

South Norfolk Adult Clinic

*Chesapeake Health Department
(1988 to present)*

Chesapeake, Virginia

October 19, 2004

Overview



- Definitions and Description of Problem
- Timeline
- Description of Adult Clinic
 - Mission and Goals
 - Eligibility and Discharge
 - Profile of Patients
 - Profile of Clinic Operations
- Cost vs. Value of Clinic
 - Short-term vs. Long-term value
- Outcome vs. Process Measures
- Conclusions

Introduction

- As the population ages, chronic diseases continue to increase in frequency, and cost.
 - Heart disease, Strokes, Cancer, Diabetes top the list
- The population of Uninsured/Uninsurable Americans continues to grow
 - Now estimated at approximately 15-17% of the population, or 45-50 million Americans
 - No private or public insurance (Medicare/Medicaid)

Prevalence and Cost of Chronic Diseases

(CDC, "Study on the Cost of Diabetes", 1998)

Disease	Est. Annual Prevalence	Est. Nat'l Cost (\$billions)	Annual Cost per person	Estimated # of Chesapeake Citizens in 2004	Est. Costs to Chesapeake (adjusted 2004)
CV disease	56 million (19%)	\$128 billion	\$2,730	39,298	\$ 107 million
Cancer	10 million (3.4%)	\$104 billion	\$12,418	7018	\$ 87 million
Diabetes	16 million (5.4%)	\$92 billion	\$6,866	11,228	\$ 77 million
Arthritis	40 million (13.6%)	\$65 billion	\$1,940	28,070	\$ 54 million
HTN	28.7 million (9.7%)	\$ 120 billion	\$4,435	43,067	\$ 191 million
Depression	17.4 million (5.9%)	\$44 billion	\$3,020	12,211	\$ 37 million
Stroke	3 million (1.0%)	\$ 30 billion	\$11,941	2105	\$ 25 million

**CDC national cost estimates include direct and indirect costs for total population

Estimated Uninsured in Chesapeake

	% in Virginia	% in Chesapeake	Estimated # in Chesapeake
Overweight or Obese (2000 BRFSS)	56.1%	60%	123,997
Diabetes	5%	6%	12,400
Hypertension	25.4%	20.8%	43,069
Uninsured (2001 –VA Healthcare Foundation)	14.9%	13.1%	27,073 (2002, City Planning)
Uninsured and Diabetes	0.8% (estimated)	0.6%	1136
Uninsured and Hypertension	3.8% (estimated)	2.7%	5642

**Virginia Population estimate (2002) = 7,293,848

**Chesapeake Population estimate (2002) = 206,661

Description of Problem In Chesapeake

- Approximately **27,073** uninsured citizens
- Approximately **5642** uninsured with HTN
 - Estimated Cost of Uninsured w/ HTN is **\$23.5 million** (\$4435/person x 5642)
- Approximately **1136** uninsured with Diabetes
 - Estimated Cost of Uninsured w/ Diabetes is **\$6.5 million** (\$6866/person x 1136)

**These cost rates estimated based CDC National Cost estimates, slide 4

The Implemented Solution

- The Adult Clinic was established (1988-present) to provide **access to ongoing CHRONIC care services to uninsured/uninsurable through a team-oriented, holistic approach** - to prevent complications, disability and death, and to reduce the direct and indirect costs/effects to society of these negative outcomes.
- The Adult Clinic was **NOT established to provide ACUTE care services**

Timeline

- **1988** – Mayor's Poverty Task Force identified need for adult general medical clinic and City Council allocated money
- **Nov, 1988** – Dedicated at 2709 Campostella Rd
- **Jan, 1989** – Clinic opened for service (NP, RN, CAN, and Lab Tech)
- **1991** – FT Physician hired
- **Nov, 1994** – South Norfolk designated Primary Care Professional Shortage Area

