

# Quality of teen preventive care

Assessing and improving health system provision of adolescent preventive services: A methodology and observed performance on the Young Adult Health Care Survey

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## Background

**Preventive counseling and screening** for behavioral and other health risks are the centerpiece of **adolescent** preventive services guidelines set forth by the American Medical Association, the American Academy of Pediatrics and the Maternal and Child Health Bureau.

Adolescents often **do not receive** recommended preventive services.

Quality **measures are not available** to help assess and improve health care system performance in this area.

**Adolescents** are the **most valid source of data** for assessing provision of preventive counseling and screening.

Under the rubric of the Child and Adolescent Health Measurement Initiative, FACCT--The Foundation for Accountability developed and tested the **Young Adult Health Care Survey** as a tool for assessing quality of adolescent preventive counseling and screening services.

## Study Objective

Develop a **valid and feasible method for measuring and comparing quality** of adolescent preventive counseling and screening services.

# Six Stage Measurement Development Process and Criteria

All measures developed under the rubric of the Child and Adolescent Health Measurement Initiative use the *standard FACCT process* for developing and testing quality measures.

- Stage 1: Conceptual Framework and Relevance:** Develop conceptual framework for measurement within topical area, obtain consumer input, review available literature, measurement methods and tools, establish and obtain input from an expert advisory group.  
*Criteria focus: Consumer and Professional Relevance, Usefulness and Face Validity*
- Stage 2:** Develop **starting point measurement proposal** and conduct phase I **feasibility and stakeholder review**.  
*Criteria focus: General Feasibility and Content Validity*
- Stage 3:** Specify **viable measurement methods and tools** and convene advisory group to select options for further development and **design field test**.  
*Criteria focus: Feasibility and Soundness of Measures*
- Stage 4:** Conduct **field testing** (minimum 3 sites), conduct data analysis and engage advisory group in **review and interpretation of findings**.  
*Criteria focus: Feasibility and Soundness of Measures*
- Stage 5:** Revise and **refine quality measurement specifications** for each application (e.g. health plan comparison) addressing each criteria. Obtain additional consumer input and **specify scoring and reporting** guidelines.  
*Criteria focus: Relevance, Feasibility, Soundness and Interpretability*
- Stage 6:** Develop **scientific and technical documentation** and begin larger scale **implementation and dissemination**.  
*Criteria focus: Application, Generalizability and Usefulness*

# Adolescent Preventive Care Quality Measures

Responses from the Young Adult Health Care Survey (YAHCS) are used to create seven quality measures.

QUALITY MEASURE	TOPICS INCLUDED IN QUALITY MEASURE
1: Counseling and screening to <b>prevent risky behaviors</b>	Discuss/screening for: smoking, drinking, drunk driving, chewing tobacco, street drugs, seat belt use, violence, guns, sexual/physical abuse, helmet use, steroid pills
2: Counseling and screening to <b>prevent unwanted pregnancy and STDs</b>	Discuss/screening for: condoms, Human Immunodeficiency Virus, birth control, sexually transmitted diseases
3: Counseling and screening related to <b>diet, weight and exercise</b>	Discuss/screening for: weight, healthy diet, exercise
4: Counseling and screening related to <b>depression, mental health and relationships</b>	Discuss/screening for: feeling sad, emotions or moods, suicide and sexual orientation
5: Care provided in a <b>confidential and/or private</b> setting	Report of having had private time with a health care provider. Understanding that the visit is confidential.
6: <b>Helpfulness</b> of counseling provided	Report of helpfulness of counseling on selected risk behavior topics: cigarettes, alcohol, condoms/HIV, birth control
7: <b>Communication and experience of care</b> (Draft Adolescent CAHPS® items)	Report experience regarding the helpfulness of office staff, whether doctor/other providers listen carefully, explain things clearly, respect you, spend enough time, speak in a language you understand. Adolescent overall assessment of care.

