

Secondary Prevention

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Definitions

- Primary prevention
 - Promoting health
 - Preventing risk factor or disease
 - Often population-based
- Secondary prevention
 - Early detection of people at risk
 - Reducing their risk
 - Typically targeted

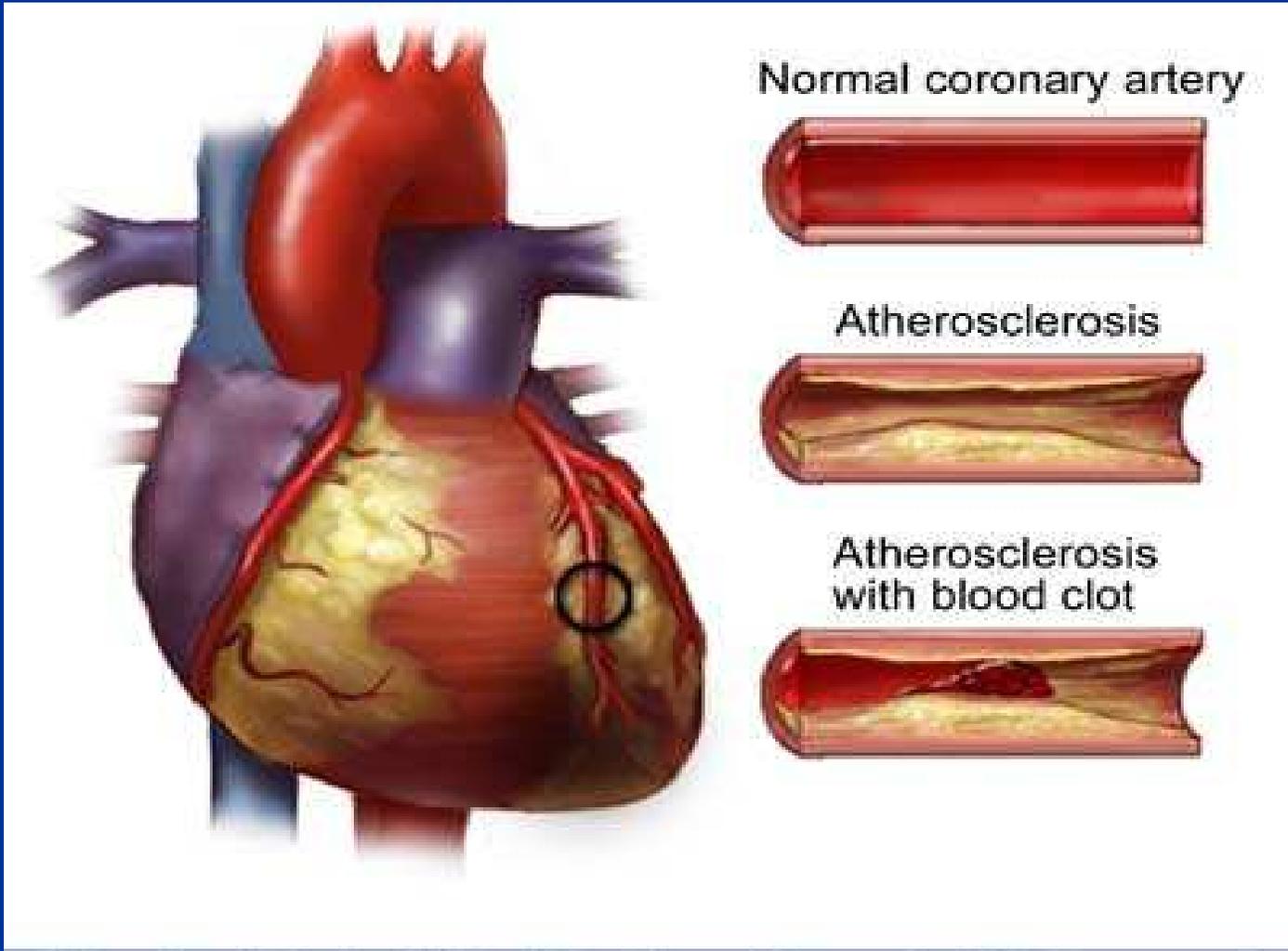
Ecological Model for Factors Influencing Health Outcomes



Source: Modified from Robert Wood Johnson Foundation. "Overcoming Obstacles to Health: Report from the Robert Wood Johnson Foundation to the Commission to Build a Healthier America." February 2008.

Goals

1. Review the role of adolescent healthcare in early detection, reduction, & management of risk for adult disease
2. Propose 5 potential strategies that could lead to increased evidence-based secondary prevention efforts in clinical settings



Normal coronary artery



Atherosclerosis



Atherosclerosis with blood clot



Risk Factors for Adult Cardiovascular Disease

- Family History
- Obesity
- Tobacco Use
- High Blood Pressure
- Diabetes
- High Cholesterol

High Blood Pressure, Diabetes & High Cholesterol Among Adults in North Carolina

States with the Highest Rates of Adult Hypertension in US

Rank	State	%
1	Mississippi	34.5
2	Alabama	33.5
3	West Virginia	33.2
4	Tennessee	32.1
5	Arkansas	31.5
6	South Carolina	31.3
7	Louisiana	30.9
8	Oklahoma	30.7
9	Kentucky	30.1
<i>10</i>	<i>North Carolina</i>	<i>29.8</i>