Timeline Cont'd

- **June, 1995** – Moved to 490 Liberty Street, Merged with State funded health services to form the South Norfolk Health Center
- **Jan, 1997** – Award Virginia Health Care Foundation Grant to obtain access to Pharmacy Connection Program
- **Jan, 2002** – All patients with health insurance (Medicaid, Medicare, etc) were discharged and referred to private providers – 123 patients d/ced, waiting list abolished and 211 new patients admitted
- **Present** – Clinic continues to expand and accept more patients annually as the budget and staffing allow

Mission and Goals

- Provide basic health care to the chronically ill - uninsured adults with no other resource for outpatient care
- Clients with chronic conditions only
- Improve health outcomes through health promotion and treatment, increased access to care, and encouraging patient responsibility – to stabilize chronic diseases
- Provide medications to patients who meet criteria
- Services include diagnosis, treatment, medications, referrals, and health teaching
- Adhere to high-quality, national clinical standards of care for chronic diseases

Eligibility Criteria

- Chesapeake Resident, 18 yrs or older
- No medical insurance that covers physician visits (ineligible for Medicare/Medicaid)
- Has a chronic medical condition requiring frequent follow-up
- Does not have a physician or source of primary care

Discharge Guidelines

- Moves out of Chesapeake
- Becomes eligible for Medicare/Medicaid or other insurance that covers chronic care
- Behaves in a threatening or coercive manner
- Refuses to provide accurate financial information
- Obtains private physician or source of primary Care

Profile of Current Patients



We will review the following:

- 1. Patient demographics
- 2. Encounter types
- 3. Benchmarks

1. Patient Demographics

- Average Age = 53.8 yrs
 - 88% are 35-64 yrs old
- Gender distribution is:
 - 76% female, 24% Male
- Racial Distribution is diverse
 - 71% Black, 26% White, 2% Asian, 1% Indian

Adult Clinic - Services Provided



- Provide Physical Examinations
- Education and Health Counseling
- Laboratory Work (On-site lab)
- Some Labs provided through CGH Grant
- EKG's as needed
- Easy Access to other Public Health Services (Immunizations, STD, FP, etc)

