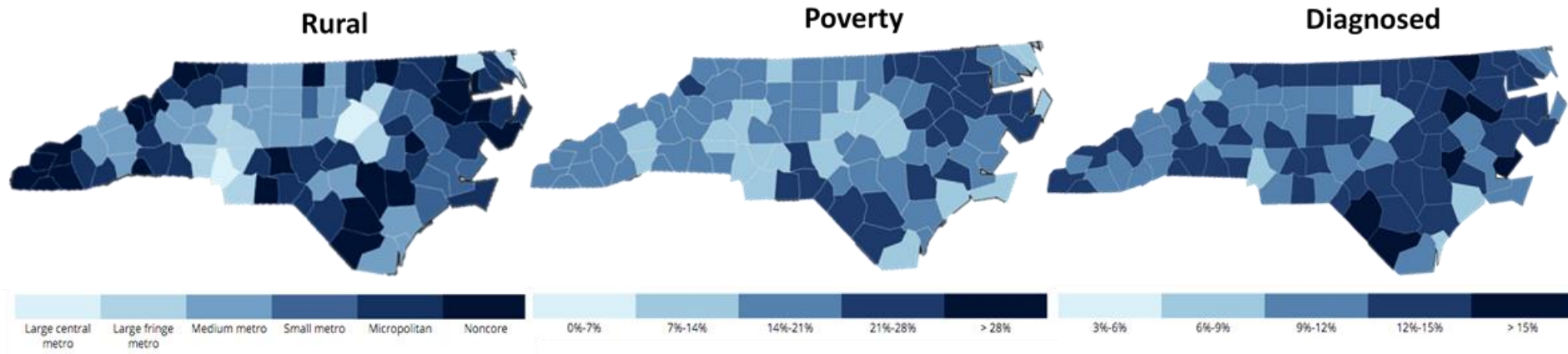


Influencing Healthy Behaviors in Low-Income Communities

Aditi Borde and Jacqueline Gerhart, University of North Carolina at Chapel Hill.