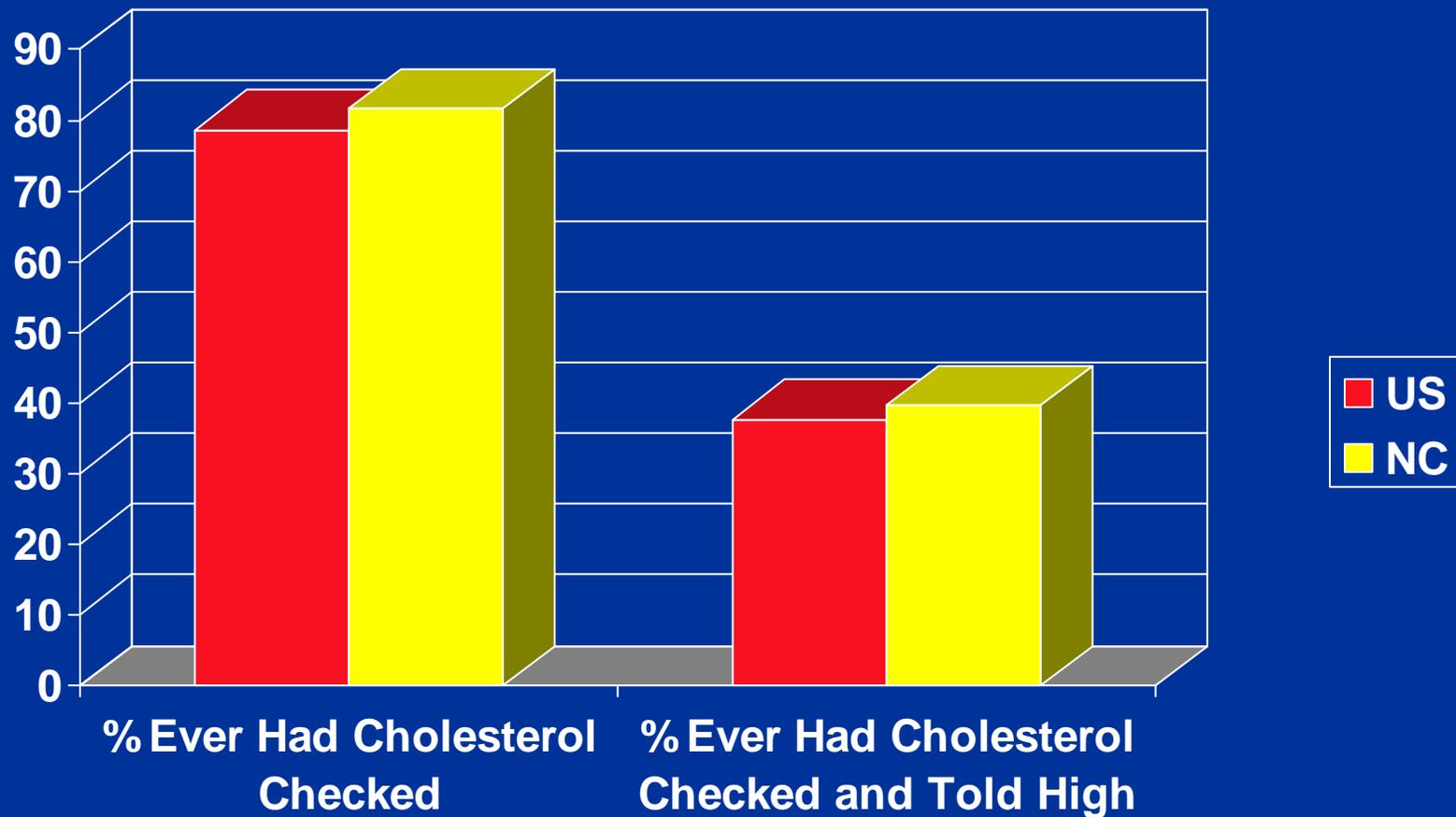
[2003-2007 Combined BRFSS Data Based on Survey Conducted Every Other Year]

States with the Highest Rates of Adult Diabetes in US

Rank	State	%
1	West Virginia	11.1
2 (tie)	Tennessee	10.6
2 (tie)	Mississippi	10.6
4	Alabama	10.0
5	South Carolina	9.8
6	Oklahoma	9.7
7	Kentucky	9.6
8	Louisiana	9.5
9	Georgia	9.2
<i>10</i>	<i>North Carolina</i>	<i>8.9%</i>

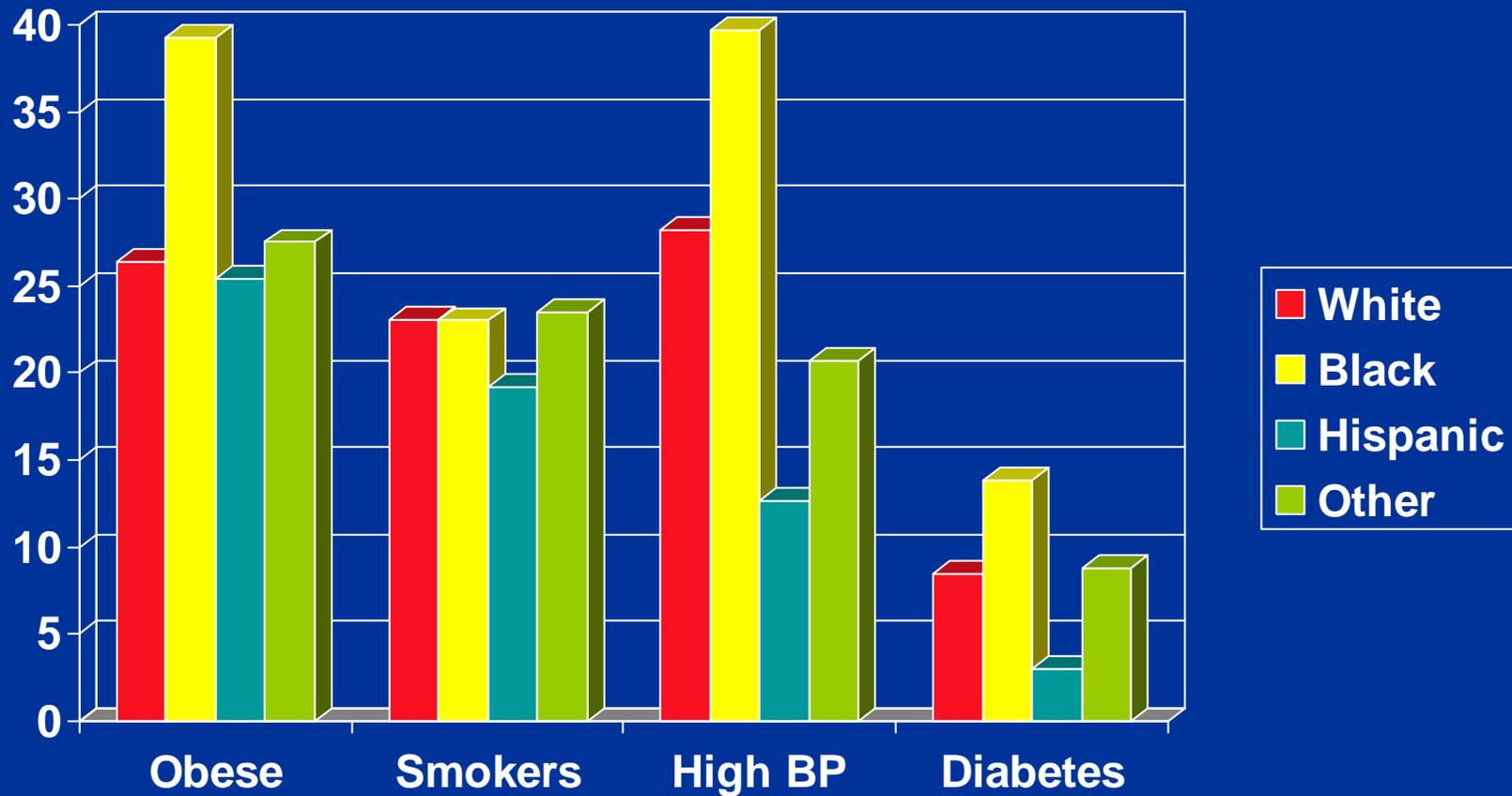
[2003-2007 Combined BRFSS Data Based on Survey Conducted Every Other Year]

Cholesterol Screening and Reported High Cholesterol Among Adults in US and NC (2007 BRFSS)

