dcpc

District of Columbia Primary Care Needs Assessment Study:

Quantitative Determinants of the need and demand for primary care in the District of Columbia, 1985-2004

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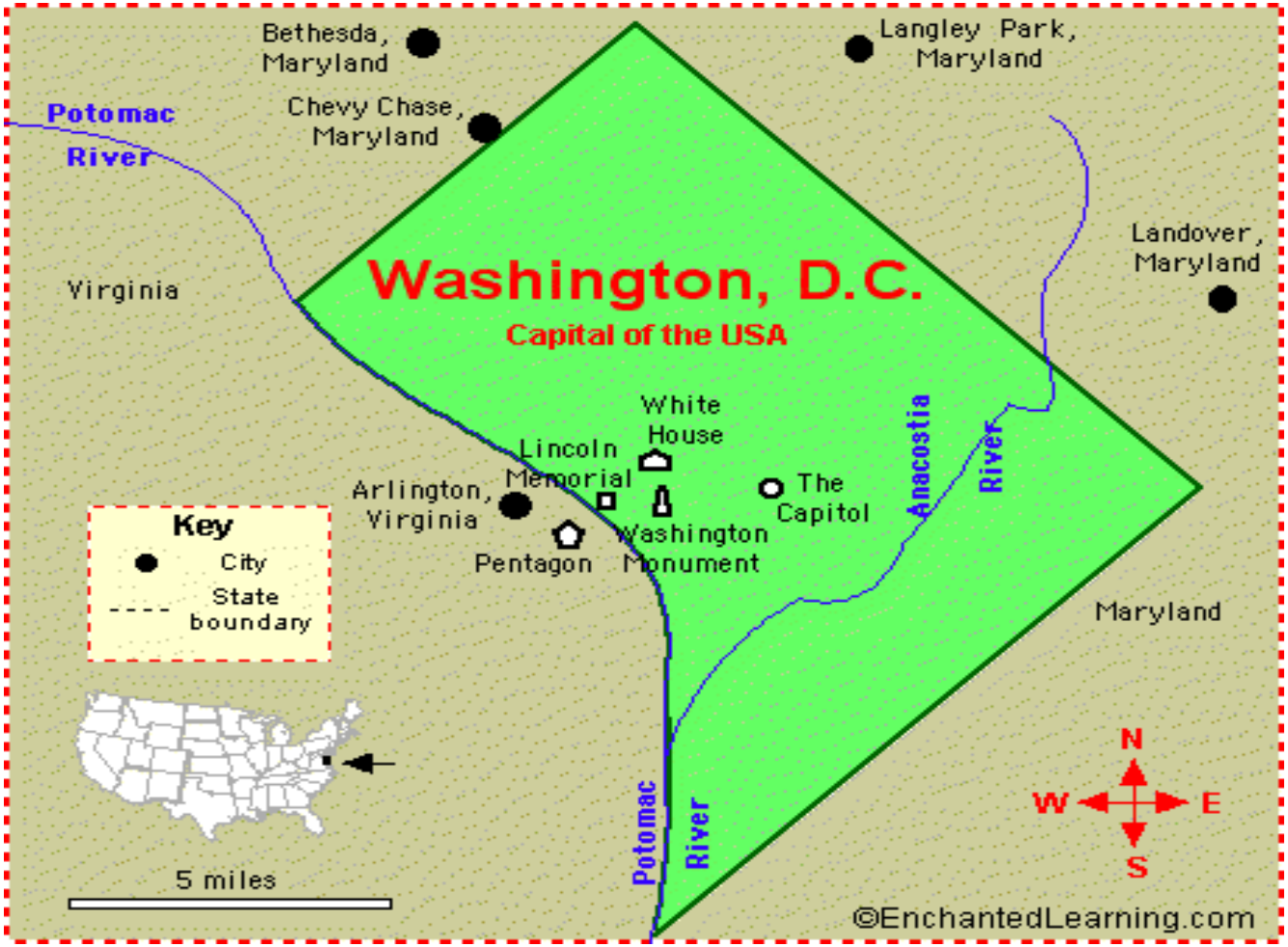
The nation's capital, Washington, D.C. a.k.a. the District of Columbia



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

dcpc:

"District of Columbia Primary Care Needs Assessment Methodology:

- Was commissioned in 1985 by Andrew D. McBride, MD, MPH, former Commissioner of Public Health, to inform the work of the Public Primary Care Task Force's work on the integration of the public primary care sectors

- Originally intended to be a comprehensive, quantitative assessment of the need, and demand, for primary care services in the District of Columbia for 1985-1990

- Developed by author into a 20-year study (1985 to 2005) spanning three discrete study periods: 1984-85, 1990-1992 and 2004-2005

- Uses a methodology originally developed by NYS Health Planning Commission for population-based needs assessment that is need/demand (not utilization) driven

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

dcpc:

Primary Care defined:

- **Primary Care Physicians** – Three groups are defined in this DCPC study – 1.General Primary Care Physicians (GPC); 2. Specialist Primary Care Physicians (SPC) and Specialists (S)
-
- GPC General Primary Care refers to all physicians of the following five specialties

- GP – General Practice
- FP – Family Practice
- OB/GYN Obstetrics/Gynaecology
- PED Paediatrics
- IM Internal Medicine.

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Objectives of the DCPC study:

- 1. To measure the level of physician supply and primary care services geographically available to satisfy the needs of District residents

- 2. To determine if available services were adequate to meet present and foreseeable future needs of the District

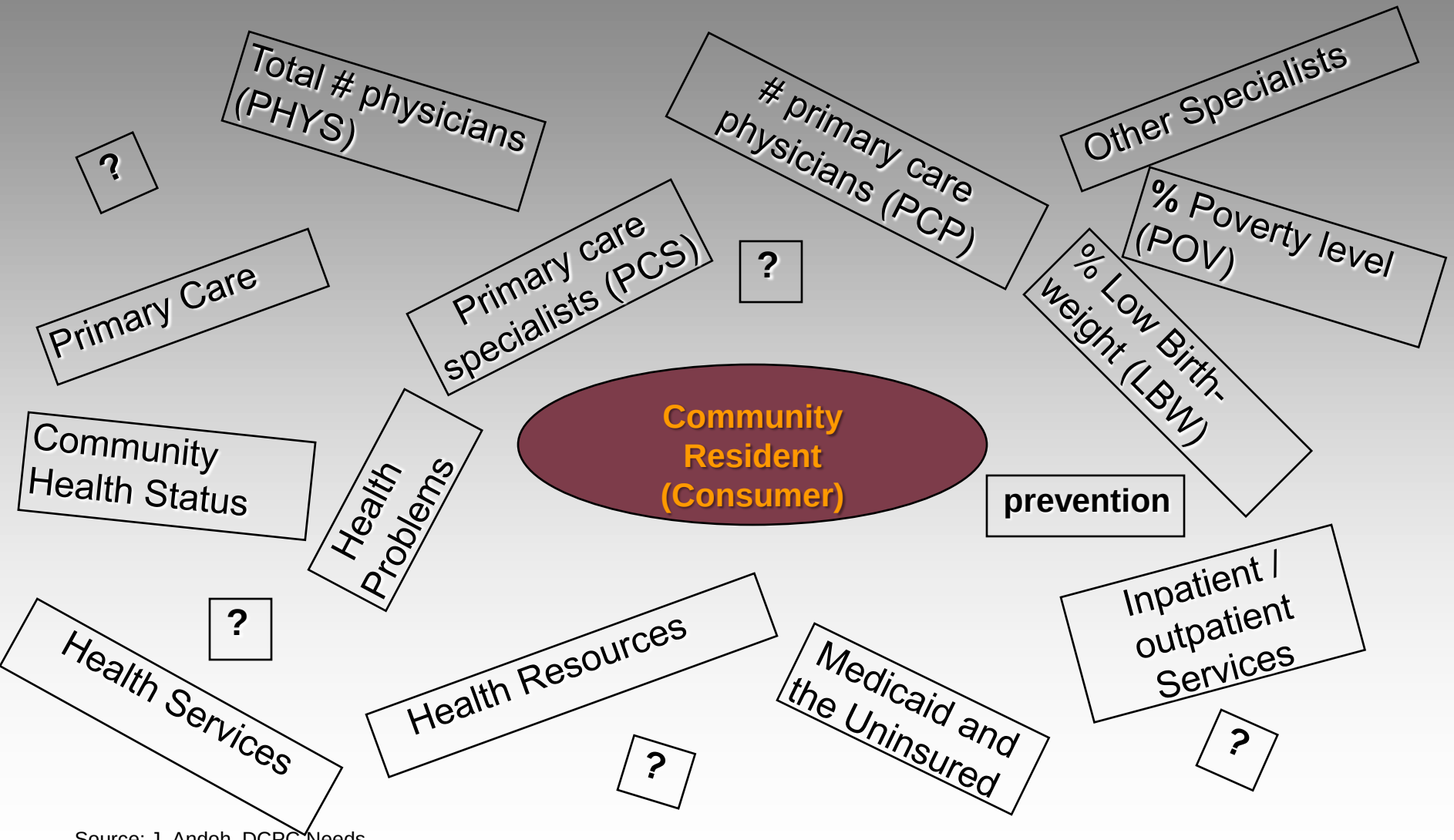
- 3. To provide baseline data to be used in the future for evaluating and planning for primary care resources and services in the District