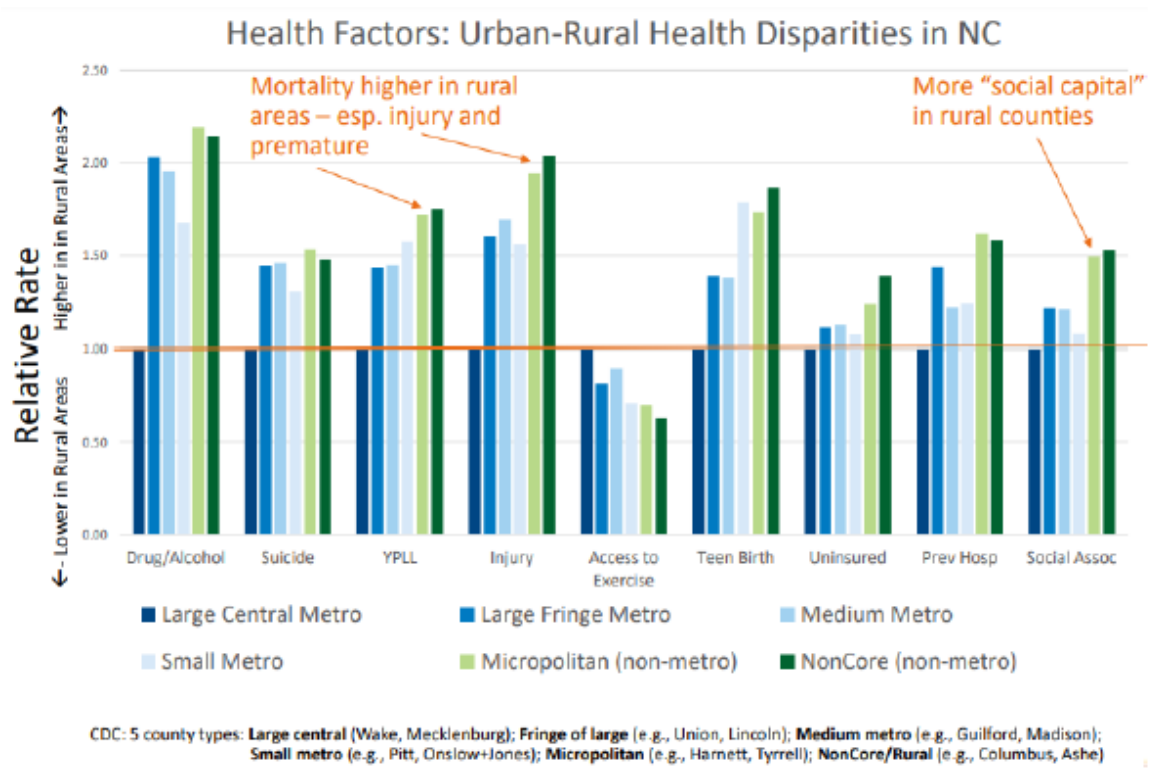
SUPPLEMENTARY EXHIBITS

Exhibit 1: County-Level Distribution of Rural Areas, Poverty, and Diagnosed Diabetes in North Carolina



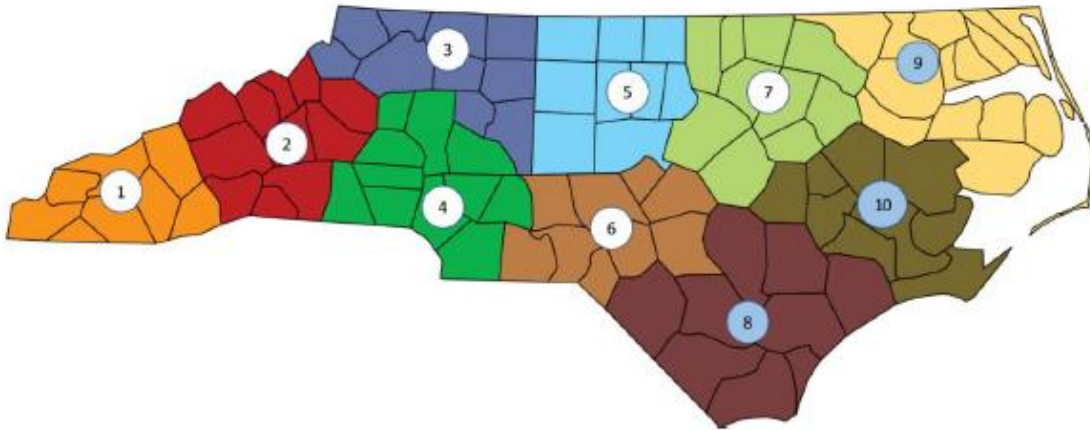
Sources: https://www.cdc.gov/nchs/data_access/urban_rural.htm; <https://www.census.gov/programs-surveys/saipe.html>; <https://www.cdc.gov/diabetes/data/countydata/countydataindicators.html>

Exhibit 2: Urban-Rural Health Disparities in North Carolina



Source: <https://www.ncleg.gov/documentsites/committees/bcci-6715/January%208,%202018/3.%20Holmes,%20Rural%20Healthcare%20by%20the%20Numbers.pdf>

Exhibit 3: Map of Regions Defined by the North Carolina Association of Local Health Directors*