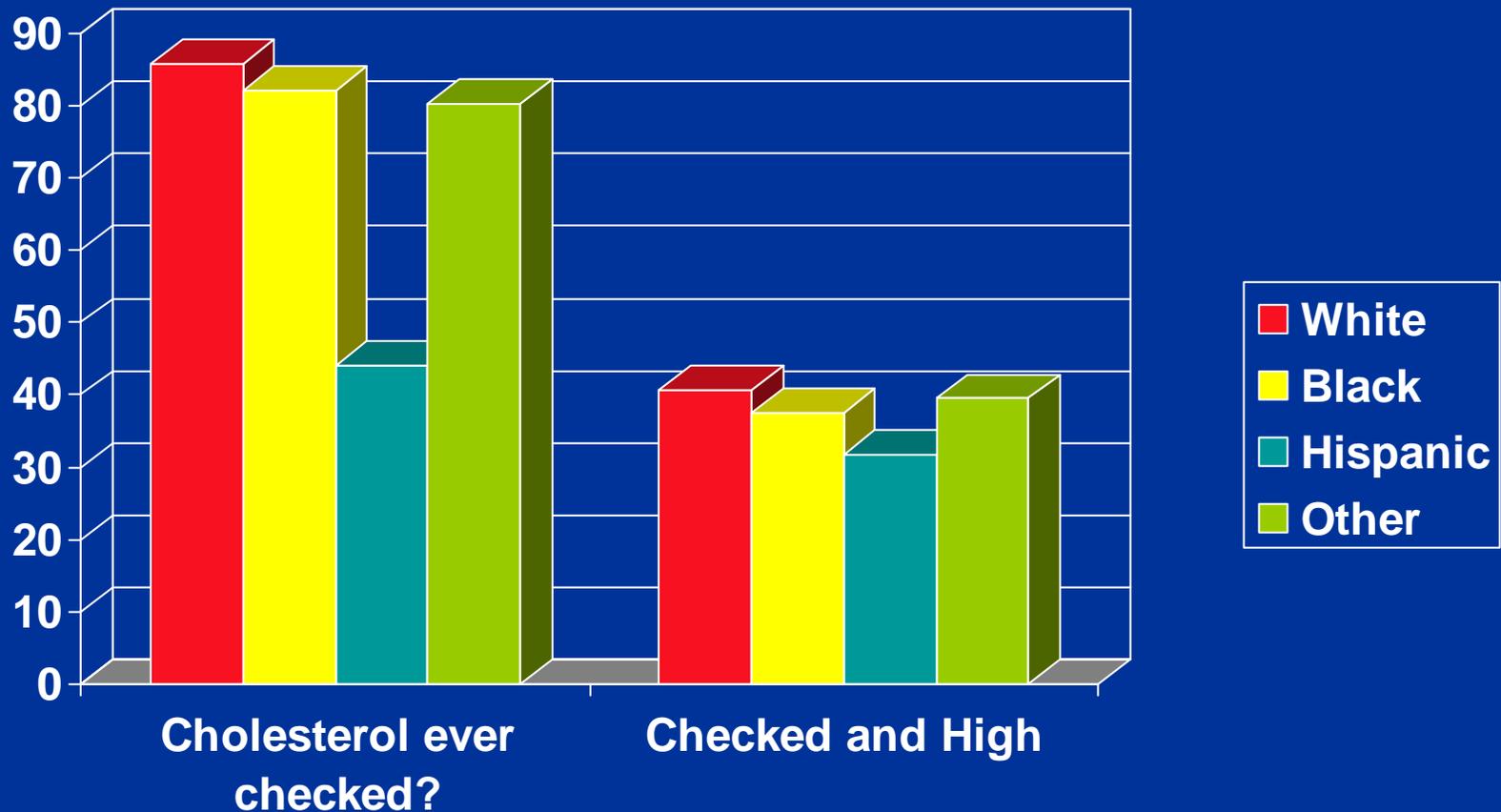


Disparities?

Disparity in Adult CVD Risk Factors by Race/Ethnicity in North Carolina (2007 BRFSS)



Cholesterol Awareness among Adults in North Carolina by Race (2007 BRFSS)



High Blood Pressure, Diabetes &
High Cholesterol Among
North Carolinians
Between 18-24 Years of Age

Risk Factors among North Carolinians 18-24 Years of Age (2007 BRFSS; N=494)

Risk Factor	%
Obese (BMI \geq 30)	21.5
Current smoker	31.3
Ever told had high blood pressure	5.5
Ever had blood cholesterol checked & told high	12.6
Ever told by doctor had diabetes/ pre-diabetes/borderline diabetes	0.9

Summary of Current Screening Recommendations

National

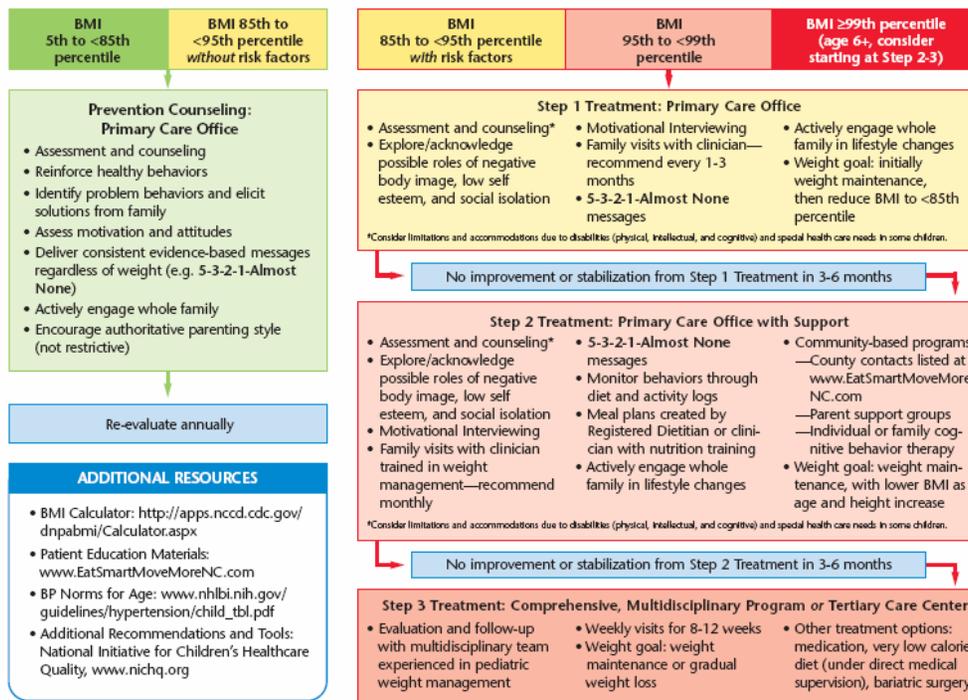
- The American Academy of Pediatrics & Bright Futures
- The American Academy of Family Physicians
- The US Preventive Services Task Force

State

- NC Early Periodic Screening, Diagnostic and Treatment program (NC EPSDT)
- NC Eat Smart Move More Pediatric Obesity Tool Kit

Pediatric Obesity Prevention and Treatment Algorithm

Pediatric Obesity Prevention and Treatment Algorithm



References

An Implementation Guide from the Childhood Obesity Action Network, available at http://www.nichq.org/NIHQ/obesity/732313_4083-4010_A615-4E3556/73571/5316/COMNImplementationGuide62607FINAL.pdf, accessed 3/19/08

Expert Committee Recommendations on the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity. *Pediatrics* 2007; 120 Suppl 4:S163-288.

Hannon TS, Rao G, Antonian SA. Childhood obesity and type 2 diabetes mellitus. *Pediatrics* 2005; 116:473-80.

National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. The fourth report on the diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. *Pediatrics* 2004; 114:555-76.

Navman TB and Carber AM. Cholesterol screening in children and adolescents. *Pediatrics* 2000; 105:637-8.