# Methods

## Survey Design and Testing

A **45-item survey** to be administered to teens 14-18 years old was developed and tested with a diverse group of **commercially and publicly insured** adolescents from six managed care organizations (N=4060). (Table 1)

**Survey design** included a review of existing teen surveys, drafting of items to match quality measurement concepts, survey formatting, **cognitive testing** with adolescents (N=35) and readability assessments.

Results of **readability** analysis indicated that the YAHCS survey items are written at the sixth-eighth grade reading level and cognitive testing confirmed the readability of the YAHCS across teens with a range of educational levels.

Informed **consent** was administered with a waiver of documentation of parental permission and adolescent assent.

Table 1: Description of YAHCS Field Trial Sites

Site	Geographic Location	Type	Mode of administration	Teen Population Sampled*
#1	Northern California	commercial HMO	Telephone	HEDIS® adolescent well visit or FACCT Well Plus Visit
#2	Southern California	Medicaid HMO	Mail	Random Sample
#3	Western New York	commercial HMO	Telephone	HEDIS® adolescent well visit or FACCT Well Plus Visit
#4	Northern California	Medicaid HMO	Mail	Random Sample
#5	Southern California	commercial HMO	Mail	HEDIS® adolescent well visit
#6	Florida	collecting data from Florida Healthy Kids program (S-CHIP)	Telephone	HEDIS® adolescent well visit or FACCT Well Plus Visit

\*HEDIS® adolescent well visit: Well visit as defined by the National Committee for Quality Assurance. FACCT Well Visit Plus: FACCT defined visit that identifies teens for which 1) preventive counseling had been coded or teens who had a visit with their primary care provider AND 2) the continuous enrollment requirement for the HEDIS well visit was met. Random Sample: Random sample of teens 14-18 years old.

# Evaluation of the YAHCS

Feasibility of the YAHCS was primarily evaluated in terms of teen burden, performance of the parental consent and adolescent assent process, response rate and response bias

**Construct validity and reliability** of the YAHCS quality measurement scales were evaluated using factor analysis and internal consistency analysis

**Concurrent validity** of the YAHCS was evaluated by testing hypotheses regarding expected associations among survey items and scales

The **significance of observed variations** in YAHCS quality scores within and among field trial sites was evaluated using ANOVA and Chi Square tests of significance

The **explanatory power of non-quality related factors** (e.g. demographic, health system and survey administration mode) was evaluated using multivariate linear regression analysis

# Results

## Feasibility

**Teen Burden:** The YAHCS survey took approximately **10-15 minutes** for teens to complete using a self-administered or telephone administration protocol.

**Parent Consent:** Overall, 6.45% of parents denied consent and 7.2% of teens did not assent.

**Response Rate:** Overall **response rate** across six sites: 46.1% (one outlier removed due to non-methods based administration flaws). The overall response rate is **similar to or higher than** that of similar studies.

**Response Bias:** No significant differences were observed in responders and non-responders in terms of gender. Older teens and those with a well visit or other type of visit where preventive counseling may be expected were somewhat more likely to respond to the survey. See Table 2 for description of survey respondents.

**Table 2: Characteristics of Survey Respondents**

<i>Characteristic</i>	<i>Proportion of Respondents N=1531</i>
Male	42.8%
Female	57.2%
Child age 14-16 years old	42.3%
Child age 16-19 years old	57.7%
Reported racial affiliation	
White	48.2%
Black	12.0%
Hispanic	13.7%
Asian	18.5%
Native Hawaiian, Pacific Islander or American Indian	1.94%
More than one group	5.7%
Medicaid Insurance	57.2%
Commercially Insured	42.8%
Had a well visit recorded by health plan	52.9%
Had another type of prevention oriented visit recorded by health plan	21.4%
Had any other type of visit	14.2%
Had no visit recorded by health plan	11.7%
Adolescent reported seeing doctor or other provider in past 12 months	94.5%
Adolescent reported a regular or routine visit in past 12 months	91.7%

# Psychometric Soundness: Construct Validity and Reliability

## Factor analysis (Table 3)

A strong factor structure was indicated for the YAHCS, yielding seven factors. The average **factor loading** for survey items across factors was **.64** (range .53-.75). NOTE: Helpfulness items not included in analysis as only teens receiving counseling answer these items.

