplete Health Risk Assessment (HRA) for Medicaid helps you predict and prevent future healthcare costs for your Medicaid members. It's a powerful tool for understanding their health status, risks for chronic disease, socioeconomic influencers affecting their well-being, and motivation to make changes for better health.

- Responsive design maximizes user engagement on mobile devices and desktops.
- Evidence-based question set collects the right information on socioeconomic and lifestyle factors.
- Adaptive design for a personalized experience, including three-dimensional branching logic that adjusts content with each successive response.

Click here to learn more >



GROW

How often individuals opt into using preventive services when available.

Health is in part determined by access to social and economic opportunities — and one indicator of health is access to preventive care and medical coverage.

One of the best ways to ensure optimal health is for individuals to take preventive measures and partake in healthcare benefits. Although many people living in America have access to healthcare services, others encounter roadblocks — even if they have Medicaid coverage.

Wellsource Dataset

The population who completed the HRA are Medicaid beneficiaries, but there are still gaps in healthcare access, specifically preventive services received. In the Wellsource dataset, every participant had access to health services through Medicaid programs, and yet:

- 12% had not had a physical exam in the past 1–2 years (Appendix: Table D)
- 1 in 4 participants had not seen the dentist in the past year (though dental coverage varies by state Medicaid program)
- Over half were not up to date on their vaccinations

Of the survey participants, only 50% received the flu shot, 28% received the shingles shot, and 51% received the pneumonia shot. Rates of cancer screening

Preventive Service	Wellsource Dataset	National Medical Data[11]	Employer-Sponsored[11]	Uninsured[11]
Routine checkup	**88%**	70%	64%	34%
Flu vaccine	**50%**	25%	35%	10%
Mammogram	**84%**	36%	50%	25%

In comparison to national data, rates for routine visits, flu vaccinations, and mammograms (women only) were higher in the Wellsource dataset.[11]

were higher for breast and cervical cancers, and lower for prostate and colorectal (Appendix: Table D).

What to do with this data

Using your HRA data, you can conduct research to determine why individuals in your population — covered by Medicaid or not — do not take advantage of vaccinations and other preventive services available to them. Then use those insights to craft a campaign and address the findings. Some ideas:

- Enlist support of community leaders to model getting routine screenings (e.g., colonoscopies).
- Provide resources to make preventive care more accessible — through telemedicine, at-home visits, or providing transportation options.
- Lobby state legislatures to cover dental services.

SPOTLIGHT: PROGRAMS WE ADMIRE

The Humana at Home program helps members remain independent at home and leverages community health workers to track SDoH. Home care workers coordinate medication, clinical care, and other routine tasks, and also screen Humana members for SDoH needs, allowing for a more holistic view of the patient.[12]

"There are community resources that you have easy access to, or you can figure out the resources within your own specific geographic area . . . You just have to figure out where those are. A lot of those are no-cost. It doesn't necessarily require a lot of money."

– Andrew Renda, MD, Associate Vice President of Humana's Population Health Strategy

PLAY

How loneliness influences physical and mental health outcomes.

Social connection is essential for health — both mental and physical.

Without quality social relationships, a person has an increased risk for early death.[13] Poor social relationships, as measured by social isolation or loneliness, increases the risk of coronary heart disease by 29% and the risk of stroke by 32%.[14]

Social isolation includes living alone or not participating regularly in social groups. Loneliness, on the other hand, is feeling dissatisfied with the quantity or quality of social relationships.Loneliness and social isolation often occur together, and both are opposites of social connection. A little over one third of U.S. adults aged 45 and older feel lonely.[15]

Lonely individuals were *nearly 18 times more likely* to report feeling down, depressed, or hopeless than non-lonely individuals.