LIMITATION:

The DCPC study did not specifically address issues of accessibility, affordability, costs or quality)

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

How best to determine need and demand for primary care in an urban community?



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

dcpc: Methodology

- The basic methodology (courtesy of NYS DOH/HPC) hinges on derivation of three statistical indices (or indexes):

1. PCSI – primary care service index: measure of access to physicians for residents of a small area (census tract)

2. CNS – composite need score: derived from data on populations with incomes below the federal poverty level (POV) and low birth-weight (LBW)

3. PCPS – primary care priority score: PCSI and CNS are statistically combined to create a new index, priority score, which provides an objective basis for need/demand assessment and primary care resource allocation

- DCPC methodology goes beyond the federal Health Manpower Shortage Area (HMSA) designation methodology. DCPC combines manpower availability with objective estimates of community need for primary care resources to generate primary care profiles for small areas

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Index #1: Primary Care Service Index:

PCSI – primary care service index: measure of access to physicians for residents of a small area (census tract)

$$PCSI = \frac{\text{Satisfied Visits}}{\text{Total Potential (“poor” + “non-poor”) Visits}}$$

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Index #2: Composite Need Score:

CNS composite need score, standardized to 100

CNS score = Rank (% population with incomes below the federal poverty level (POV))

+

Rank (% low birthweight (LBW))

Low CNS score (e.g.1) indicates high need

High CNS score (e.g. 100) indicates low need, relative to other census tracts (or Census Tract Groupings).

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Index #3: Primary Care Priority Score:

PCPS Primary Care Priority Score:

PCPS is a number (=1 or 2 or 3) **obtained by cross-tabulating PCSI and CNS values** for a small area (CT or CTG)

- **PCSI = 1 high need for primary care resources**
- = 2 moderate need
- = 3 low need

- *The primary care priority score provides an objective basis for making primary care resource allocation decisions.*

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Cross-tabulation of PCSI and CNS values to obtain Primary Care Priority Scores for a CTG

	PCSI				
	1 (very low satisfied visits)	2 (low satisfied visits)	3 (med satisfied visits)	4 (med high satisfied visits)	5 (high satisfied visits)
CNS					
1 (high need)	**1-HIGH**	**1-HIGH**	**2-MED**	**2-MED**	**2-MED**
2 (med high)	**1-HIGH**	**1-HIGH**	**2-MED**	**2-MED**	**2-MED**
3 (med low)	**2-MED**	**2-MED**	**2-MED**	**3-LOW**	**3-LOW**
4 (low need)	**2-MED**	**2-MED**	**2-MED**	**3-LOW**	**3-LOW**

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

TO DETERMINE PC SHORTAGE AREAS:

Estimates of Varying Physician Productivity

(Visits per Year for Areas with Different Physician Density Levels)

Source: NHIS; NCHS; NYS HPC, 1984

1 physician can generate ……

	PHYSICIAN DENSITY		
	LOW	**MEDIUM**	**HIGH**
Physician (Visits/Year):			
Primary Care Physicians	**8,226**	**5,795**	**4,714**
Other Physicians	**5,153**	**4,301**	**3,757**
FTEs:			
Primary Care Fraction of Practice:			
Primary Care Physicians	**1.0**	**1.0**	**1.0**
Other Physicians	**0.5**	**0.3**	**0.1**

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

1 Resident can make .....

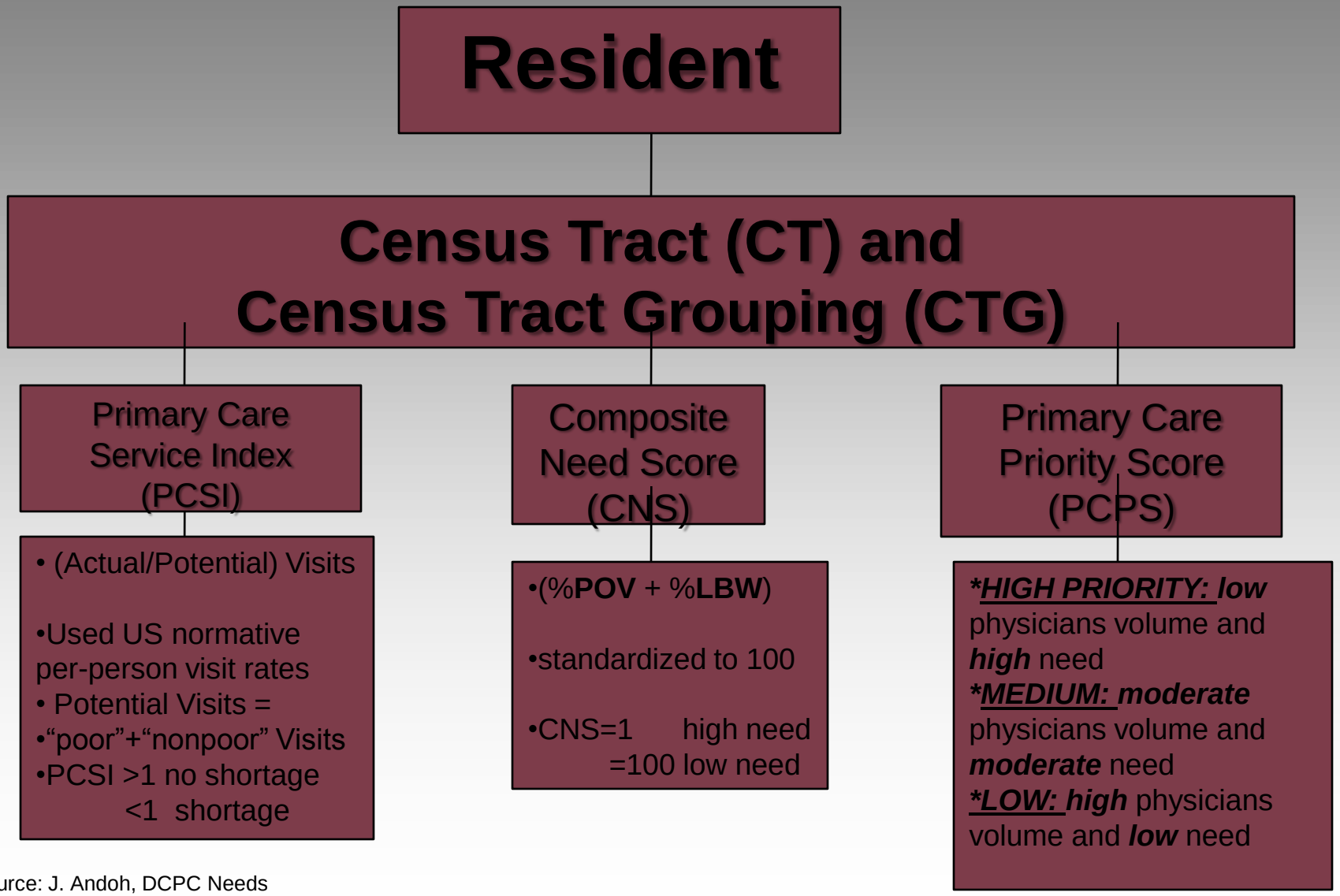
Est. Primary Care Physician Visits Per Person Per Year for Poor and Non-Poor Persons