The **seven factors** were used to create **six quality measurement scales**. Two factors were combined into one quality measurement scale to represent counseling and screening on a range of risky behavior topics. The “helpfulness of counseling” scale makes up the seventh YAHCS measure.

## Internal consistency (Table 3)

Each of the seven scales demonstrated strong internal consistency reliability. Cronbach’s alpha measure of **internal consistency** was **.68-.87** across the seven YAHCS quality measures.

Table 3: Construct Validity and Reliability of the YAHCS Quality Scales

YAHCS Quality Measure	Internal Consistency Reliability (range across six sites)	Factors (Average Item Loading)
Preventive screening and counseling on <b>risky behaviors</b>	<b>.87</b> (.83-.89)	<i>Factor 1: Smoking and Alcohol (.59)</i> <i>Factor 2: Other Health Risk Topics (.53)</i>
Preventive screening and counseling on <b>sexual activity and STDs</b>	<b>.84</b> (.81-.86)	<i>Factor 3: Sex and STDs (.76)</i>
Preventive screening and counseling on <b>weight, healthy diet and exercise</b>	<b>.70</b> (.56-.74)	<i>Factor 4: Weight, Diet and Exercise (.75)</i>
Preventive screening and counseling on <b>emotional health and relationship issues</b>	<b>.72</b> (.68-.75)	<i>Factor 5: Emotional Health (.55)</i>
<b>Private and confidential care</b>	<b>.68</b> (.53-.74)	<i>Factor 6: Private and Confidential Care (.72)</i>
<b>Experience of care</b>	<b>.78</b> (.72-.84)	<i>Factor 7: Experience of Care (.60)</i>

## Concurrent Validity (Table 4)

Four hypotheses were evaluated:

Adolescents who indicate that they had a **private visit** are more likely to report having received preventive counseling and screening

Adolescents with specific **risky health behaviors** are more likely to report having received preventive counseling and screening

Adolescents who report that their doctor and/or other health care **providers listened** to them carefully are more likely to report having received preventive counseling and screening

Adolescents indicating that providers **talked with them about one topic** are more likely to indicate that providers talked with them about other prevention topics.

As can be seen in Table 3, **expected relationships between survey scales and items were observed for each hypothesis.**

Table 4: Associations Among YAHCS Items and Scales

Association Questions	Odds Ratio (N=1528)
Provider more likely to talk about <b>core prevention</b> topics if teen reports having had a <b>private visit</b> ?	3.60 95% CI (2.91-4.47)
Teen more likely to report a <b>private visit</b> if they know of a <b>place to go without parents knowing</b> ?	2.09 95% CI (1.70 - 2.58)
Provider more likely to talk about <b>core prevention</b> topics if teen reports one or more of the <b>associated risk behaviors</b> ?	2.02 95% CI (1.62-2.52)
Provider more likely to <b>talk</b> about the risks of <b>smoking</b> if teen <b>smokes</b> ?	2.09 95% CI (1.48-2.68)
Provider more likely to <b>talk about preventing HIV/AIDS</b> if teen is <b>sexually active</b> ?	2.38 95% CI (1.9-2.97)
Provider more likely to <b>talk about birth control</b> if teen is <b>sexually active</b> ?	4.27 95% CI (3.4-5.4)
Provider more likely to <b>talk about drinking</b> if teen <b>drinks</b> ?	1.19 95% CI (.88-1.6)
Provider more likely to <b>talk about feeling sad or depressed</b> if teen reports <b>significant sadness</b> ?	2.58 95% CI (1.90-2.97)
Teen more likely to report provider <b>listens carefully</b> to them if provider <b>spoke with teen about one or more</b> core prevention topics?	1.59 95% CI (1.23-2.05)
Provider more likely to <b>talk about drinking</b> if also <b>talks to teen about smoking</b> ?	22.7 95% CI (16.4-31.4)

## Significance of Observed Variations (Table 5)

Performance on each of the YAHCS quality measures **varied significantly** across the six field trial sites.