Wellsource Dataset

Our dataset indicates 7% of individuals reported feeling lonely (Appendix: Table F). Compared to non-lonely individuals, this group of people reported:

- 12% higher rate of obesity
- 2% higher rate of diabetes
- 3% higher rate of lung problems
- 10% higher rate of binge drinking
- 3% higher rate of tobacco use

These individuals also reported statistically significant higher rates of poor eating habits (i.e., not meeting recommended daily intakes of specific food groups) (Appendix: Table F). Lonely individuals also reported they sit an hour more, get 30 minutes less physical activity, and sleep fewer hours per day than non-lonely individuals. Of those who reported feeling lonely, 51% were obese, 10% had diabetes, and 32% binge drink.

The most alarming finding was that lonely individuals were nearly 18 times more

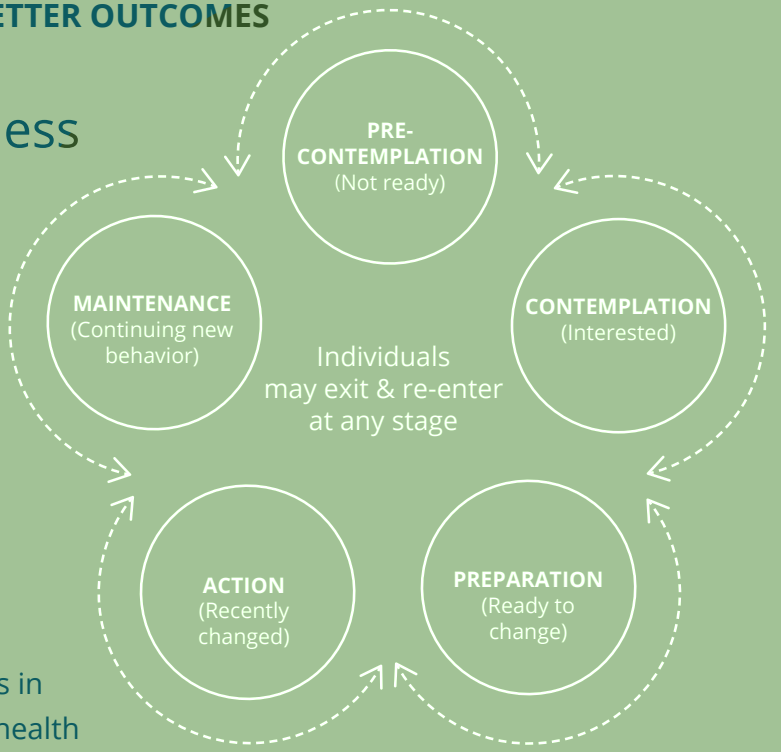
likely to report feeling down, depressed, or hopelessness than non-lonely individuals (odds ratio, 18; 55% vs. 6%).

What to do with this data

When HRA data identifies individuals who self-report feeling lonely, follow-up services should be offered. Some ideas:

- Consider launching a social networking program moderated by both public health and mental health specialists to promote social connection, augmenting online social connection with in-person contact where possible.
- Encourage individuals to engage in an activity group of people who share their interests.
- Connect people with volunteer opportunities in their local community.

Measuring readiness to change

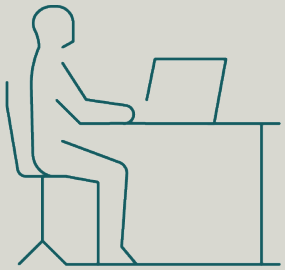


Readiness to change data empowers wellness professionals to make educated decisions about where their resources will be best spent.

Wellsource HRAs use behavior change models to identify which stage of the change journey an individual is in for habits linked to increased health risk, allowing you to focus intervention efforts on areas where you are most likely to have success.

- Population health professionals are able to pinpoint and prioritize the best interventions for each person.
- HRA participants benefit from a personalized approach based on their specific health needs, which increases engagement and leads to improved health outcomes.

Click here to learn more about readiness to change >



WORK

The prevalence of absenteeism and presenteeism in the workplace.

Income is a factor for longevity, morbidity, obesity, addiction, chronic disease, poor mental health . . . the list goes on.