Source: NHIS; NCHS; NYS HPC, 1984

	AGE: Under 15	15-44	45-64	65+
Primary Care Visits Per Person per Year:				
Non-Poor	**3.3**	**3.4**	**4.0**	**5.1**
Poor (Adjusted)	**4.2**	**6.0**	**11.1**	**8.1**

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

dcpc : Overview of the Methodology:



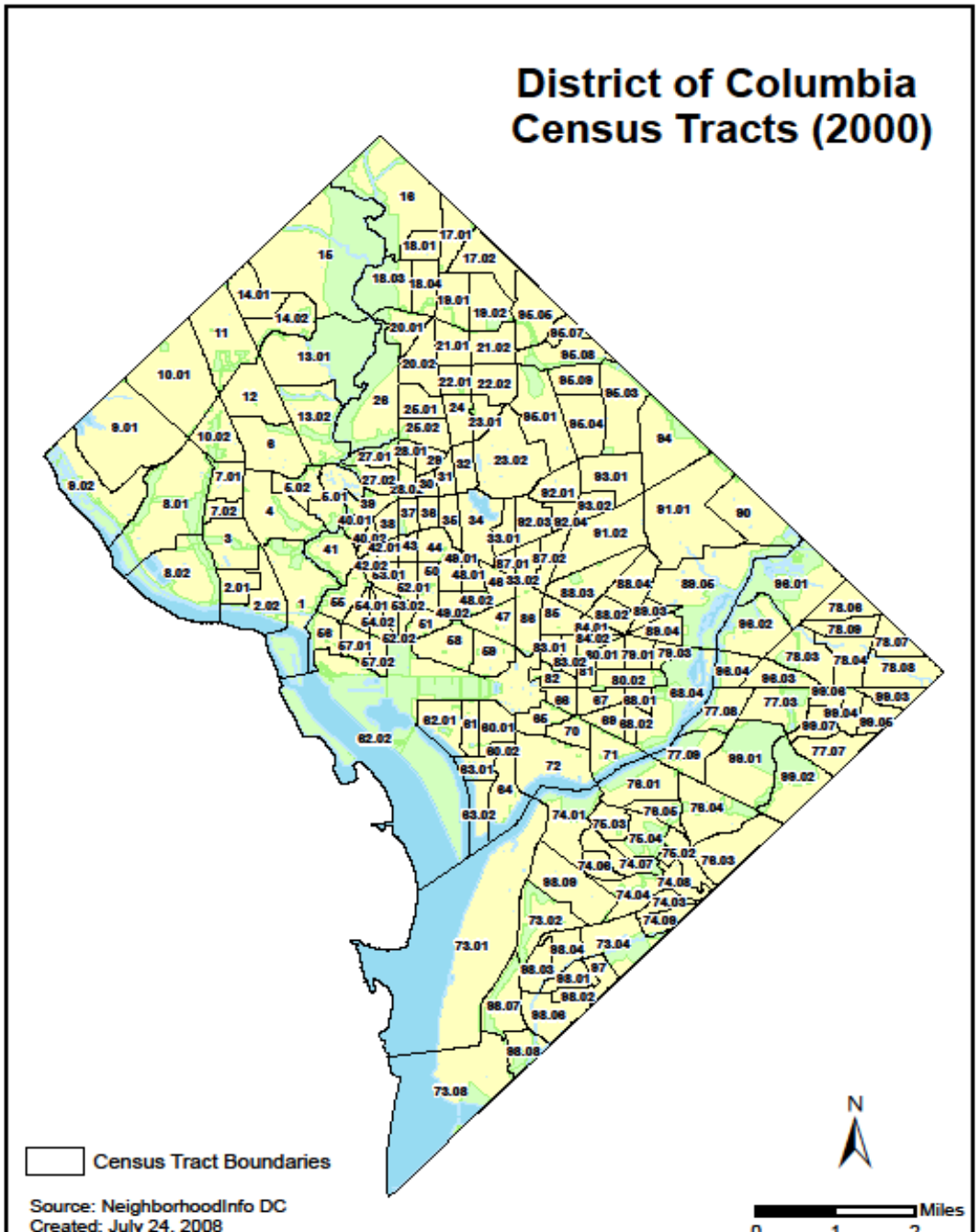
Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Study Terminology:

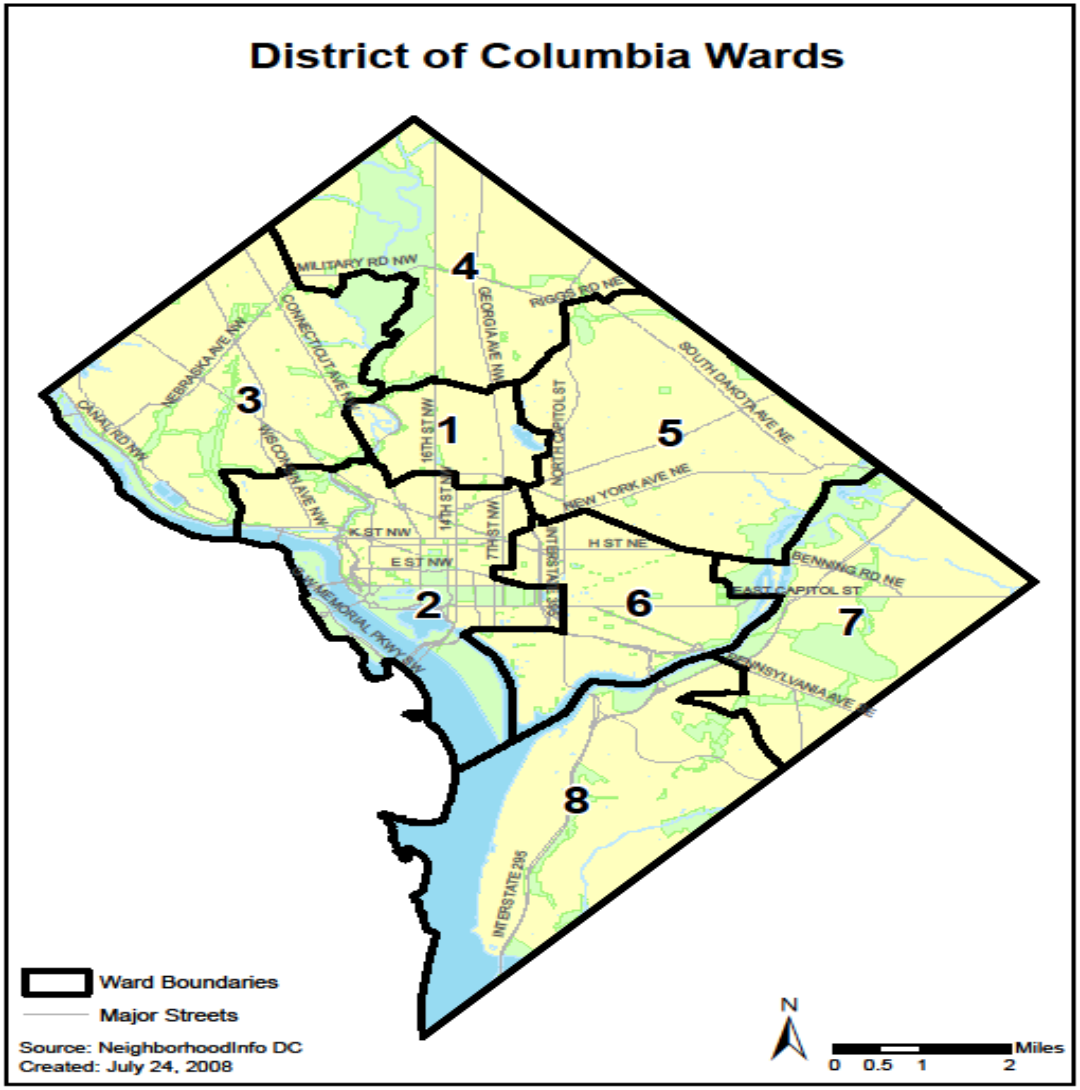
- *DC:* District of Columbia
- *DCPC:* District of Columbia Primary Care (Needs Assessment)
- *CT:* Census Tract
- *CTG:* Census Tract Grouping(s)
- *PCSI:* Primary Care Service Index
- *CNS:* Composite Need Score
- *PCPS:* Primary Care Priority Score
- *P.P.P.P.P.* "The Five P's" – major stakeholders in issues and discussions of primary care planning, organization, delivery and financing. They are the planners, policymakers, primary care practitioners/physicians, other providers, and the public.
- *HMSA:* Health Manpower Shortage Area
- *HPSA:* Health Professional Shortage Area
- *MUA:* Medically Underserved Area