**Blue circles indicate the target population are for the CARD program.*

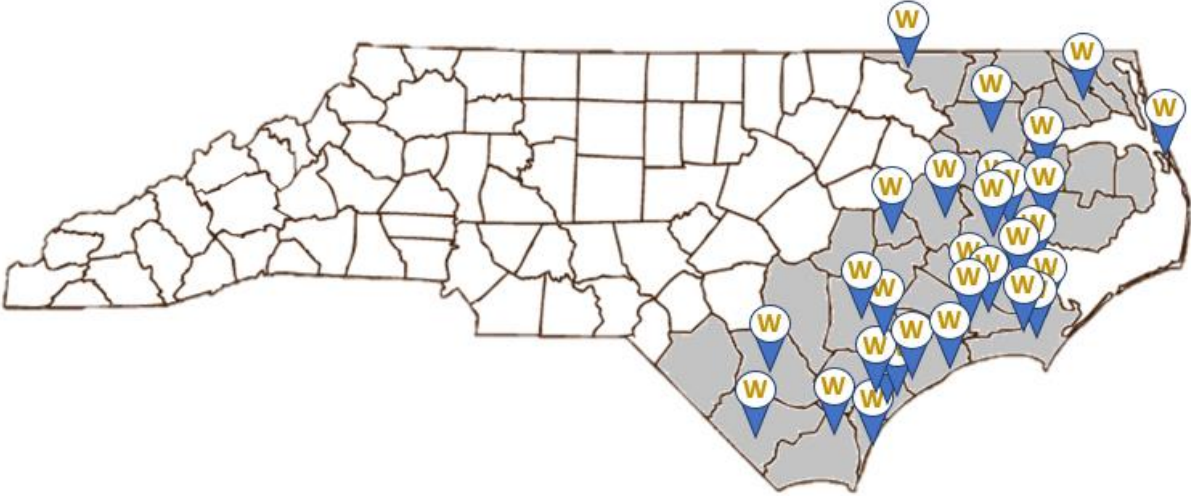
Source: <http://www.ncalhd.org/map/>

Exhibit 4: CDC County-Level Prevalence of Diagnose Diabetes and Obesity in Eastern North Carolina

County	2013 Diagnosed Diabetes Prevalence		2013 Diagnosed Obesity Prevalence	
	Number	%	Number	%
Beaufort County	4,891	13.4	12,045	33.0
Bertie County	2,285	14.2	5,704	35.5
Bladen County	3,839	14.5	10,088	38.2
Brunswick County	10,195	11.0	26,084	28.0
Camden County	833	11.1	2,324	31.0
Carteret County	5,584	10.3	14,045	25.8
Chowan County	1,497	13.3	3,844	34.2
Columbus County	6,897	16.0	13,451	31.2
Craven County	8,070	10.3	23,556	30.1
Currituck County	1,954	10.6	5,326	28.9
Dare County	2,679	9.8	7,508	27.4
Duplin County	5,970	13.8	13,829	32.0
Gates County	1,136	12.9	2,990	33.9