Low socioeconomic status is also associated with increased sick days, both in duration and frequency.[16] It's a common perception that people who receive Medicaid don't work — when in fact the opposite is true. More than 60% of Medicaid beneficiaries work, many at full time jobs.[17]

One third of Medicaid-insured workers are in physically demanding jobs working in food services, as personal care aids, and janitors.[17] Over half are worried that they won't be able to pay rent or afford food. When they get sick, missing work can have a significant effect on their income and on their employers through absenteeism. Many low-income individuals typically have minimum wage, service, and/or part-time jobs that do not offer paid sick leave.

There are real dollar costs associated with absenteeism. In the United States, it's estimated that each health problem and unhealthy behavior — such as smoking and physical inactivity — is associated with over $2 billion in absenteeism costs each year.[18] For the individual, a single sick day could mean not having enough money to pay for rent, utilities, and food.

29% of participants

reported having one or more unproductive days due to poor health in the last year.

Wellsource Dataset

On average, the participants who completed the Medicaid HRA reported four sick days in the last year (Appendix: Table D). This is the same as workers in the financial, information, trade, transportation, and professional and business services industries and higher (by 2 days) than workers in hospitality and construction industries.[19]

Presenteeism — that is, working while sick — may also affect a person's income in the event it is viewed negatively by an employer and results in job loss or reduction of hours. 29% of participants reported having one or more unproductive days due to poor health last year (Appendix: Table D).

What to do with this data

If your population is at risk of presenteeism, you should consider offering sick leave to all employees working at least 16 hours a week. While paid sick leave increases absenteeism by 1.2 days[20] it protects the health of other workers, ultimately reducing contagious presenteeism and co-worker absenteeism.[21] Here are a couple additional ideas to support your population:

- Offer on-site vaccinations or open an on-campus pharmacy that offers discounted prescriptions.
- Establish a partnership between health plans and employers to work together to compensate workers who take time off for preventive exams.

CREATING A CULTURE OF HEALTH

Employee wellness strategies for an engaged, productive workforce

A culture of health is more than a focus on reducing health claims and injury. It plays an essential role in an orgnization's growth — and in its ability to attract and retain talented employees.

Those who make the effort and invest time and resources to launch employee wellness programs will realize long-term return on investment. Critical considerations include:

- Getting senior management onboard
- Assessing the health of your population and establish baselines
- Supporting a healthy work-life balance
- Diversifying communications
- Tracking data and measure results

Creating a culture of health doesn't happen overnight, however.

Click here to learn more >

A Data-driven Framework to Address Social Determinants of Health

EVALUATE YOUR READINESS.

Success of any program designed to address SDoH will have three parts: The right people, processes, and technologies already in place. Is your organization prepared to support these additional programs? Do you have buy in from all stakeholders? Do you have the technology to collect the needed SDoH data and integrate it into your existing systems?

COLLECT THE DATA.

Develop your data strategy, accounting for infrastructure needs and how the data will be collected, stored, and analyzed. This is where a solution like a fully integrated HRA is critical, as it's another source of valuable lifestyle data that should be considered alongside other sources such as electronic medical record and claims data.

IDENTIFY THE POPULATION.

The data will help you understand your population health characteristics and target segmented populations with a personalized approach. Here, an HRA will also give you additional metrics to consider, such as readiness to change.

BUILD PARTNERSHIPS WITHIN YOUR COMMUNITY.

Once you've identified your data-driven plan of action, evaluate community partners who may have similar goals, based on what will yield the best outcome for the population.

WAIT TO MEASURE RESULTS.

It's estimated you need at least 1–2 years to implement policy and environmental changes.[22] "Some time is required for the changes to take hold and begin to influence behavior — there were few changes observed in initiatives with less than 5 years' duration."[22]

...then start again! When evaluating outcomes, it's important to long term viability that population health professionals continue to measure, plan, and improve on these programs.

It's clear from the Wellsource dataset used for this annual review that the conditions in which people eat, live, grow, play, and work impact health —directly and indirectly.