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Census Tracts



DC City Council Wards



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

DCPC Results

Summary

Census tract Groupings (CTG)

The four variables used to define the 11 CTGs for the District of Columbia are as follows:

- Housing density
- Ethnic mix
- Access to community health facilities, and
- Identity (of the community)

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Derivation of the Census Tract Groupings (CTG) used in this study
Source: DCPC; DC CPH MCH; Koba Associates 1984

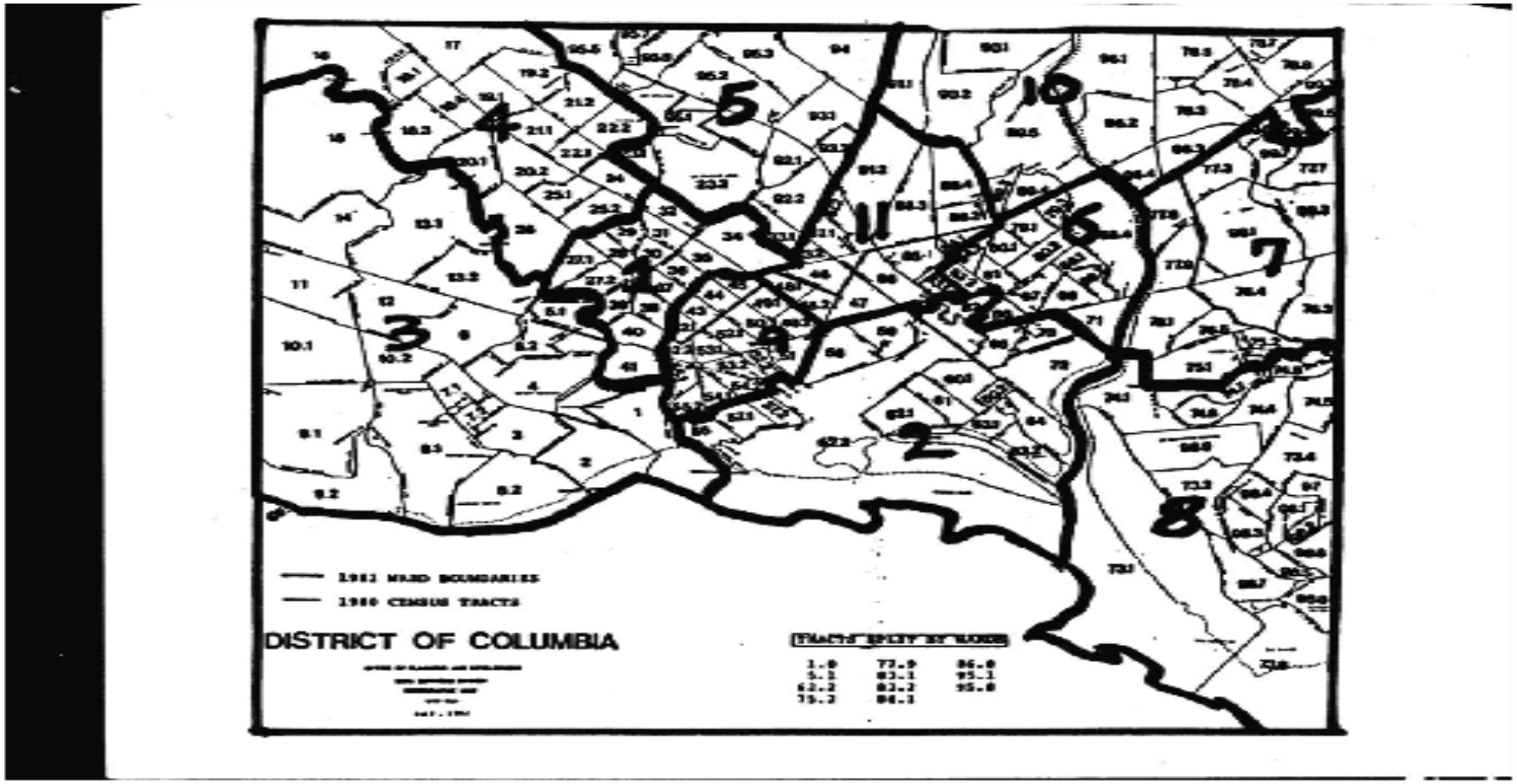
CTG	HOUSING DENSITY	ETHNIC MIX	ACCESS TO NHC	COMMUNITY DENTITY
1	HIGH	HISPANIC & OTHER	ADAMS MORGAN NHC	ADAMS MORGAN, WARD1
2	HIGH	MIXED	SOUTHWEST NHC	SW & ADJACENT
3	LOW	MAJORITY WHITE	NONE	WARD 3
4	LOW	MIXED	NONE	WARD 4
5	LOW-TO-MODERATE	BLACK, AGING	WOODRIDGE NHC	BROOKLAND/MICHIGAN PARK/ FORT TOTTEN
6	TOWNHOUSES	MIXED, BUT PREDOM. BLACK	CENTER 17, ARTHUR CAPPER NHC	CAPITOL HILL, WARD 6
7	MODERATE	BLACK	BENNING RD, EAST-OF-THE-RIVER	EAST-OF-THE-RIVER
8	HIGH	BLACK	ANACOSTIA NHC, CONGRESS HTS NHC	WARD 8/ANACOSTIA
9	HIGH	MIXED	"R" STREET NHC	DUPONT CIRCLE / SHAW
10	MEDIUM	BLACK	HUNT PLACE NHC, BENNING ROAD NHC	UPPER WARD 7, FAR NORTHEAST
11	HIGH	BL...	WALKER JONES NHC	LOWEST-INCOME

Component census tracts for each of the eleven DC Census Tract Groupings (CTGs) used in the DCPC Primary Care Needs Assessment Study, District of Columbia, 1985, 1992, 2004