Greene County	2,045	12.7	5,788	35.9
Hertford County	2,673	14.4	6,856	36.9
Hyde County	553	12.0	1,364	29.7
Jones County	1,195	14.9	2,716	33.9
Lenoir County	6,839	15.6	16,295	37.2
Martin County	2,900	15.9	6,939	38.0
New Hanover County	13,768	8.4	40,995	24.9
Northampton County	2,651	16.2	6,277	38.5
Onslow County	10,262	7.8	38,992	29.7
Pamlico County	1,588	15.1	3,317	31.5
Pasquotank County	4,287	14.4	10,509	35.4
Pender County	5,007	12.1	12,929	31.1
Perquimans County	1,428	13.5	3,447	32.6
Pitt County	12,169	9.5	43,742	34.3
Robeson County	14,975	15.7	37,697	39.6
Sampson County	6,408	13.7	17,119	36.7
Tyrrell County	446	13.6	1,012	30.8
Washington County	1,426	14.7	3,177	32.8
Wayne County	11,926	13.1	31,411	34.4

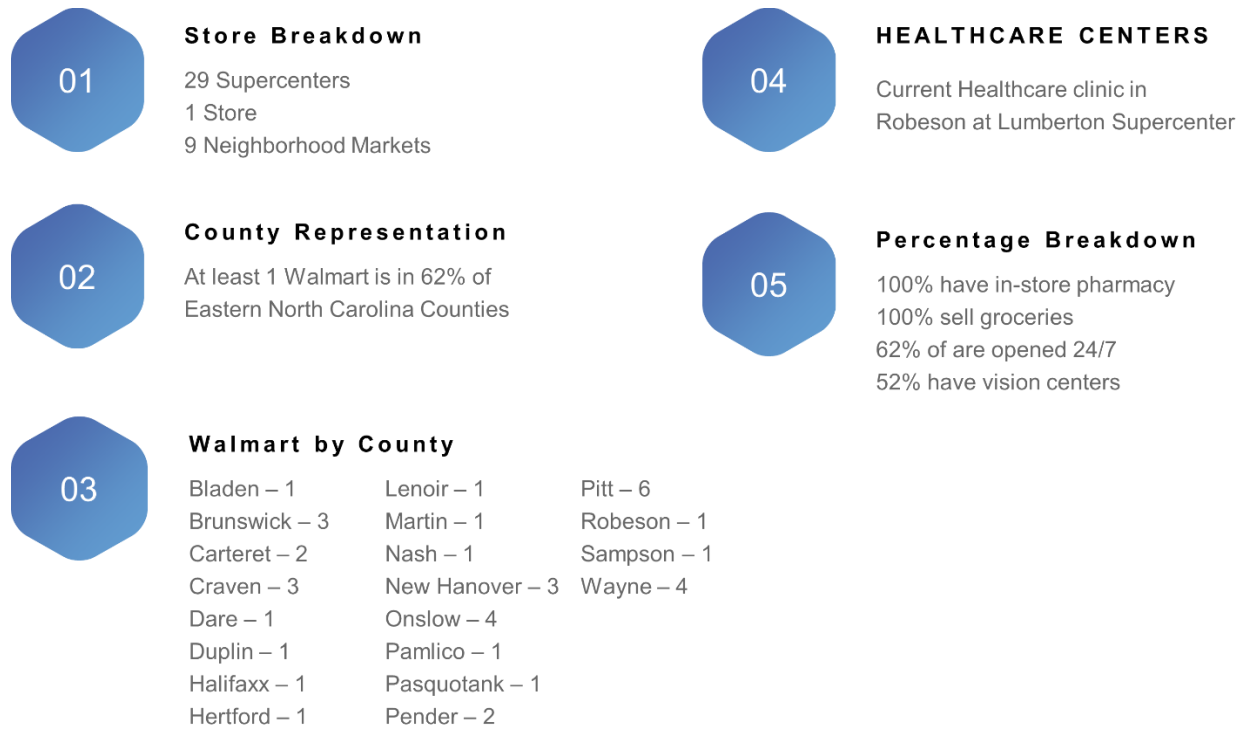
Source: <https://www.cdc.gov/diabetes/data/countydata/countydataindicators.html>