Populations with higher well-being — which includes neighborhood safety, food access, happiness, a fulfilling job, social connection, lack of stress, and the absence of disease — live longer.[23] The inescapable reality is that socioeconomic and environmental factors hold a prominent place in population health.[24]

Intervention strategies should consider the needs of the community and the data you have at hand. Planning programs that will positively impact the greatest number of people requires a thorough picture of the healthcare concerns of your population, and gathering the right data is a critical component of any population health strategy.

Armed with data and organizational buy in, we can begin to tackle SDoH from a data-driven, evidence-based approach.

Wellsource®

For more information about Wellsource products, request a consultation.

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FIRST ANNUAL DATA REVIEW

Happiness, Habits & Health

Measuring Mental Health With Health Risk Assessment Data

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The Ultimate Guide to HRAs

Everything you want to know about health risk assessments

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About Wellsource

For four decades, Wellsource has been personalizing population health by designing innovative Health Risk Assessments that are grounded in modern evidence-based medicine.

Wellsource uses the power of technology to drive informed decisions with actionable data for health plans, wellness organizations, and companies committed to improving wellness.

Our Wellcomplete Health Risk Assessments for the Workforce, for Medicare, and for Medicaid are NCQA certified and used for predicting health risks and reducing avoidable costs.

Learn more at wellsource.com

Appendix

Methods

Research presented in this manuscript was conducted using de-identified data collected via the **Wellcomplete Health Risk Assessment for Medicaid by Wellsource®** and was conducted in accordance with Human Research Subjects regulations and Privacy laws. Individuals who were receiving Medicaid and whose HRA was completed between September 1, 2018 through August 31, 2019 were included. Statistical analyses were performed in IBM® SPSS® Statistics. Chi-square statistics, independent sample t-tests, and regression (binary or logistic) were used where appropriate. Statistical significance was defined as a p-value less than 0.05.

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Author Affiliations

Brittany U. Carter, DHSc, MPH; Paula J. Wart, MPH(c), and Erin Pratuch are employed by Wellsource.

Table A. Baseline Demographics

Characteristic	Statistic	Number*
Mean age (range)	45.5 (18–86)	24,167
Sex	Male: 10,933 (45.2%) Female: 13,234 (54.8%)	24,167
Race/Ethnicity[†]	White: 9,087 (88.3%) Black: 465 (4.5%) Hispanic: 382 (3.7%) Asian or Pacific Islander: 251 (2.4%) American Indian or Alaskan Native: 16 (0.2%) Other: 93 (0.9%)	10,294
Geographic location (U.S. Region)	West: 239 (1.5%) Southwest: 57 (0.3%) Central: 243 (1.5%) Midwest: 891 (5.4%) Southeast: 3,840 (23.3%) Northeast: 11,177 (68.0%)	16,447
Education level	Grade 1–8: 4 (0.2%) Grade 9–11: 7 (1.4%) High school diploma or GED: 770 (29.1%) Some college: 762 (28.8%) Bachelor's degree: 681 (25.7%) Graduate degree: 391 (14.8%)	2,645
Healthcare coverage	Medicaid only: 23,175 (95.9%) Dual beneficiary (i.e., Medicaid and Medicare): 992 (4.1%)	

** Total number of individuals with valid data for this characteristic (the denominator)*
[†] 13,873 did not report their race/ethnicity, including those who don't want to say (n=125)

Table B. Food Security

Characteristic	Statistic
Eats breakfast daily	14,197 (58.7%)
Food sources*	Grocery store: 22,383 (92.6%) Garden: 1,151 (4.8%) Delivered meals: 622 (2.6%) Sit-down restaurant: 459 (1.9%) Fast food restaurant: 443 (1.8%) Convenience store: 134 (0.6%) Vending machine: 56 (0.2%)
What matters most when buying food	Price: 4,112 (17.0%) Taste: 5,537 (22.9%) Freshness: 6,276 (26.0%) Healthiness: 5,895 (24.4%) Ease of cooking: 1,952 (8.1%) Distance to store: 151 (0.6%) Food allergies: 244 (1.0%)