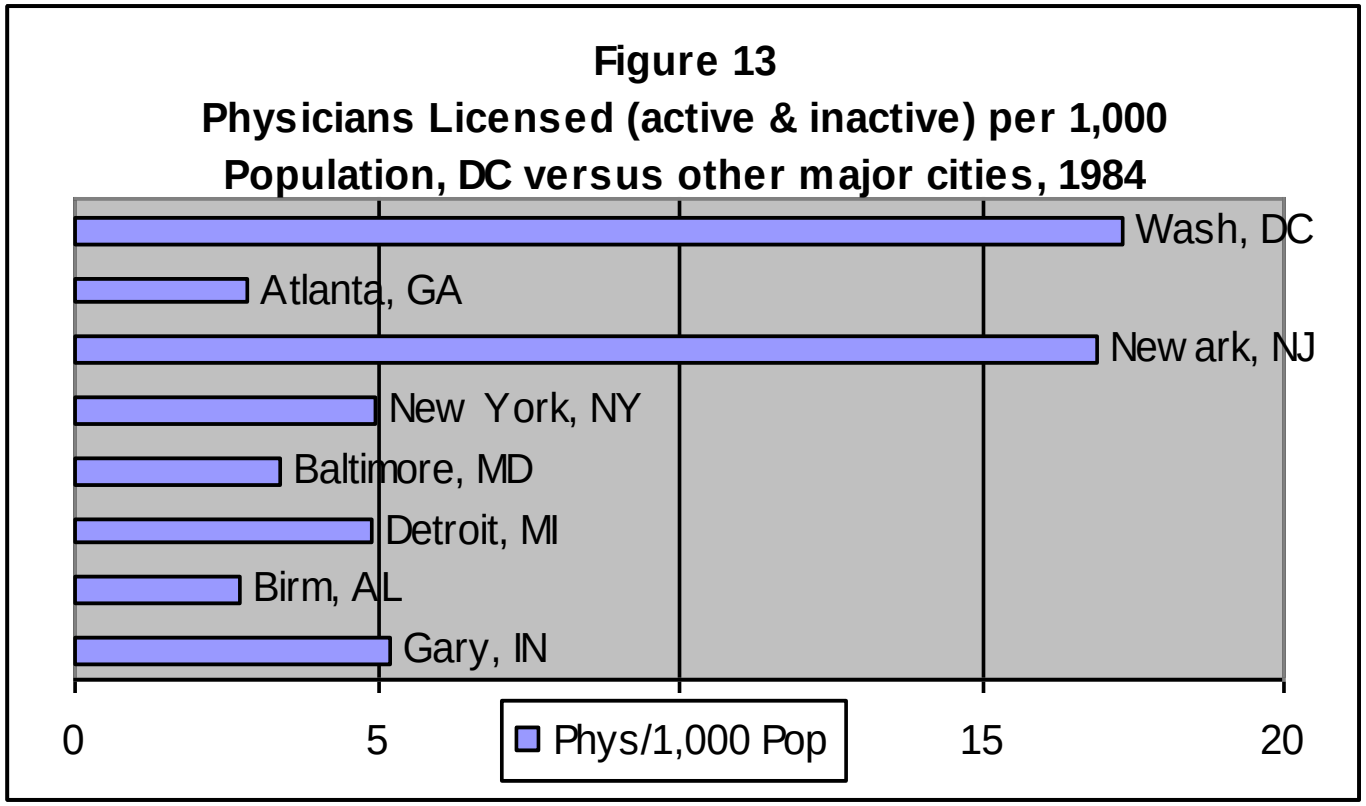
CTG	Component D.C. Census Tracts
1	29, 30, 31, 32, 34, 35, 36, 37, 38, 39, 41, 27.01, 27.02, 28.01, 28.02, 40.01, 40.02
2	56, 58, 59, 61, 64, 65, 70, 72, 82, 57.01, 60.01, 60.02, 62.01, 63.01, 63.02
3	1, 3, 4, 6, 11, 12, 15, 2.01, 2.02, 5.01, 5.02, 7.01, 7.02, 8.01, 8.02, 9.01, 9.02, 10.01, 10.02, 13.01, 13.02, 14.01, 14.02
4	16, 24, 26, 17.01, 17.02, 18.01, 18.02, 18.04, 19.01, 19.02, 20.01, 20.02, 21.01, 21.02, 22.01, 22.02, 25.01, 25.02
5	94, 23.01, 23.02, 33.01, 92.01, 92.03, 92.04, 93.01, 93.02, 95.01, 95.03, 95.04, 95.05, 95.07, 95.08, 95.09
6	66, 67, 69, 71, 81, 84.01, 68.01, 68.02, 68.04, 79.01, 79.03, 80.01, 80.02, 83.02
7	75.02, 75.03, 75.04, 76.01, 76.03, 76.04, 76.05, 77.03, 77.07, 77.08, 77.09, 99.01, 99.02, 99.05, 99.06, 99.07
8	97, 73.01, 73.02, 73.04, 73.08, 74.01, 74.03, 74.04, 74.05, 74.06, 74.07, 74.09, 98.01, 98.02, 98.03, 98.04, 98.06, 98.07, 98.08, 98.09
9	43, 44, 50, 51, 55, 42.01, 42.02, 49.01, 49.02, 52.01, 52.02, 53.01, 53.02, 54.01
10	00, 78.03, 78.04, 78.06, 78.07, 78.08. 78.09, 89.03, 89.04, 91.01, 96.01, 96.02, 96.03, 96.04, 99.03, 99.04
11	46, 47, 85, 86, 33.02, [illegible] 02, 83.01, 84.02, 87.01, 87.02, 88.02, 88.03, 88.04, 91.02

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

DC: Census Tract Groupings (CTG)