Adult Clinic – Penetrance of Uninsured in Chesapeake with Chronic Disease

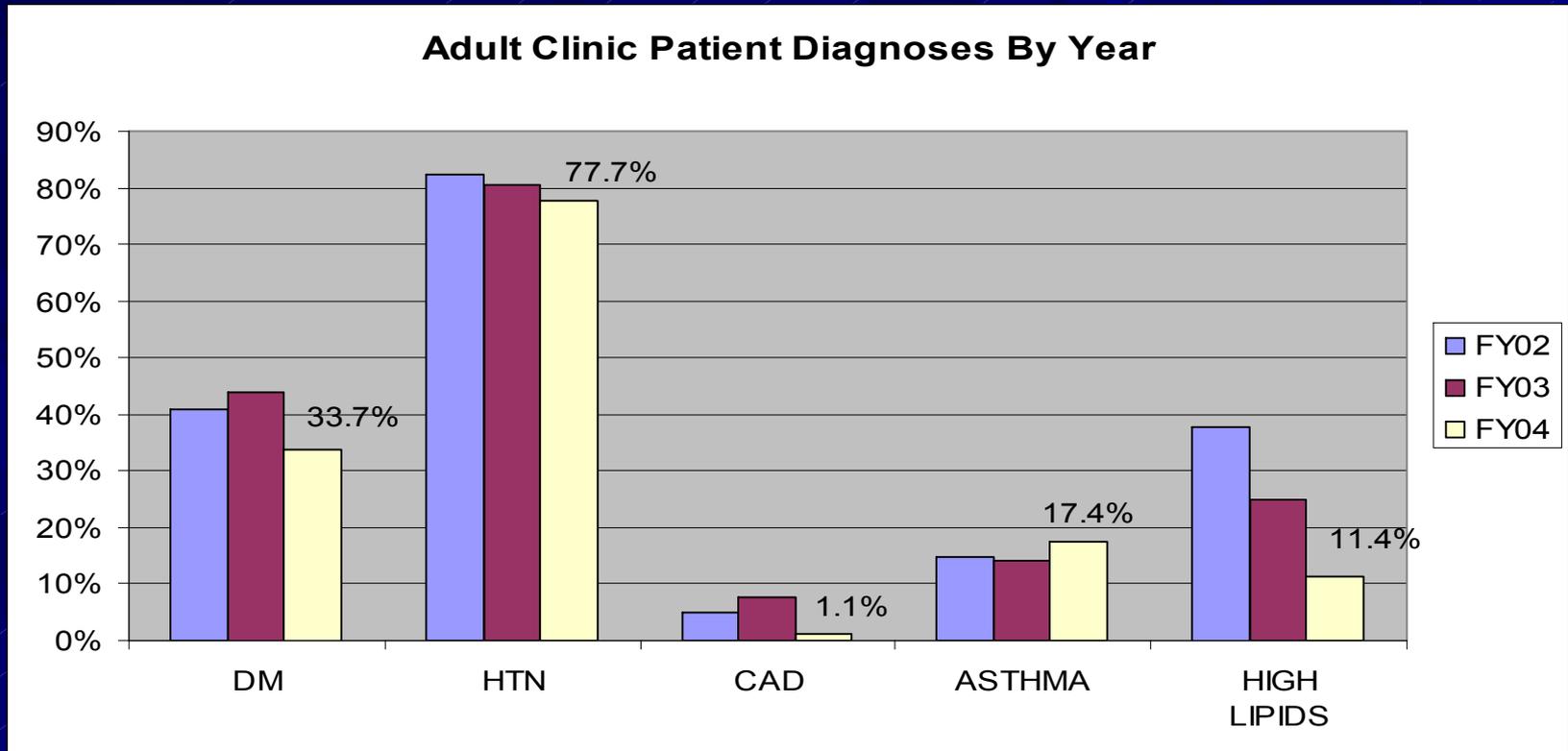
■ Penetrance of Adult Clinic(FY'04)

Current Patients:

- **501** patients w/ HTN ($501/5642$ or **8.9%** of uninsured w/ HTN)
- **217** patients w/ DM ($217/1136$ or **19.1%** of uninsured w/ DM)

- In Chesapeake an estimated 5141 (**91.1%**) are uninsured w/ HTN, and 919 (**80.9%**) are uninsured w/ DM and w/ **LIMITED ACCESS TO CARE**

Profile of Illnesses



■ The most common chronic diseases managed by the Adult Clinic are HTN, diabetes, high cholesterol, and asthma

- 77.7% of Adult Clinic Patients have Hypertension (high blood pressure) (FY'04)
- 33.7% have Diabetes Mellitus (high blood sugar) (FY'04)

Encounters – FY'04

(Unduplicated Patients =645)

	Numbers Performed	Average # per Patient per yr	Annual Value (Medicaid rates)	Average Value per Patient
Visits – New	186	1.00	\$ 14,417.00	\$ 77.51
Visits - Established	2714	4.21	\$ 62,177.90	\$ 96.40
Counseling/ Education	340	0.53	\$ 68, 024.28	\$ 105.46
Total Visits – Unduplicated	4197	6.51	\$11,076.70	\$ 17.17
Labs	6632	10.3	\$ 6,586.80	\$ 10.21
Procedures	2252	3.49	\$6,242.20	\$14.85
Medicaid Value of screening			\$ 179,835.79	\$278.82

Comparison to Benchmarks

- **Diabetes Standard of Care** (<http://www.vdh.state.va.us/lhd/lenowisco/diabstand.html>)
 - Office Visits at least 2-4 times per year (based on severity)
 - Goal HemoglobinA1C <8.0% - lab done every 3 months
 - On-going complications screening
 - BP < 135/85
- **Adult Clinic strives to conform to these standards**
 - Ave visits per patient = 4.5
 - Provide medications based on need to improve compliance (drug costs are often a barrier to care)
 - Screening performed for heart disease, kidney disease, eye disease, etc