**Lowest** scores were observed for Preventive Screening and Counseling on Risky Behaviors (18.2%) and **highest** for Experience of Care (average 72.4)

**Table 5: YAHCS Quality Measures: Health Plan Scores**

YAHCS Quality Measure	Health Plan Average Scores (range across six sites)
1. Preventive counseling and screening on risky behaviors (average proportion of “yes” responses across items)	18.2% (8.3-26.3)
2. Preventive counseling and screening on sexual activity and STDs (average proportion of “yes” responses across items)	36.4% (18.7-48.6)*
3. Preventive counseling and screening on weight, healthy diet and exercise (average proportion of “yes” responses across items)	50.4% (39.8-64)*
4. Preventive counseling and screening on emotional health and relationship issues (average proportion of “yes” responses across items)	23% (13.4-30.9)*
5. Private and confidential care (average proportion of “yes” responses across items)	52.6% (42.3-71.2*)
6. Helpfulness of counseling (out of 100 points possible)	66.7 (59.3-72)*
7. Experience of care (out of 100 points possible)	74.2 (62.0-82.1)

# Explanatory Power of Non-Quality Related Factors

(Table 5)

**Regression Model:** Multivariate linear regression analysis was performed using adolescent YAHCS quality measure scores as dependent variables. Independent variables included: age of adolescent, gender, racial affiliation, payer (commercial or public), survey administration mode (mail or telephone) and type of health care visit (well visit or other).

**Explanatory Power:** Demographic and health care system variables **do not** account for a large portion of **variation** across adolescent reported quality of care ( $R^2 = .03 - .16$ ).

**Significant Effects** were observed on one or more of the YAHCS quality measures for age, gender, African American or Asian racial affiliation, payer, mode of survey administration and type of health care visit.

Examples:

- a) **Age:** Older teens more likely to have a private visit and receive counseling and screening sexual activity.
- b) **Gender:** Females more likely to receive counseling and screening on sexual activity.
- c) **Race:**

African American teens more likely to receive counseling and screening on risky behavior, sexual activity, diet, weight and exercise and have private visits.

Asian teens less likely to receive counseling and screening on emotional health and have private visits and less likely to report positive experience of care (e.g. communication with providers).