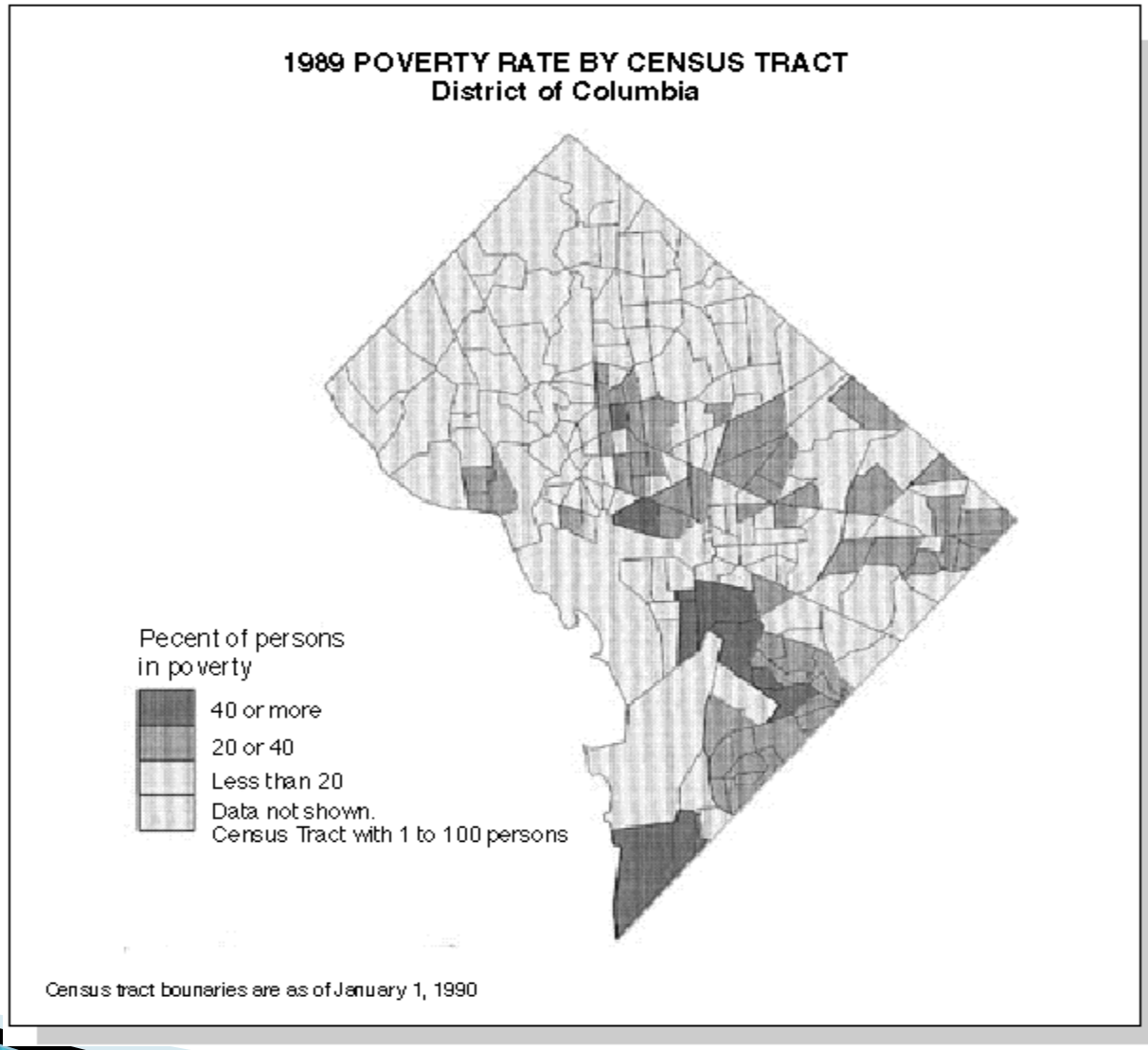


Baseline …. Comparing Physician Ratios per 1,000 population



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

DC Poverty Rates: By Census Tract Tract

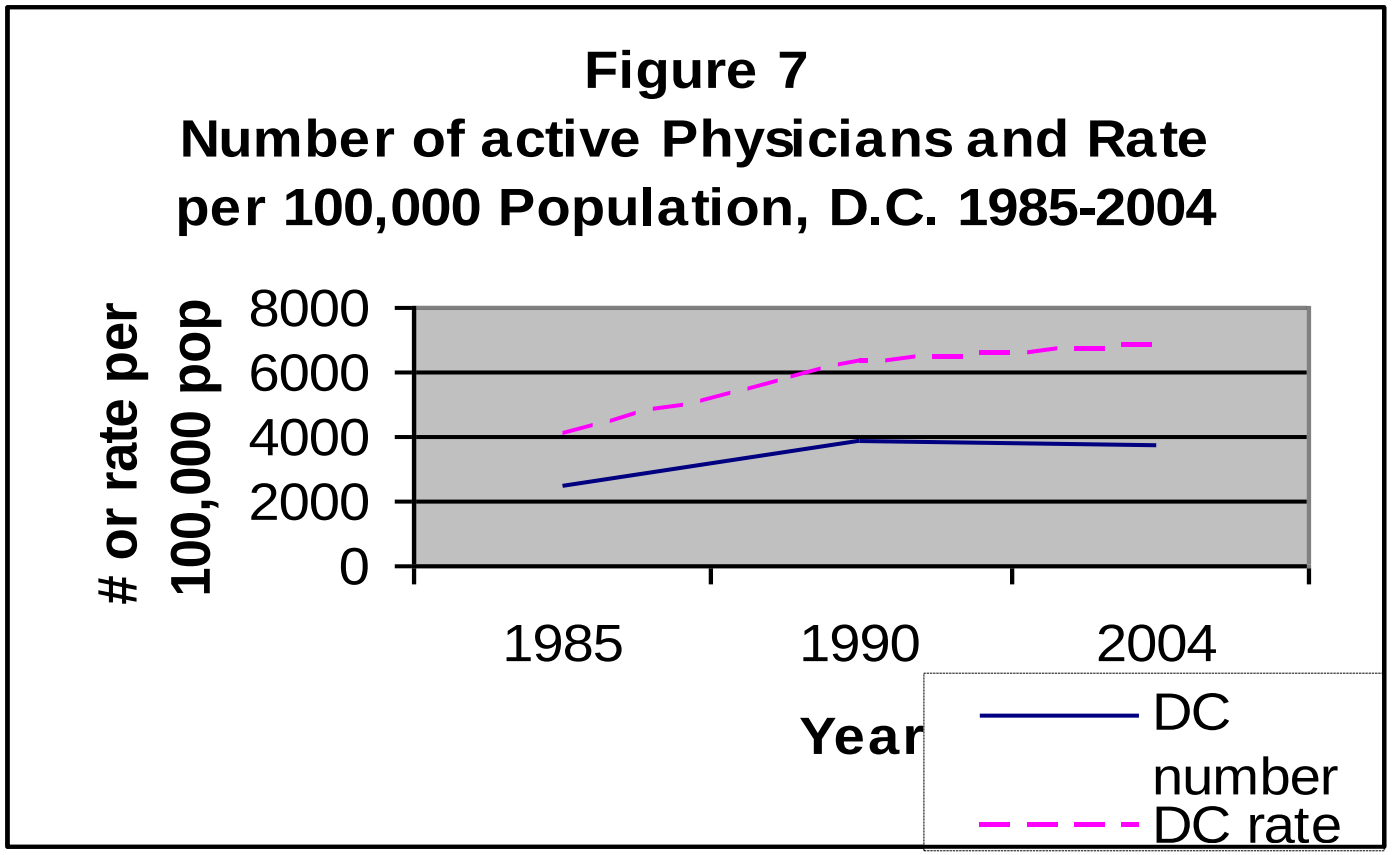


Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

1989	Poverty rate	Child poverty rate
DC	33% (188,514)	35%
2010		
DC	19.2% (109,423)	30%
Maryland	9.9%(557,140)	13%
Virginia	11.1%(861,969)	14%

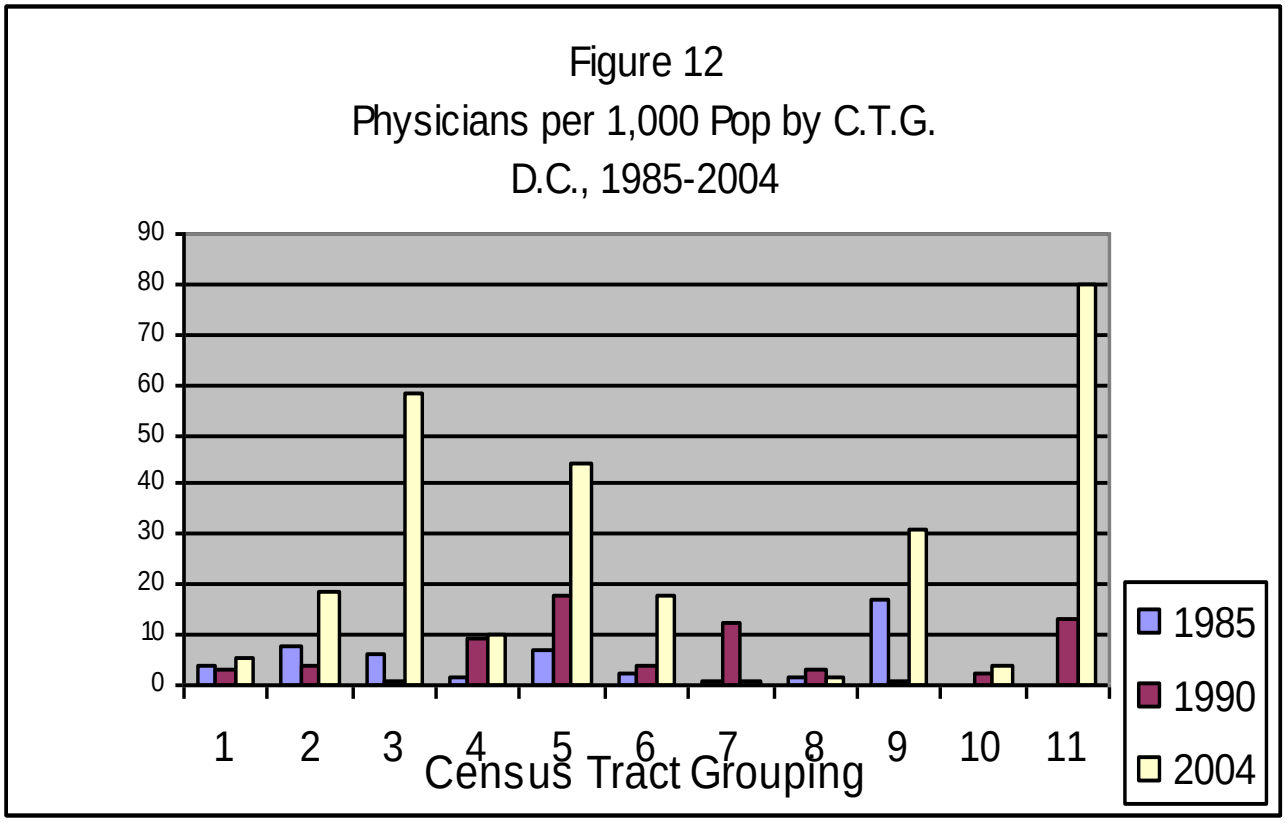
Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Active DC Physicians: #, rate per 100,000 population