Williams CL, Hayman LL, Daniels SR, Robinson TN, Steinberger J, Paridon S et al. Cardiovascular health in childhood: A statement for health professionals from the committee on atherosclerosis, hypertension, and obesity in the young (AHA7) of the council on cardiovascular disease in the young. *American Heart Association. Circulation* 2002; 106:143-60.

Table 1: Weight Category by BMI* Percentile

BMI Percentile Range	Weight Category
<5th percentile	Underweight
5th percentile to <85th percentile	Healthy Weight
85th percentile to <95th percentile	Overweight
95th percentile to <99th percentile (or BMI >30)	Obese
≥99th percentile	Obese with Increased Risk

*Accurate BMI assessment depends on accurate height and weight measurements, which may be difficult to obtain in some children with disabilities and special health care needs.

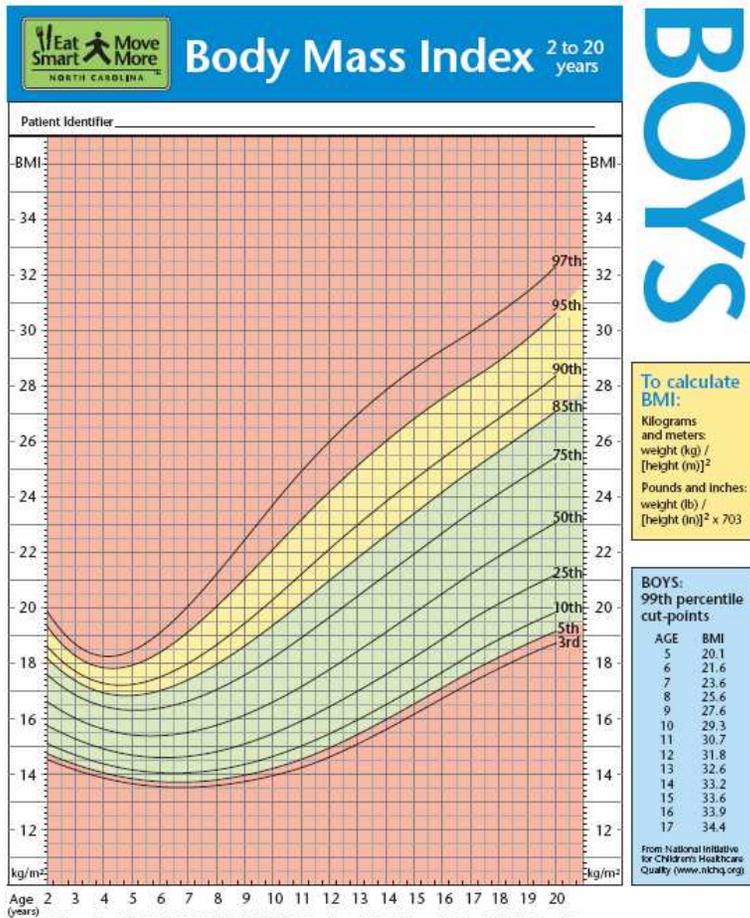
Table 2: Risk Factors for Comorbidities and Future Obesity

Personal Risk Factors	Risk Factors from Family History
<ul style="list-style-type: none"> Elevated blood pressure Ethnicity: African American, Mexican-American, Native American, Pacific Islander Puberty Medications associated with weight gain (steroids, anti-psychotics, antiepileptics) Acanthosis Nigrans Birth history of SGA or LGA Disabilities 	<ul style="list-style-type: none"> Type 2 Diabetes Hypertension High cholesterol Obese parent(s) Mother with Gestational Diabetes Family member with early death from heart disease or stroke

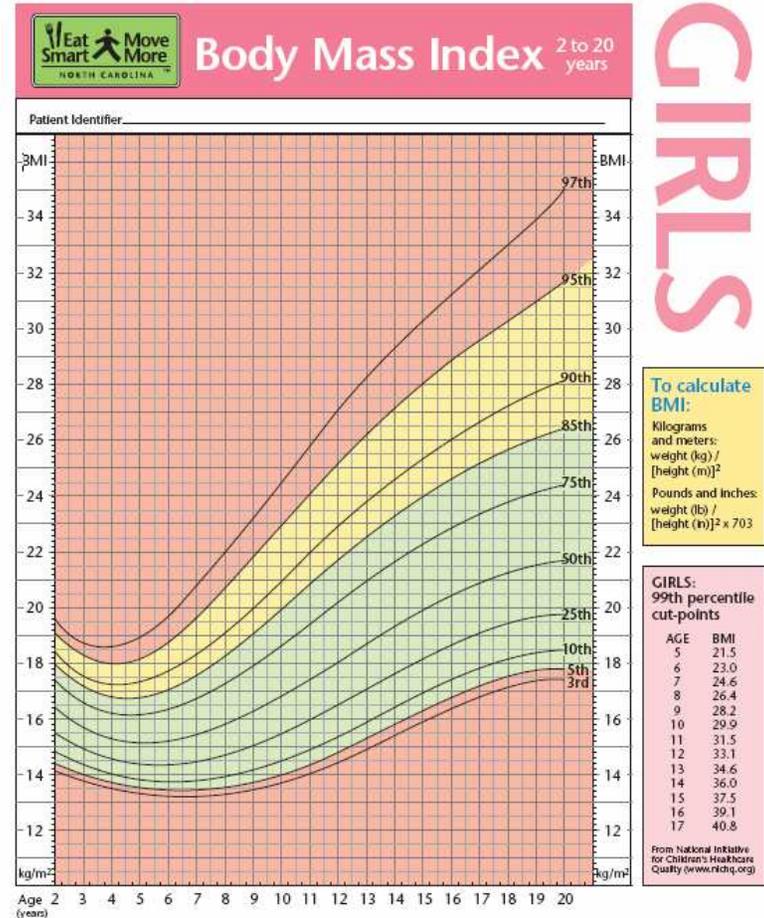
Table 3: Laboratory Evaluation Recommendations

Age	BMI	Risk Factors	Action Plan
<10 years	≥85th %ile	N/A	Consider fasting lipids
≥10 years	85th to <95th %ile	No risk factors or symptoms	Consider fasting lipids
		≥2 risk factors	Biannually: fasting lipid profile, fasting glucose, consider ALT and AST
	≥95th %ile	N/A	Biannually: fasting lipid profile, fasting glucose, ALT and AST, other tests indicated by history and physical

BMI Charts



Color coding of the 2000 CDC BMI charts by UNC's Department of Pediatrics and Center for Health Promotion and Disease Prevention (CDC Cooperative agreement U48-DP-000059) for research and clinical purposes



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Puberty and BMI

	Age (yrs)	Ht (in)	Wt (lb)	BMI	BMI %tile for age & gender
Susan	12.7	63.0	128	22.67	87.0
	13.2	63.75	129	22.31	83.4
	14.1	64.75	135	22.64	81.0
Bob	13.2	68.25	164	24.75	94.2
	13.7	68.50	169.5	25.39	94.5
	14.7	69.25	174.0	25.51	93.2

Prescription for Health



Prescription for Health

Name: _____

Date: _____

5-3-2-1-Almost None

5 5 or more servings of fruits and vegetables daily

3 3 structured meals daily—eat breakfast, less fast food, and more meals prepared at home

2 2 hours or less of TV or video games daily

1 1 hour or more of moderate to vigorous physical activity daily

Almost None Limit sugar-sweetened drinks to "almost none"