**Table 5: Results of Regression Analysis**

Dependent Variables: YAHCS Quality Measures							<b>Definition of Variables:</b> <b>Age:</b> 1=14-15, 0=16-19; <b>Gender:</b> 1=female, 0 = male; <b>African American:</b> 1 = African American, 0 = not African American; <b>Hispanic:</b> 1= Hispanic, 0= not Hispanic; <b>Asian:</b> 1=Asian, 0=not Asian <b>Payer:</b> 1=Public Sector Insurance Coverage, 0=Commerical Insurance Coverage; <b>Administration Mode:</b> 1=Mail, 0=Telephone; <b>Type of Visit:</b> 1=NCQA defined well visit, 0=no NCQA well visit
	<b>Risky Behavior (R<sup>2</sup>=.04)</b>	<b>Sexual Activity (R<sup>2</sup>=.09)</b>	<b>Diet and Exercise (R<sup>2</sup>=.06)</b>	<b>Emotional Health (R<sup>2</sup>=.03)</b>	<b>Private, Confidential Care (R<sup>2</sup>=.16)</b>	<b>CAHPS®: Experience of Care (R<sup>2</sup>=.14)</b>	
Constant	22.7	44.15	63.68	26.63	79.55	80.50	
Age	B = 3.34 p = .02	B = -9.70 p = .000	B = 5.51 p = .01	B = 5.72 p = .71	B = -18.41 p = .000	B = 2.74 p = .02	
Gender	B = -2.47 p = .09	B = 12.88 p = .000	B = -.35 p = .87	B = 2.78 p = .06	B = 6.75 p = .003	B = -3.00 p = .008	
African American	B = 5.62 p = .02	B = 16.25 p = .000	B = 9.2 p = .01	B = 4.53 p = .08	B = 10.27 p = .01	B = -.10 p = .96	
Hispanic	B = -2.22 p = .34	B = 2.99 p = .40	B = 5.5 p = .12	B = -1.25 p = .61	B = -3.23 p = .39	B = -2.27 p = .21	
Asian	B = -1.92 p = .39	B = -2.17 p = .53	B = -2.66 p = .44	B = -5.62 p = .02	B = -16.46 p = .000	B = -10.49 p = .000	
Payer	B = -1.71 p = .34	B = -.32 p = .91	B = -9.90 p = .000	B = -.145 p = .94	B = -11.33 p = .000	B = -1.05 p = .45	
Mode	B = -8.68 p = .000	B = 15.49 p = .000	B = -15.50 p = .000	B = -7.74 p = .000	B = -17.79 p = .000	B = -9.48 p = .000	
Type of Visit	B = -2.09 p = .24	B = -9.4 p = .001	B = -8.12 p = .03	B = -2.36 p = .20	B = -9.6 p = .001	B = .73 p = .60	

# Implications for Policy, Delivery and Practice

Results of this study indicate that there **are significant opportunities for improvement** in performance in the area of adolescent preventive counseling and screening.

**Key lessons learned for improving quality** include:

- 1. Ensure confidential care:** Educating adolescents about places they can get health care services without their parents knowing about it can increase the probability that teens will seek and receive private care.
- 2. Ensure private visits:** Teens having private time with providers are more likely to get preventive counseling and screening
- 3. Educate Providers:** Results indicate that providers may systematically target preventive counseling and screening to certain types of adolescents according to their age, gender, racial affiliation, socioeconomic or risk behavior status. As such, encouraging providers not to counsel and screen on a selective basis may result in improvements in care.
- 4. Encourage Proactive Communication:** Providers should be encouraged to both elicit and listen carefully to teens' concerns and questions.
- 5. Encourage Opportunistic Counseling:** Preventive counseling and screening are not more likely to occur in the context of a HEDIS® well visit, but often occur during other health care visits, perhaps on an opportunistic basis. As such, rates of well visits are not an appropriate indicator of provision of adolescent preventive screening and counseling services.

The YAHCS is strongly aligned with adolescent preventive care guidelines set forth by the American Medical Association, the American Academy of Pediatrics and the Maternal and Child Health Bureau as well as with the Healthy People 2010 goals and objectives. Improved performance on the YAHCS quality measures can be used to **indicate the level of adherence** to guidelines and **progress** toward meeting the nation's **Healthy People 2010 goals**.

The YAHCS **meets criteria allowing it to be used for performance comparison** and we encourage its use in evaluating national initiatives such as the State Child Health Insurance Program and the performance of local health care plans and clinics.

The YAHCS may be used as part of a broader strategy for **educating and empowering adolescents** within the health care system.

## Future Work

Through the Child and Adolescent Health Measurement Initiative, FACCT—The Foundation for Accountability, is currently fielding the YAHCS in the State of Washington to teen Medicaid clients. These field trials will provide additional testing of the measure in a defined geographic region, across five health plans, and will give further insight to the utility of the YAHCS for Medicaid/SCHIP evaluation purposes.

The YAHCS is currently being formatted for on-line data collection as part of a broader FACCT teen health education and quality assessment initiative. Evaluation of this application will take place throughout 2000-2001.

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