Cost Impact of Chronic Disease

■ Hypertension

- Every 10 mm Hg decrease in Systolic BP, relates to a **12%** decrease in Complications
(http://www.ncqa.org/sohc2002/SOHC_2002_CDIAB.html)
- Controlling BP, Reduces Complications and Costs (**54%** of costs related to complications) (Federal register/ Vol. 69, No. 77, p. 21546)

■ Diabetes

- Reducing HgA1C by 1.0% decreases risk of complications by **40%** (\$24.6 billion – annual cost of complications)
(<http://www.hhs.gov/news/press/2003pres/20030227a.html>)
- Chesapeake average annual cost of diabetes complications of uninsured is **\$2863 per person, or \$ 3.3 million** (for estimated 1136 uninsured w/ DM) (<http://www.hhs.gov/news/press/2003pres/20030227a.html>)

What does it take to make this happen ?

- Team – oriented approach
 - Office Staff
 - Support Staff
 - Clinical Staff
- Pharmacy Connection
 - Free/low-cost meds to our patients
 - Improves Compliance
- Holistic Public Health Approach
 - Partners in Chronic Disease Care
 - Focus on Prevention
 - Education/Counseling



Profile of Adult Clinic Staff - City



- 14.0 FTE's – City funded service
 - FT Physician (1)
 - FT Nurse Practitioner (1)
 - Nursing Supervisor (1)
 - Registered Nurses (3)
 - Nursing Assistant (1)
 - Lab Techs – PT and FT (1.5)
 - Program Support (1)
 - Fiscal Assistant (1.5)
 - Clerks (3)
- Pharmacy Connection, Medical records, Patient Processing

Profile of Adult Clinic Staff - State

- 10.5 FTE's – State Funded Services
 - Nurse Practitioner (1)
 - Registered Nurses (2)
 - Nursing Assistants (2)
 - Clerks (3)
 - WIC employees (2.5)
 - Nutritionists – FT and PT (1.5)
 - Clerk (1)

Outcome measures vs. Process measures

- Outcomes measure effectiveness
 - Hospitalization rates, etc.
- Process measures efficiency
 - #s seen, time spent etc

Outcome Measures

■ General

- Reduced Hospitalization Rates
- Reduced ER Visits

■ Diabetes

- Reduction of Hemoglobin A1C
 - 1% drop reduces complications 40%

■ Hypertension

- Decreased Systolic and Diastolic Pressures

Effect on Hospitalization

- Hospitalization for Adult Clinic patients decreased after Admittance (FY'02-03) from an average of 1.05 hospital days/patient (before admittance) to 0.77 hospital days/patient (after admittance) (**a decrease of 26.3%**)

**provided by CGH IT

- Cost of an Average Inpatient Hospital day = **\$1911.85 per patient** (adjusted to 2004) **www.mass.gov/dhcfp/pages/pdf/hmo_2004.pdf

- Estimated **\$ 345,280 saved** due to lower hospitalization rates. Annual hospitalization Cost of Adult Clinic patients before admittance = \$1,294,800, and after admittance = \$949,520.

Evaluation of CGH hospitalization by Adult Clinic Patients

- Group selected if admitted to adult clinic in FY'02-03, and randomly selected 100 patients
- Looked at all visits for this group (25% had been hospitalized at least once)
- We calculated average LOS before/after starting adult clinic. Hypothesis: there would be a decrease in hospitalization (increased access to care)

	Hospital Days per year	Average Length of Stay per hospital stay	Ave Hosp Days per AC Patient	Society Cost of hospitalization
Before Adult Clinic	104.7	4.19	1.05	\$ 1,294,800
After Adult Clinic	77.2	3.09	0.77	\$ 949,520
Ave Cost Saved per yr by decreasing hospitalization				\$345,280