Adapted from the 5-2-1-0 message promoted by the National Initiative for Children's Healthcare Quality (www.nichq.org)



Broader Context =
Routine Well Adolescent Care

Routine Well Adolescent Care

- Annual visits ages 10-21
- Content:
 - History including HEADDSS
 - Physical exam including Height, Weight, BMI, BP, Tanner staging
 - Lab tests if indicated
 - Tailored counseling and management
 - Follow-up plan



Bright Futures Guidelines Priorities and Screening Tables



American Academy of Pediatrics

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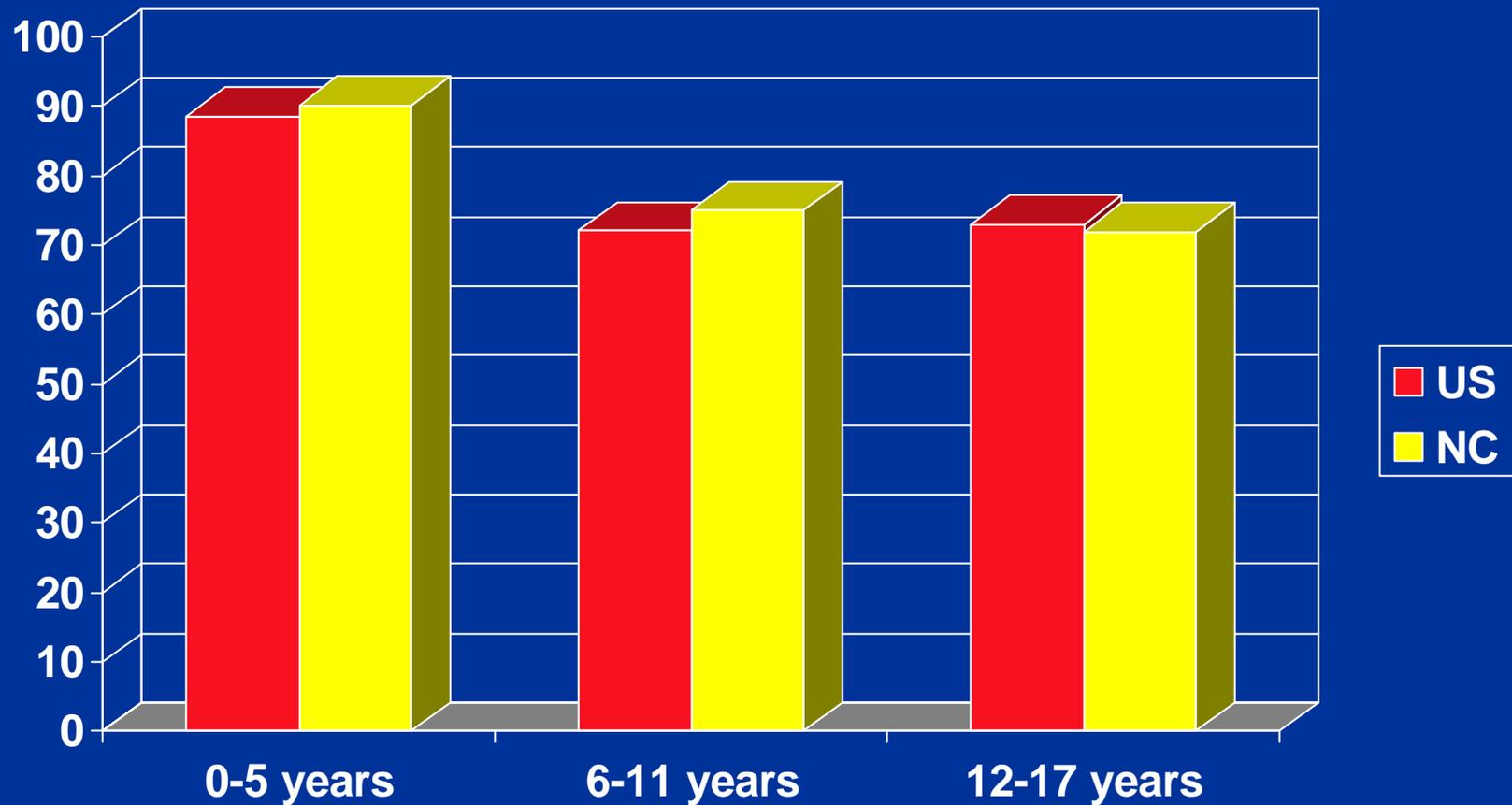


AMA Guidelines for Adolescent Preventive Services (GAPS)

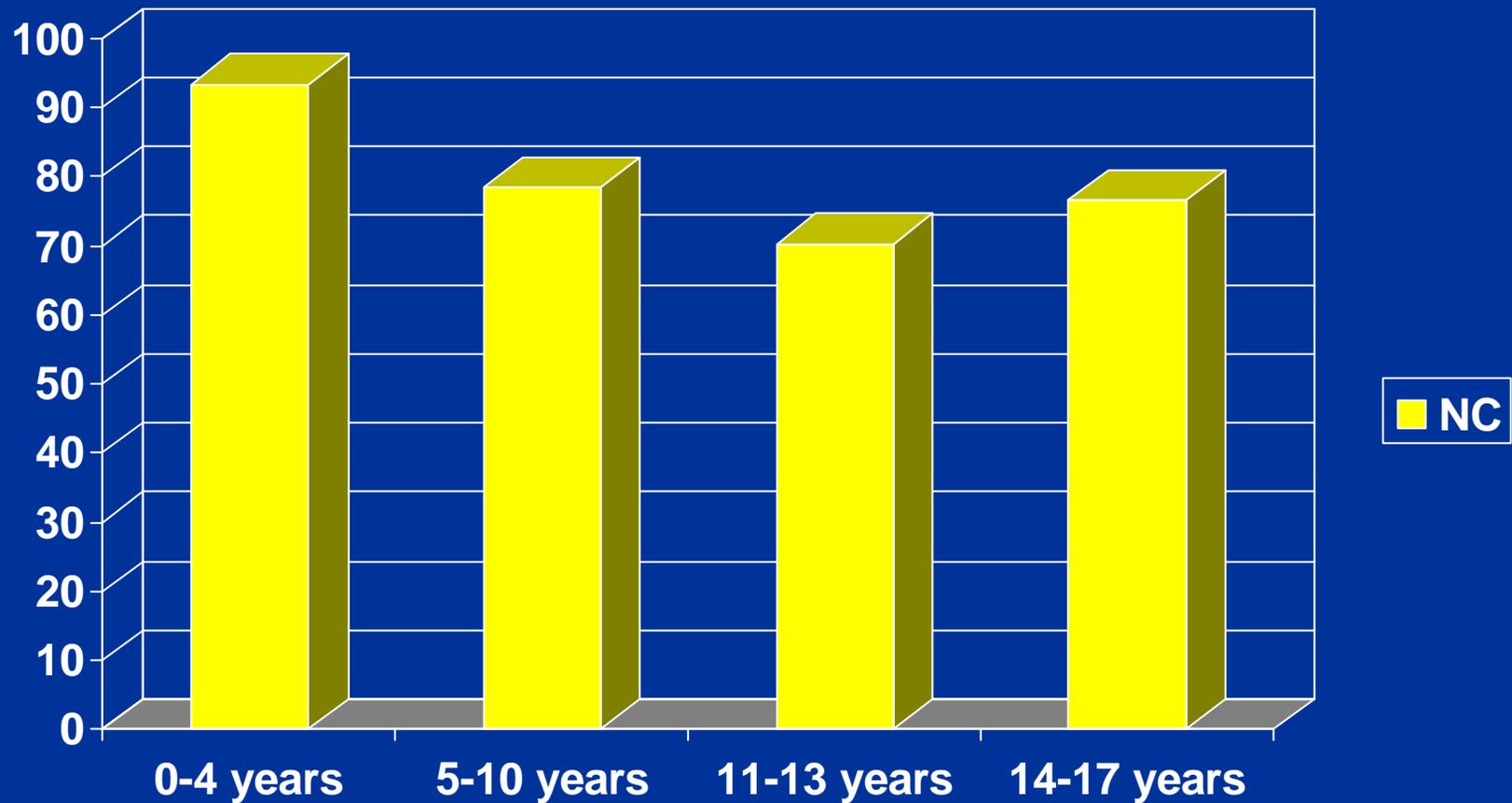
<http://www.ama-assn.org/ama/pub/category/1980.html>