Exhibit 5: Walmart Supercenter Locations in Eastern North Carolina



Source: <https://www.walmart.com/store/finder>

Exhibit 6: County-Level Breakdown of Walmart Supercenter Locations and Services in Eastern North Carolina



Source: <https://www.walmart.com/store/finder>

Exhibit 7: Front of CARD Program Activities Stamp Card

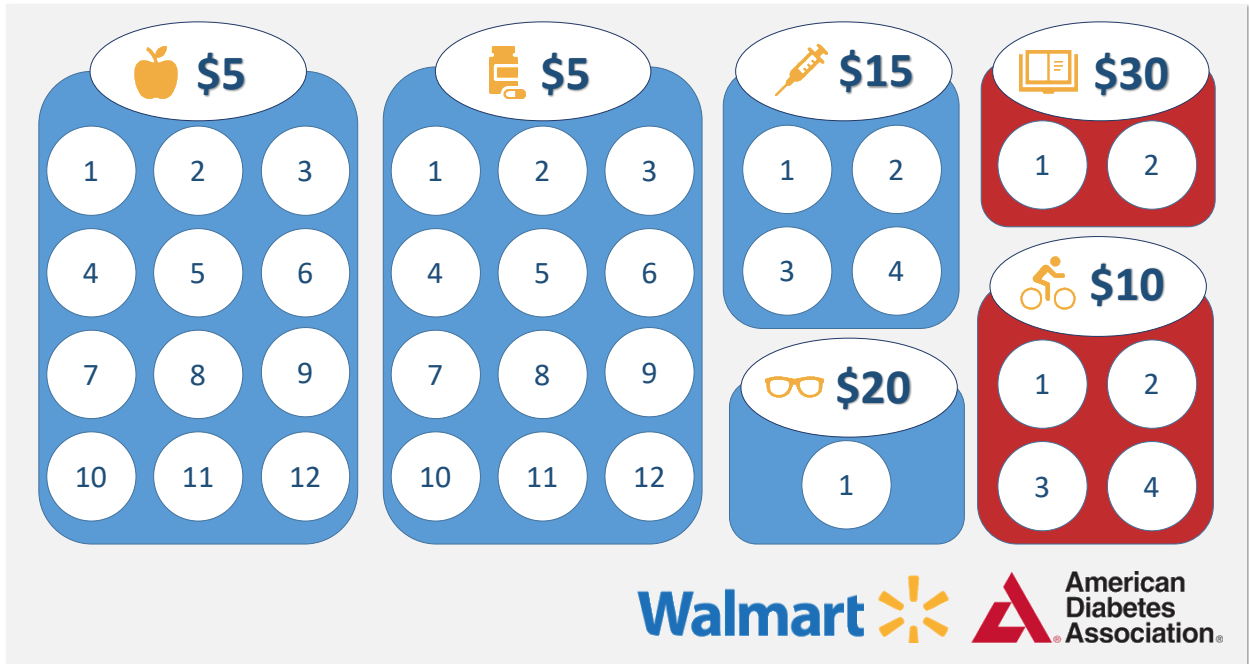
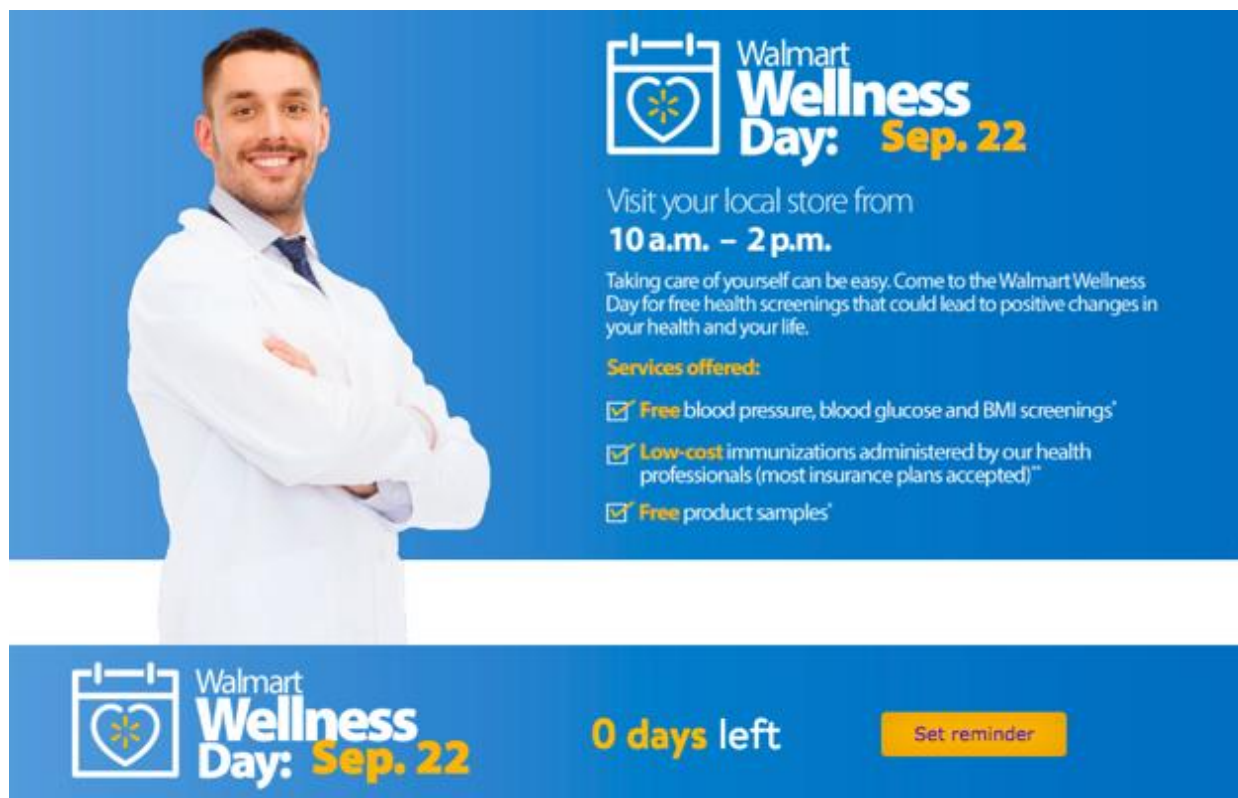


Exhibit 8: CARD Program Flyer for Placement at Walmart Cash Registers



Exhibit 9: Example of Walmart Wellness Day Event, Cohosted by the American Diabetes Association



The image shows a promotional banner for Walmart Wellness Day. On the left, a male doctor in a white lab coat stands with his arms crossed against a blue background. To his right, the event title "Walmart Wellness Day: Sep. 22" is displayed with a calendar icon. Below the title, it says "Visit your local store from 10 a.m. - 2 p.m." and provides a brief description of the event. A list of services offered includes free blood pressure, blood glucose, and BMI screenings; low-cost immunizations; and free product samples. At the bottom of the banner, there is a smaller version of the event title, a countdown timer showing "0 days left", and a "Set reminder" button.

Walmart Wellness Day: Sep. 22

Visit your local store from
10 a.m. - 2 p.m.