**Society Cost calculated = (Ave Hosp days/Pt) x (Total # pts is 645) x (Ave Cost per Hospital Day is \$1911.85 per day)

- **CONCLUSION:** Adult Clinic Care decreases hospitalization and subsequent costs

Percentage of Patients Hospitalized each year and Average Cost

	Adult Clinic patients hosp. per year	Average LOS (length of stay)	Average cost per hospitalization
FY'00	18.1% (76/420)	5.5 days	\$ 10,515.18
FY'01	30.8% (130/422)	5.8 days	\$ 11,088.73
FY'02	34.1% (171/501)	5.9 days	\$ 11,279.92
FY'03	33.9% (168/495)	5.7 days	\$10,897.55
FY'04	22.8% (147/645)	6.5 days	\$ 12,427.03

Evaluation of CGH E.R. Visits by Adult Clinic Patients

- Group selected if admitted to adult clinic in FY'02-03, and randomly selected 100 patients
- Looked at all visits for this group (56% had been to the ER at least once)
- We calculated average # ER visits before/after starting adult clinic. Hypothesis: there would be a decrease in Average ER visits (increased access to care)

	Total Visits to ER	# Patients seen	Average visits/pt	Society Cost of ER Visits
FY'00	18	12	1.5	\$ 73,735.20
FY'01	51	39	1.31	\$ 64,702.05
FY'02	45	52	0.87	\$ 51,014.22
FY'03	48	56	0.86	\$ 49,823.93
FY'04	35	51	0.69	\$ 52,088.65
Before Adult Clinic	71	56	1.26	\$ 73,440.26 (average)
After Adult Clinic	40	56	0.71	\$ 41341.45 (average)
Ave Cost Saved per yr by decreasing ER Visits				\$32,098.81

** Cost of ER Visits = (total #pts) x (56%) x (Ave visits/pt) x (Ave ER Cost), Average ER Cost= \$209
(<http://content.nejm.org/cgi/content/short/334/10/642>)

Average Hemoglobin A1C over Two Years of Care

	Tests performed	Hgb A1C Value	% Change from initial	Compliance
Initial test	85	9.4	-	100%
2-4 months	26	9.2	-2.5%	31%
5-7 months	40	8.2	-13.7%	47%
8-10 months	32	8.8	-6.3%	38%
11-13 months	22	8.8	-6.6%	26%
14-16 months	5	8.6	-8.5%	6%
17-19 months	9	8.0	-15.3%	11%
20-22 months	7	8.5	-10.0%	8%
23-24 months	5	8.3	11.9%	6%

Decreasing Hemoglobin A1C = Cost Savings

- Average Hemoglobin A1C decreased:
 - From 9.4% to 8.8% in one year
 - From 9.4% to 8.3% in two years
 - Average Annual Decrease is **0.55% (relates to an estimated 22% decrease in Complications)**
- Annual Estimated Cost of Uninsured Diabetes Complications in Chesapeake is \$3.3 million
- This Decrease in Hemoglobin A1C can be related to an estimated **\$136,700 savings** from decreased complications of Adult Clinic Patients receiving Diabetes Care

**Savings from decreased complications = (cost of complications/person is \$2863) x (#DM pts is 217) x 22%

(<http://www.hhs.gov/news/press/2003pres/20030227a.html>)

Adult Clinic Effect on HTN

- Average decrease in Systolic Blood Pressure was **4.32 mm Hg** from 2001-2003 (J Andrews, SNHC Practicum Project, 2004, p.12)
 - 10 mm Hg reduction represents a 12% decrease in Complications
- Cost of uninsured HTN Complications in Chesapeake is an estimated **\$2395 per person**, or \$13.5 million, **\$1.2 million** for adult clinic patients. ** \$2395/person = (54% x \$4435/person)
- This 4.32 mm Hg decrease represents a **5.2% decrease** in Complications for an estimated savings of **\$62,200** (5.2% decrease of \$1.2 million) to Chesapeake for Adult Clinic Patients