Well Adolescent Care in North Carolina

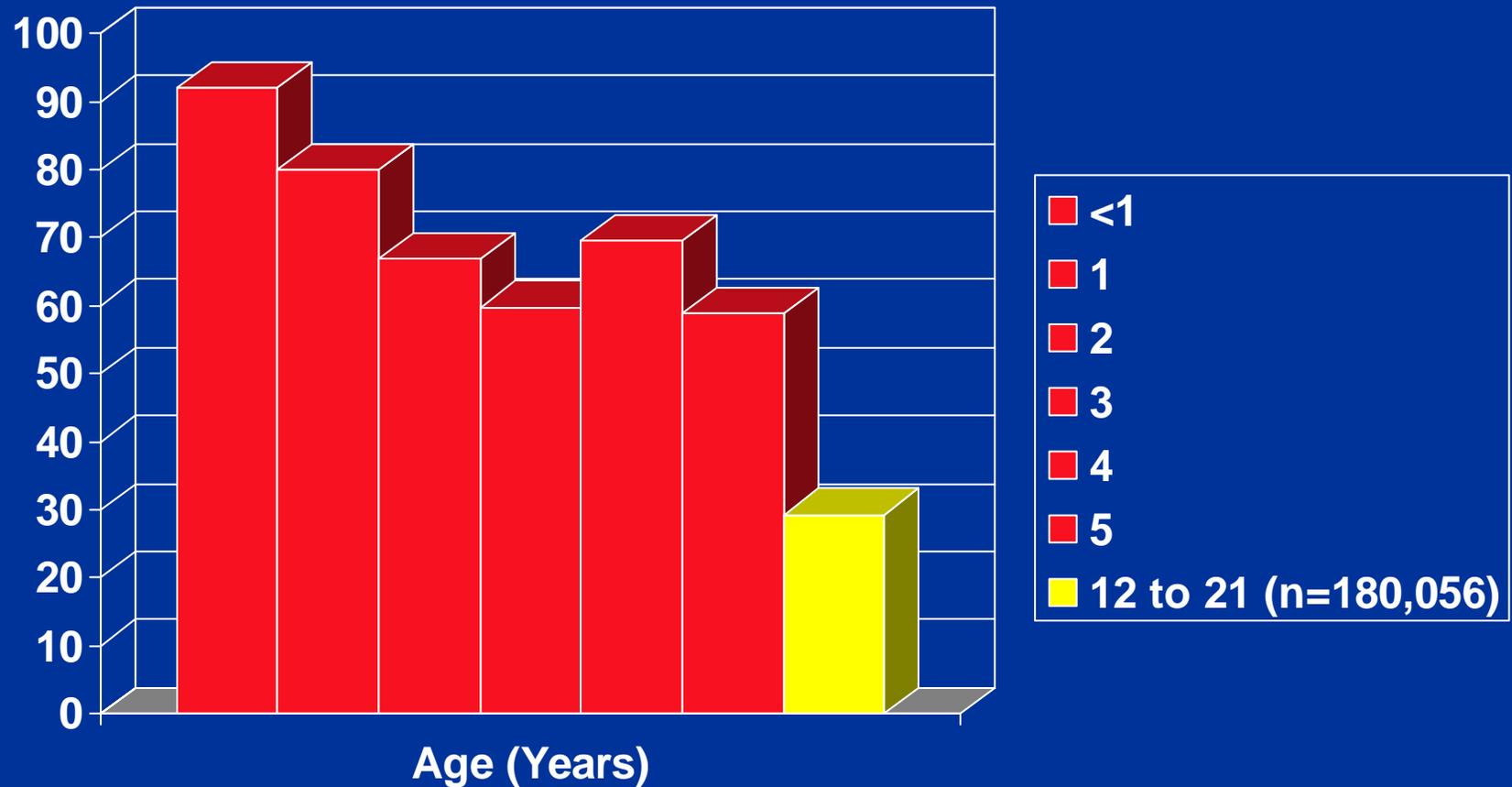
% of Children with Preventive Medical Care Visits
in Past 12 months –
National Survey of Children's Health (2003-04)



% of Children with Preventive Medical Care Visits in Past 12 months – NC Statewide CHAMP Survey 2007 (N=2,688)



% of Medicaid-Enrolled Children in NC Receiving Preventive Health Care by Age (2006)