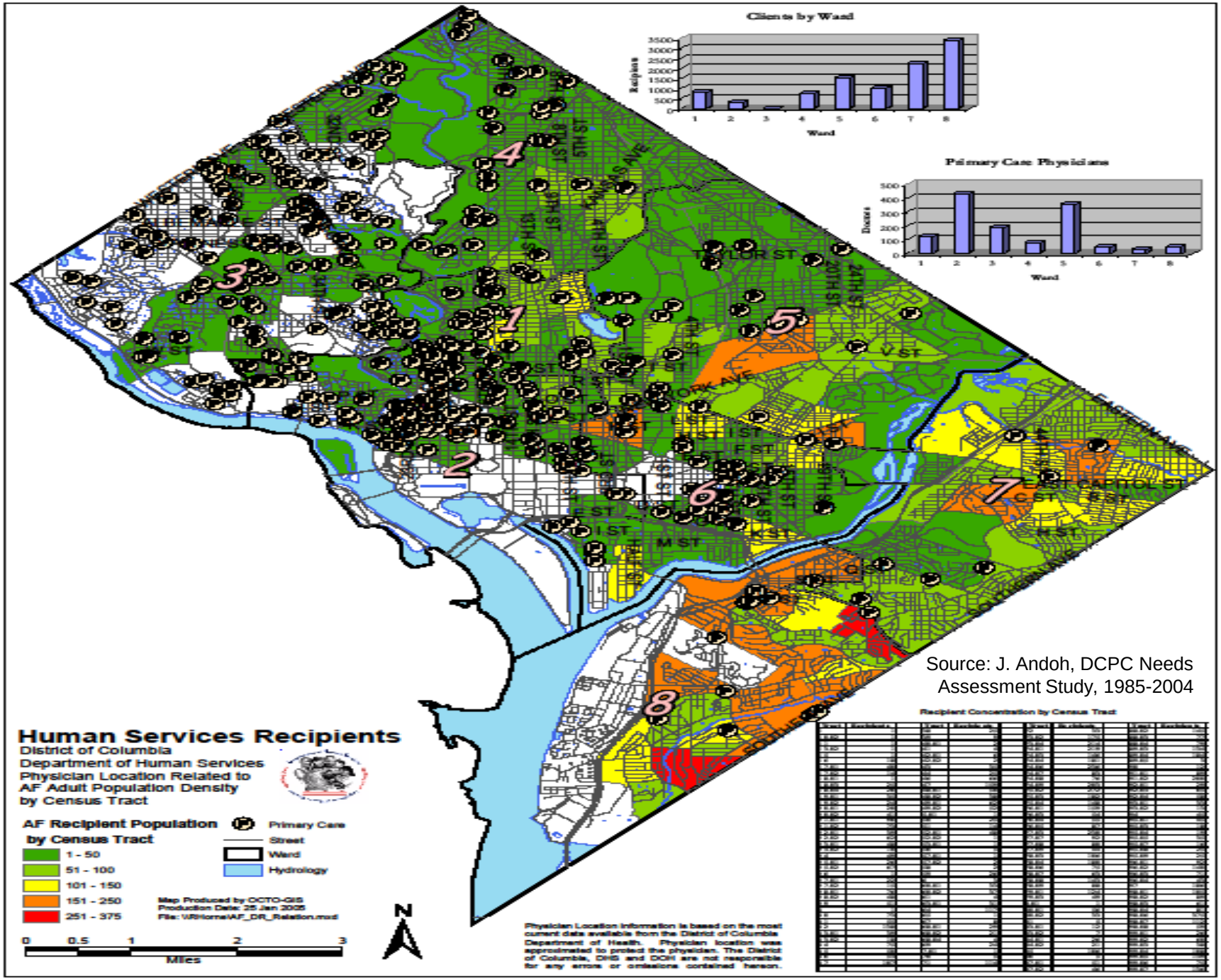


Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

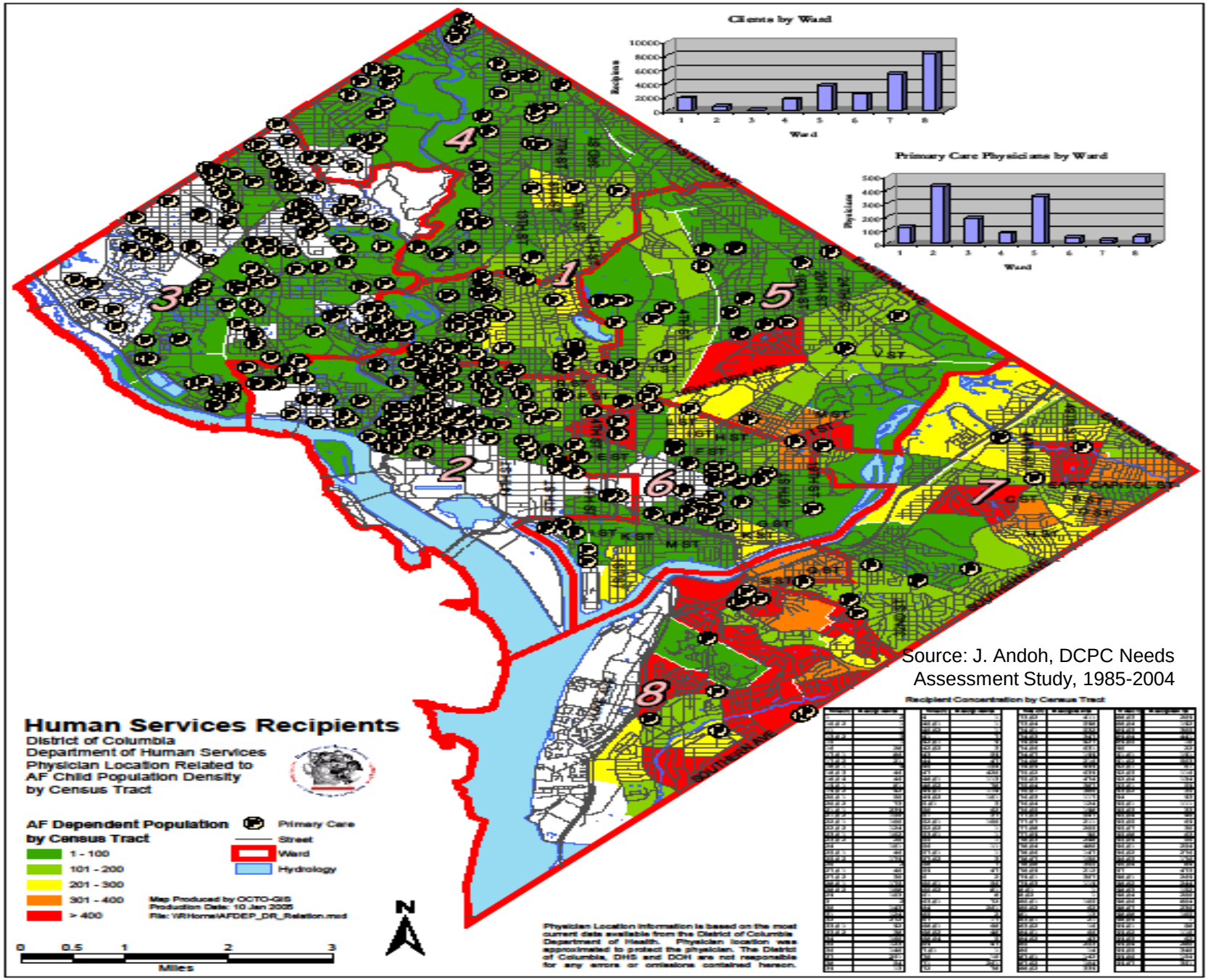
DC Phys per 1,000 population: By Census Tract Grouping



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Total Physicians licensed by the District of Columbia

- The District had a total of **11,068** licensed physicians in 1985 and **9,675** in 2004
-
- a **12.6 percent decrease** from 1985 to 2004
- – the majority of these DC-licensed physicians did not live or practice in the District of Columbia.