** Always or most of the time*

Table C. Southeast vs. Northeast regions

Characteristic	Southeast‡	Northeast§	Between Group Difference p-value
Demographic			
Age, mean	46.8	46.1	0.001
Male	55.2%	42.4%	<0.001
Non-white	20.6%	7.9%	<0.001
Personal Health History			
Cancer	4.5%	4.8%	0.400
Diabetes	10.5%	7.4%	<0.001
Heart problems	4.0%	3.6%	0.293
High blood pressure	32.5%	26.4%	<0.001
Lung disease	2.8%	4.3%	<0.001
Obesity	44.0%	39.4%	<0.001
Stroke	0.7%	0.8%	0.434
Nutrition*			
Fruits	53.1%	61.4%	<0.001
Vegetables	38.7%	42.5%	<0.001
Whole grains	22.7%	31.2%	<0.001
Sugar-sweetened beverages and sweets	23.5%	30.0%	<0.001
Lifestyle Behaviors			
Tobacco use, current	88.7%	91.6%	<0.001
Alcohol use	51.4%	68.1%	<0.001
Binge drinking†	20.7%	20.9%	0.831
Activity			
Sitting hours per day, mean	7.8	8.5	<0.001
Sleep hours per day, mean	6.9	6.9	0.167
Physical activity hours per day, mean	2.5	2.2	<0.001

**Meeting recommended daily intake:*

fruits (at least 2 servings per day);
vegetables (at least 3 servings per day);
whole grains (at least 3 servings per day);
sugar-sweetened beverages (no servings per day)

†Among alcohol users

‡Southeastern states include Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Kentucky, Louisiana, and Arkansas

§Northeastern states include New York, Massachusetts, Rhode Island, New Hampshire, Maine, Vermont, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, and West Virginia

Table D. Access to Preventive Health Services

Characteristic	Statistic
Vaccinations	Influenza: 12,182 (50.4%) Shingles: 927 (27.5%)* Pneumonia: 386 (51.4%)*
Health exams	Physical exam: 21,347 (88.3%) Dental exam: 18,314 (75.8%)
Cancer screenings	Breast cancer: 7,124 (84.0%)* Cervical cancer: 10,617 (82.0%)* Prostate cancer: 3,148 (68.3%)* Colorectal cancer: 7,332 (72.5%)*
Sick days, mean (SD)	4 (13.8)
1 or more unproductive days due to poor health	6,701 (28.7%)

Table, Above:

**Among those for which these preventive services are recommended.*

Table, Right:

**Meeting recommended daily intake: fruits (at least 2 servings per day); vegetables (at least 3 servings per day); whole grains (at least 3 servings per day); sugar-sweetened beverages (no servings per day)*

†Among alcohol users

Table E. Lonely Versus Non-lonely Individuals

Characteristic	Lonely (n=1,701)	Non-lonely (n=22,466)	Between Group Difference p-value
Demographic			
Age, mean	42.5	45.7	<0.001
Male	38.4%	45.8%	<0.001
Personal Health History			
Cancer	4.4%	4.7%	0.536
Diabetes	9.7%	7.9%	0.008
Heart problems	4.4%	3.7%	0.166
High blood pressure	28.3%	26.8%	0.174
Lung disease	7.2%	3.9%	<0.001
Obesity	51.4%	39.8%	<0.001
Stroke	1.0%	0.8%	0.312
Sick days in past year, mean	7.3	3.7	<0.001
Nutrition*			
Fruits	46.2%	59.0%	<0.001
Vegetables	32.2%	40.9%	<0.001
Whole grains	24.7%	29.2%	<0.001
Sugar-sweetened beverages and sweets	21.5%	28.6%	<0.001
Lifestyle Behaviors			
Tobacco use, current	13.9%	10.5%	<0.001
Alcohol use	67.3%	64.3%	0.012
Binge drinking†	31.6%	21.2%	<0.001
Activity			
Sitting hours per day, mean	9.3	8.4	<0.001
Sleep hours per day, mean	6.5	6.9	<0.001
Physical activity hours per day, mean	1.9	2.3	<0.001

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