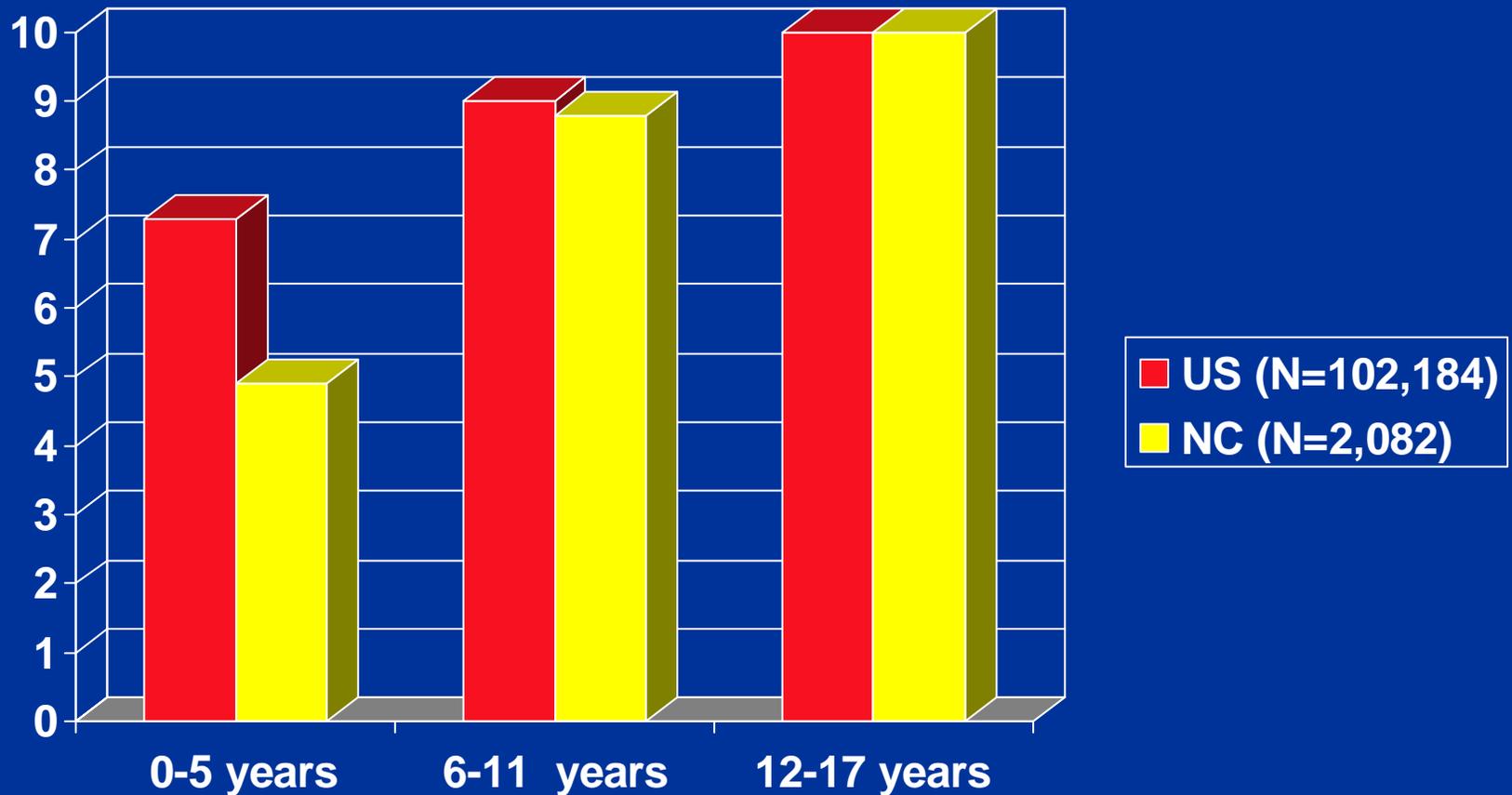


Quality of Health Care?

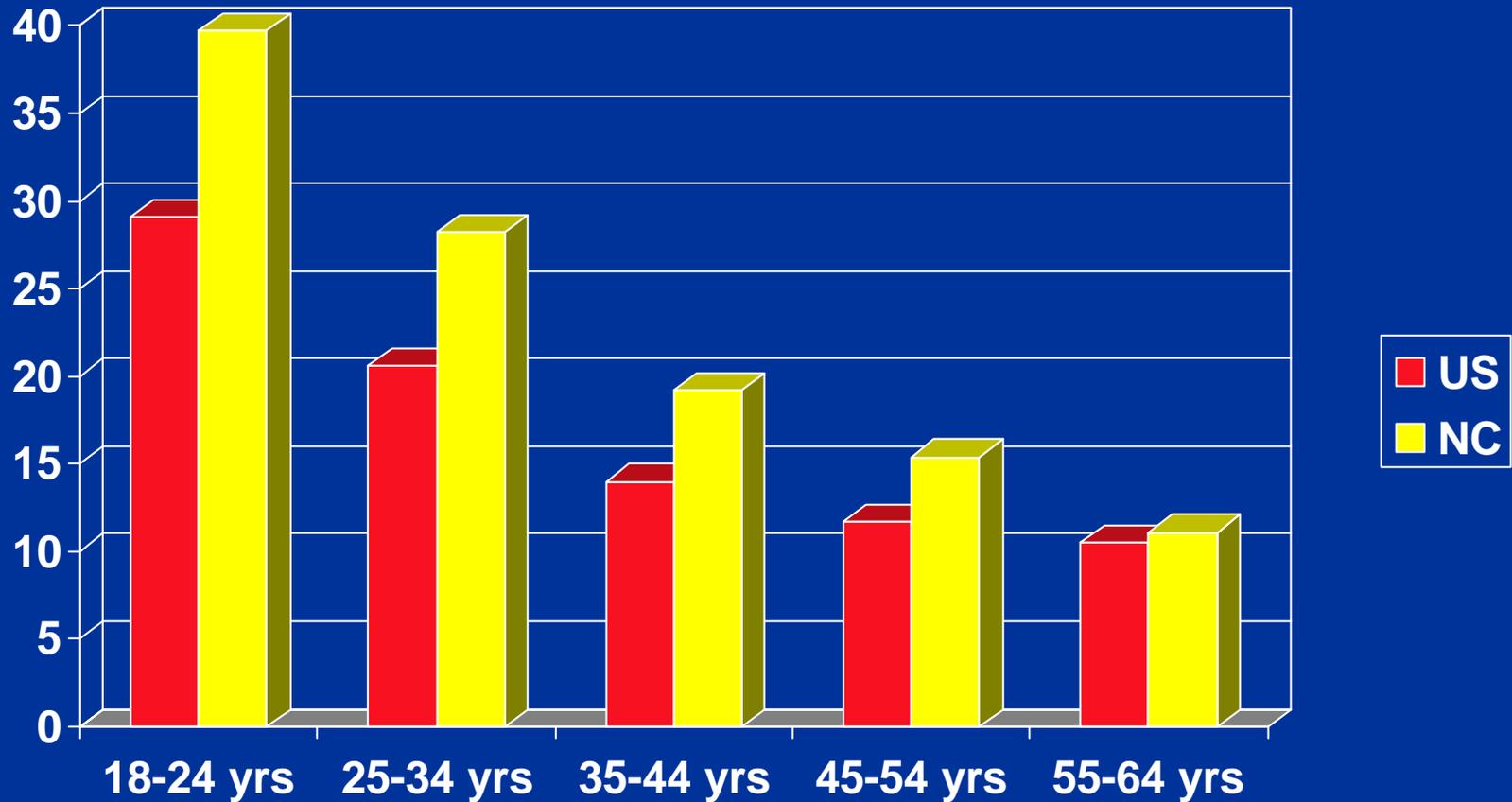
Barriers to Adolescents Receiving Annual High Quality Preventive Health Care

- New culture
- Access
 - Insurance, “Medical Home”
- Use
 - Transportation, parent involvement, skills to navigate health care system
- Quality of care
 - Evolving recommendations, clinician skill, time, reimbursement

% of Children Uninsured at Time of Survey Nationwide and in North Carolina – National Survey of Children's Health (2003-04)



% of Adults Uninsured at Time of Survey Nationwide and in North Carolina – BRFSS 2007