Taking care of yourself can be easy. Come to the Walmart Wellness Day for free health screenings that could lead to positive changes in your health and your life.

Services offered:

- Free** blood pressure, blood glucose and BMI screenings*
- Low-cost** immunizations administered by our health professionals (most insurance plans accepted)**
- Free** product samples*

Walmart Wellness Day: Sep. 22 **0 days left** **Set reminder**

Source: <https://news.walmart.com/2017/06/08/walmart-teams-up-with-american-diabetes-association-for-walmart-wellness-day>

Exhibit 10: Three-Year Program Budget and Balance Sheet

Budget

	2019	2020	2021	Total Program Cost
A1c Reader Cost	\$8,600.00	\$ -	\$ -	\$8,600.00
A1c Strip Cost	\$600,472.47	\$669,844.47	\$739,216.47	\$2,009,533.42
Retinopathy Cost	\$725,570.91	\$809,395.41	\$893,219.91	\$2,428,186.22
Printing Costs	\$2,300.00	\$725.00	\$725.00	\$3,750.00
Cost of activity stamp cards	\$500.39	\$558.20	\$616.01	\$1,674.61
Gift Card Cost	\$7,505,905.93	\$8,373,055.93	\$9,240,205.93	\$25,119,167.79
Misc. Supplies	\$4,768.00	\$4,768.00	\$4,768.00	\$14,304.00
Yearly Total	\$8,848,117.71	\$9,858,347.02	\$10,878,751.33	\$29,585,216.05

Assumptions:

- A1c readers (\$200 each) have a 5-year life
- A1c strips cost \$120 per 20 count
- Retinopathy screenings cost \$100 per screen
- Printing costs include welcome packets and marketing flyers
- Cost of activity stamp cards includes designing and printing costs
- Walmart gift cards costs vary depending on denomination \$5-\$30, allocated \$300 per enrollee
- Mics. supplies include supplies such as stamps, barcode scanners, pens, etc.

Balance Sheet

	2018	2019
Operating Revenue	\$ 1,297,947	\$ 1,301,581
Net Patient Revenues	\$ 56,574	\$ 56,574
Total Operating Revenues	\$ 1,354,521	\$ 1,358,155
Operating Expenses	\$ 647,530	\$ 640,371
Supplies and Other	\$ 424,946	\$ 423,066
Depreciation	\$ 62,012	\$ 62,012
Total Operating Expenses	\$ 1,134,488	\$ 1,125,450
Income from Operations	\$ 220,033	\$ 232,705
Interest Expense	\$ (17,212)	\$ (17,212)
Investment Income (loss) and other non-operating income	\$ 43,017	\$ 43,017

Excess (deficit) revenues over expenses	\$ 245,838	\$ 258,510
-----------------------------------------	------------	------------

Exhibit 11: North Carolina Private Health Insurance Market Share

Insurer Name	Enrollment	Market Share
Blue Cross Blue Shield of North Carolina	577,805	96%
Cigna Health Group	19,897	3%
United Health Group	3,346	1%

Source: <https://www.kff.org/state-category/health-coverage>

Exhibit 12: Three-Year Projected Cost Reduction in Hospital Admissions

Hospitalizations from Comorbidities	Rate per 1000	Expected in Covered Pop	Expected uninsured	Diab. DMC-Hospitalization (Region 8,9,10)	Cost per Admission ¹⁻⁶	% Reduction Admissions from lifestyle changes ⁻¹²	Total Cost Reduction from Admissions
Maj. CVD	70.4	9,444	1,284	\$110,697,580.40	\$11,720.94	-9%	\$(1,858,058.89)
Ischemic Heart Disease	18.3	2,455	334	\$36,825,222.12	\$15,000.00	-10%	\$(686,790.39)
Stroke	11.5	1,543	210	\$20,779,553.89	\$13,469.00	-12%	\$(465,046.42)
Lower-Extremity amputation	5.0	671	91	\$22,604,917.77	\$33,700.00	-75%	\$(3,161,862.87)
DKA	7.7	1,033	140	\$27,442,262.85	\$26,566.00	-50%	\$(2,558,991.01)
ESRD	3.0	402	55	\$13,246,615.97	\$32,914.00	-75%	\$(1,852,870.41)
Total	-	-	-	-	-	-	\$(10,583,619.99)

Yearly Cost Reduction in Admissions: \$10,583,619.99

Three Year Cost Reduction in Admissions: \$31,750,859.96

Assumptions:

- Number of diagnosed type II diabetics in NC: 134,154¹³
- 74.6% of diagnosed type II diabetics have seen a physician in the last year¹⁴
- 25% adoption rate of program¹⁵
- Number of patients who adopt the program over three years: 25,019
- 75% adherence rate of participants once they begin the program¹⁶

Sources:

1. https://www.ajmc.com/journals/issue/2010/2010-03-vol16-n03/ajmc_10marnicholswebx_e86to93
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5496598/>
3. <https://www.dovepress.com/patient-level-costs-of-major-cardiovascular-conditions-a-review-of-the-peer-reviewed-fulltext-article-CEOR>
4. <https://journals.sagepub.com/doi/full/10.1177/0309364612441489>
5. <https://www.ncbi.nlm.nih.gov/pubmed/29773640>
6. <https://pharm.ucsf.edu/kidney/need/statistics>
7. <https://www.cardiovascularbusiness.com/topics/hypertension/simplifying-refill-process-boosts-medication-adherence-cvd-patients>
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10. https://www.oecd-ilibrary.org/docserver/health_glance-2009-49-en.pdf?expires=1548957806&id=id&accname=guest&checksum=8E7B8A4502F56C341DE33F24623AFF90
11. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4874741/>
12. https://www.usrds.org/2015/download/vol2_USRDS_ESRD_15.pdf
13. <https://www.cdc.gov/diabetes/data/countydata/countydataindicators.html>
14. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5685052/>
15. <https://www.ncbi.nlm.nih.gov/pubmed/17044763>
16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4157681/>