**Savings from decreased complications = (cost of complications/person is \$2395) x (# HTN pts is 501) x 5.2%

Process Measures

■ Adult Clinic

- Ave Encounters per Day = 16.8
- Total Annual Encounters = 4197
- Exams performed = 2900 (Ave of 4.5 visits/pt)
- Education sessions per patient = 340
- Staff to patient ratio = $(645/14.0) = 46.1$

Cost of Program

Expenses

Salaries, wages, Sick Pay	\$ 276,677.00
PT Salaries	\$ 44,055.00
FICA	\$ 25, 315.00
VRS	\$ 42, 193.00
Group Insurance	\$ 33,300.00
Contractual Services	\$ 5,000.00
Temporary Help Services	\$ 129,396.00
Medical & Lab Supplies	\$ 76, 175
IT	\$ 4,829.39
Self Insurance	\$ 2,315.00
Postage, Freight	\$ 3,500
Dues, memberships	\$ 2,500.00
Office Supplies	\$ 3,000.00
Miscellaneous	\$ 6,973.91

TOTAL EXPENSES

\$ 655,229.30

Cost Comparison

- FY'04 Unduplicated Patients =645
 - Average Age = 53.8 yrs
- Ave spent per Patient = **\$1,015.86**
 - No hospitalization coverage, but probable decrease in uninsured hospitalization rates
- Ave Cost of Private Insurance = **\$3,464.94**
 - Estimate based on local insurance provider rates for individual coverage/ Age 35-64 (www.anthem.com)

Direct Value of Program

DIRECT VALUE

Volunteer Hours	\$ 55,759.52
CGH Lab (\$120,000 for 15 months)	\$100,000.00
In-House Pharmacy (Retail Value) (Wholesale=\$295,016.70)	\$ 339,269.14
HUD Grant	\$100,000.00
Medical Screening (Medicaid Rates – historically < Market Value)	\$179,835.79
Additional revenues	\$ 39,542.38

GROSS VALUE \$ 814, 406.83

EXPENSES

Adult Clinic Budget Expenses \$ 655,229.30

NET VALUE (Value-Expenses)

DIRECT NET VALUE \$ 159,177.53

Return on Expenses 24.3%
(Net Value / Expenses)

Indirect Value of Program

INDIRECT VALUE (Quantifiable)

Diabetes Complication Cost Savings	\$ 136,700
Hypertension Complication Cost Savings	\$ 62,200
Hospitalization Rate Decrease – Cost Savings	\$ 345,280
Decreased ER Visits – Cost Savings	\$ 32,099
Reduced Disability - Saved Lost Wages **	\$ 271,600

Indirect Value

\$ 847,879

** Based on estimated \$3700 wages lost per person annually for decreased productivity secondary to complications of diabetes and hypertension
(www.ncqa.org/sohc2002/SOHC_2002_CDIAB.html)

- More difficult to quantify
 - Requires long-term data base maintenance
 - extensive chart review
- Decreased Complication Rate
- Decreased Hospitalization rate
- Less Expensive Care
- Lower Rate of Disability and Dependence

Overall Value

OVERALL VALUE

Direct Value	\$ 159,178
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Indirect Value	\$ 847,879
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Overall Value (above expenses)	\$ 1,007,057
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Return on Investment (\$655,229)	153.7%
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Conclusions

- The Adult Clinic is fulfilling its Mission and is effective in providing chronic care services to uninsured citizens of Chesapeake
- The Adult Clinic has reduced hospitalization rates, and emergency room visits, (and their subsequent costs)
- Data-driven decision-making is vital for the success of the Adult Clinic – Our outcomes show that our efforts are successful
- The Adult Clinic Provides Value to the City of Chesapeake (153.7% Return on Investment)
- The Adult Clinic has a Penetrance of 8.9-19.1% of the Uninsured, afflicted population of Chesapeake
- The Adult Clinic, in accordance with its Mission, should be expanded to provide clinic services to those who currently have NO ACCESS to care (approximately 6060 citizens)

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