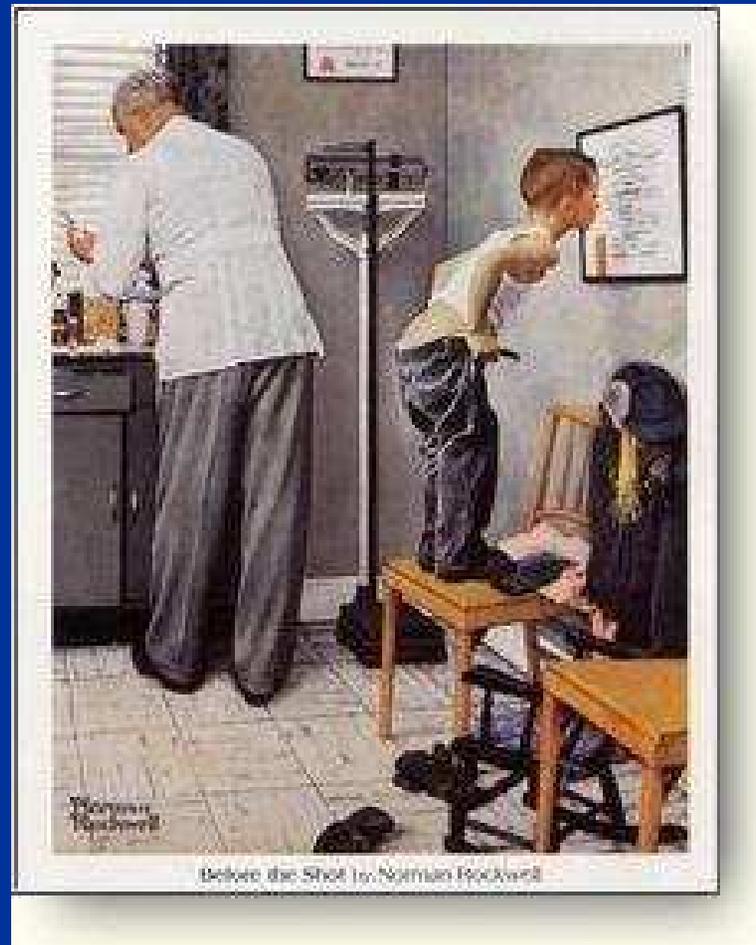


Age and Insurance in NC 2005-06

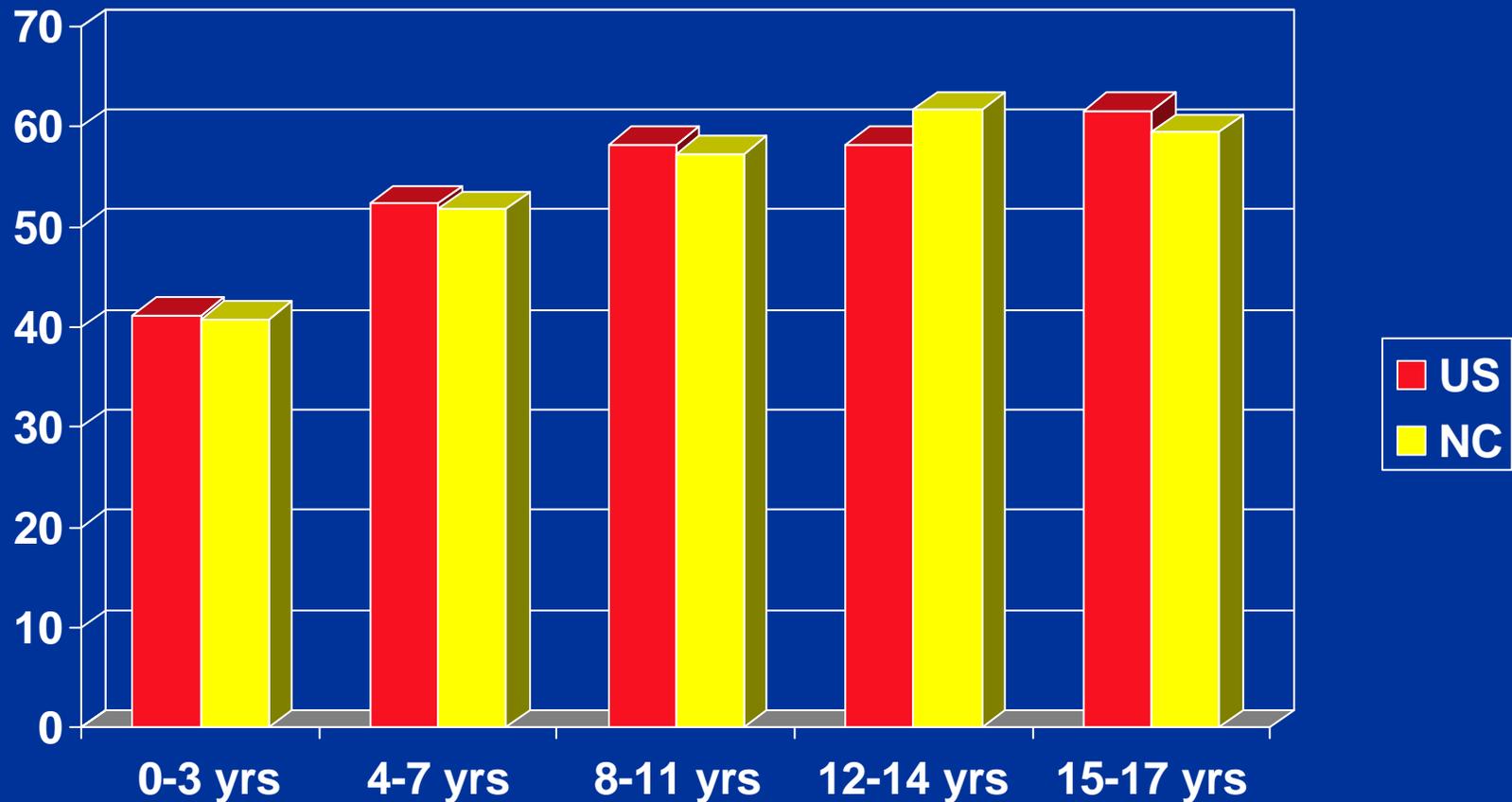
Age (Yrs)	Thousands of Uninsured	Percent of All Uninsured	Percent of This Group Uninsured
0-17	298	19.6	13.4
18-24	238	15.7	31.2
25-34	342	22.5	27.4
35-44	274	18.0	20.7
45-54	215	14.2	18.5
55-64	151	10.0	14.1
Total	1,518	100	19.5

[NC Institute Of Medicine Data Snapshot 2007-1]

Medical Homes



% of Children Who *Do Not* Have a Medical Home Nationwide and in NC – National Survey of Children’s Health (2003-04)



What Happens After Adolescence?

Little Attention To Transition Issues

- Knowledge/skills to manage ongoing health conditions
- Knowledge/skills to manage ongoing healthcare
 - Transition to new providers
 - Health insurance “cliff”

Potential Strategies to Consider

Potential Strategy #1 = Build Culture of “Well Adolescent Visits”

Develop and evaluate promising approaches to educate healthcare professionals, parents, adolescents, and other key stakeholders about professional recommendations for annual high-quality wellness visits for children 10-21.

Potential Strategy #2 = Update NC EPSDT

Update NC EPSDT guidelines to reflect evidence-based recommendations for well child care for this age group and the intent of Bright Futures.

Potential Strategy #3 = Build Culture Around Transition

Develop and evaluate promising approaches to educate healthcare professionals, parents, adolescents, and other key stakeholders about the importance of older adolescents acquiring:

- Knowledge/skills to manage ongoing health conditions
- Knowledge/skills to manage ongoing healthcare

Potential Strategy #4 = Pilot Studies

Design and conduct pilot studies to increase the proportion of adolescents that:

- Receive high quality annual wellness visits
- Acquire knowledge/skills to manage chronic illness or conditions into adulthood

Potential Strategy #5 = Insurance Coverage

All public and private insurers should pay for annual wellness visits for North Carolinians 10-21 years of age.

All public and private insurers should extend child health insurance coverage to age 25.



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Staff Photographer
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