Exhibit 13: CARD Program Implementation Timeline

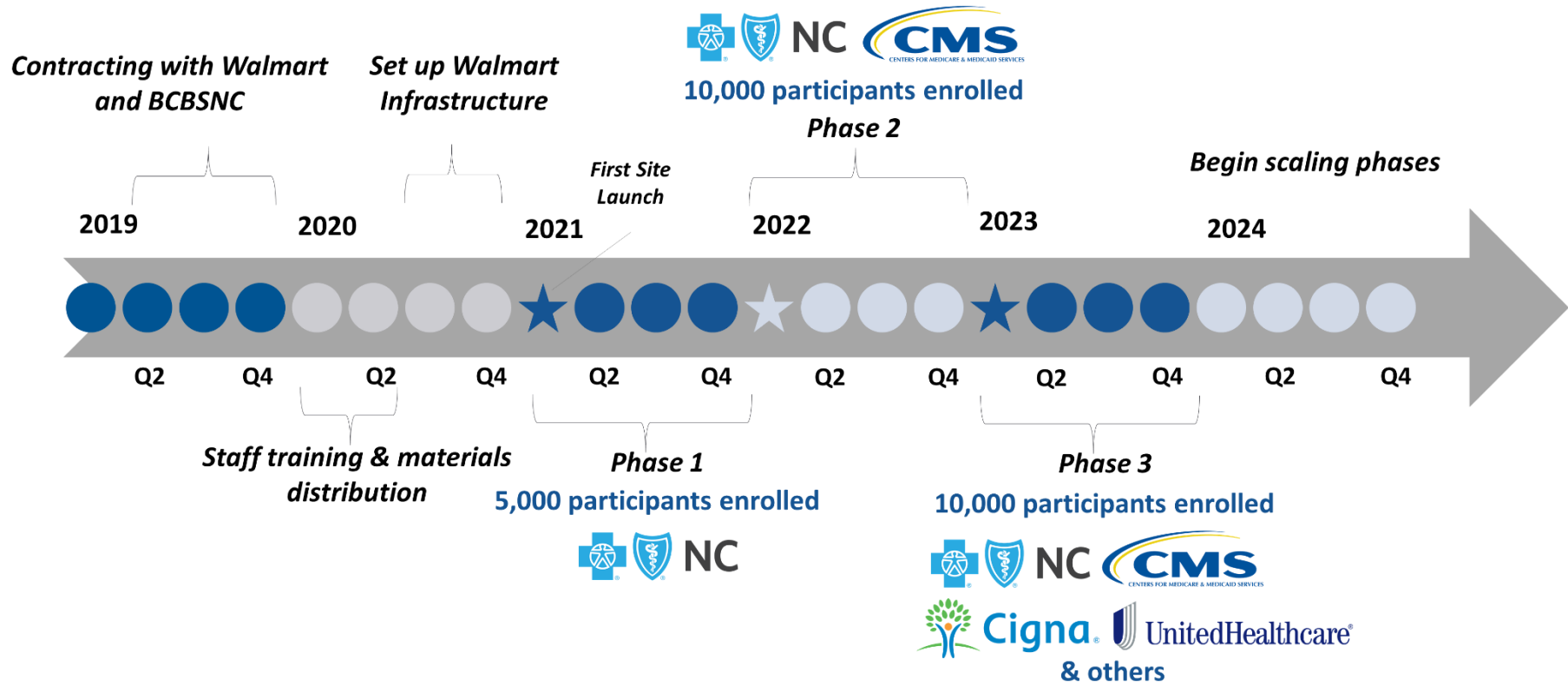
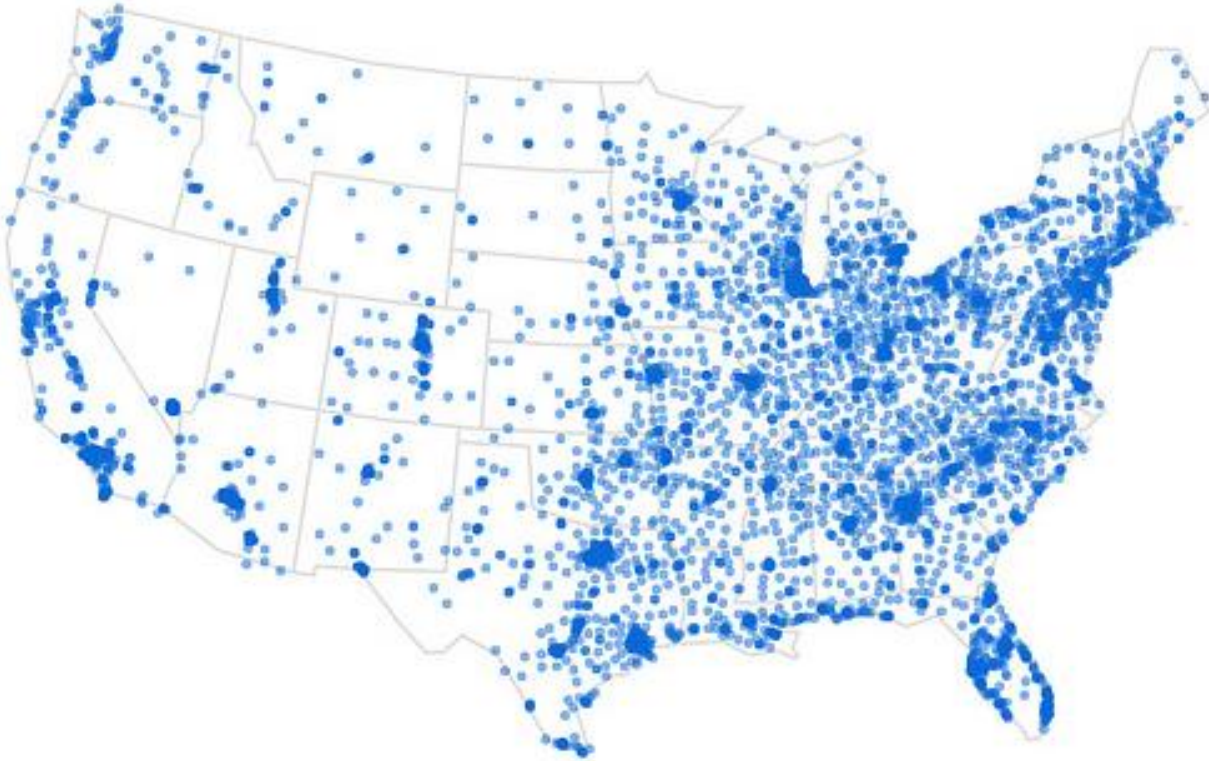


Exhibit 14: Health Insurance Coverage in North Carolina by Type

Insurance Type	Percent Coverage
Employer	46%
Non-Group	7%
Medicaid	18%
Medicare	15%
Other Public	3%
Uninsured	11%

Source: <https://www.kff.org/state-category/health-coverage>

Exhibit 15: National Distribution of Walmart Locations



Sources: <https://www.walmart.com/store/finder>;