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Physicians in DC: 1985 to 2010

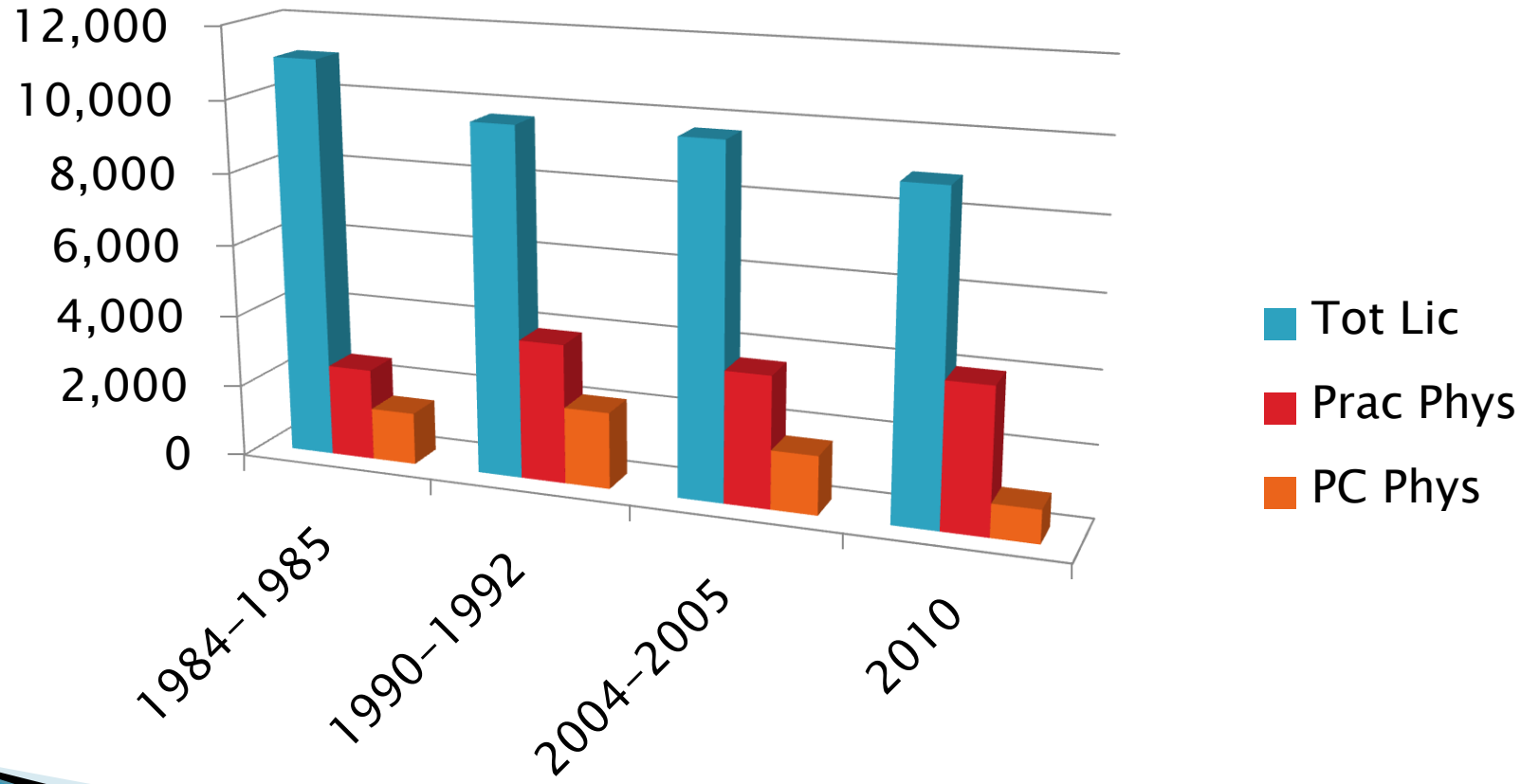
SOURCE: District of Columbia Primary Care (DCPC) Needs Assessment Study, 1985 to 2004.

	Total DC Licensed Physicians	Physicians practising in DC	Primary care Physicians	primary care physicians as % of practising physicians
1984-1985	11,068	2,543	1,444	56.8
1990-1992	9,675	3,863	2,120	54.9
2004-2005	9,675	3,635	1,622	44.6
2010*	8,940	~4,000	918	22.9

* estimates from DC Board of Medicine, 2010 study

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

DC Physicians: Comparing #Licensed, #Practising and #Primary Care



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Physicians in DC – summary

- **Decreasing #s of total physicians and decreasing #s of primary care physicians in the nation's capital is a *LONG-TERM TREND.***

- In 1985, of the total **11,068** physicians licensed by the District, only **2,543** (primary care physicians plus specialists) actually practiced in the District of Columbia in 1985.

- There were **3,863** actual practising physicians in the District in 1990 and **3,635** in 2004.

- UPDATE:
  A new study released in October 2011 by the DC Board of Medicine shows that **8,940** doctors are licensed to work in the nation's capital but only about **4,000** practice in the District today.

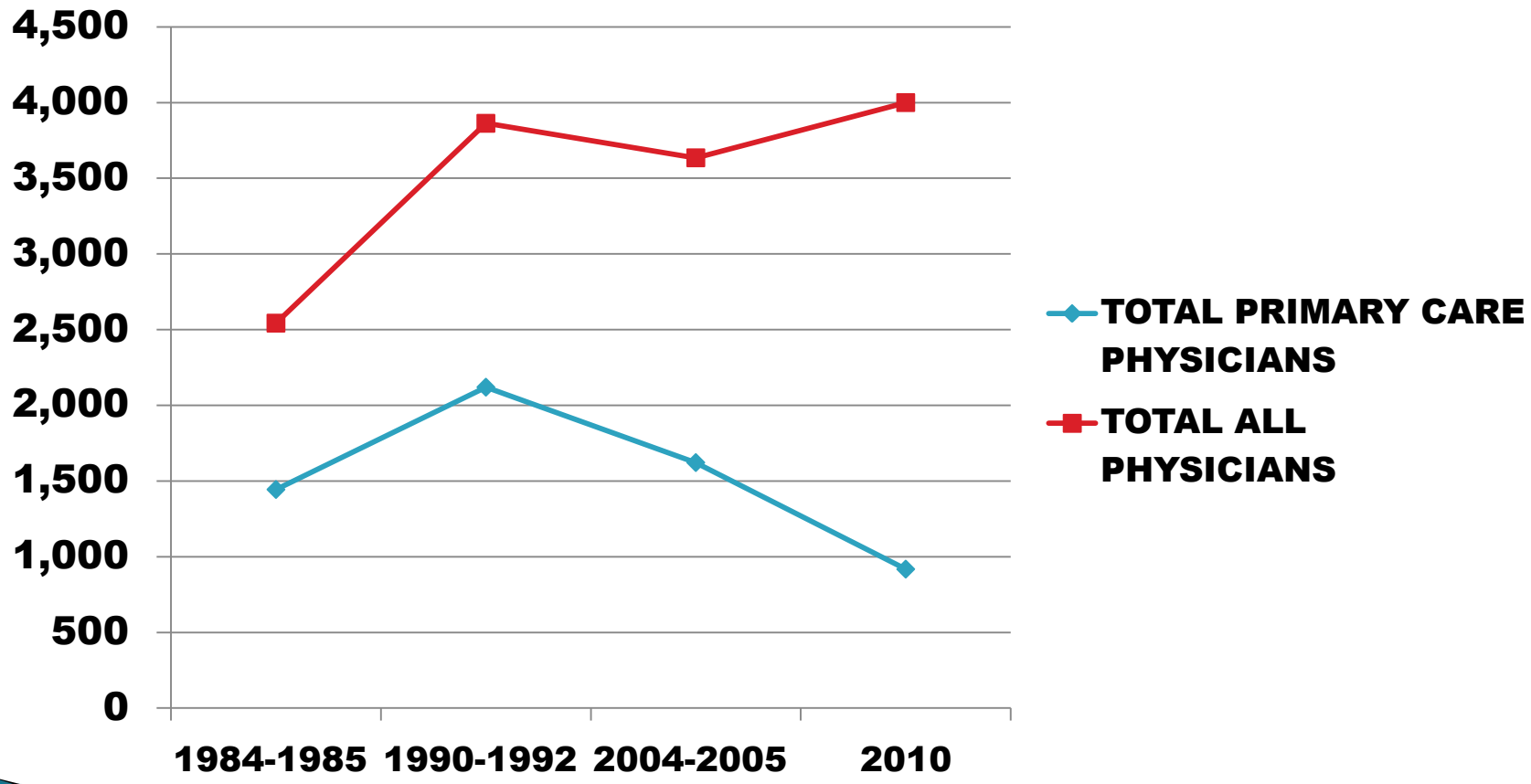
Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Changes in Number of Primary Care Physicians, District of Columbia, 1985 to 2010

	1984–1985	1990–1992	2004–2005	2010
TOTAL **PRIMARY CARE** PHYSICIANS	1,444	2,120	1,622	918
TOTAL **ALL PHYSICIANS**	2,543	3,863	3,635	4,000

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Trend Line … Total vs. Primary Care Physicians, District of Columbia, 1985 to 2010



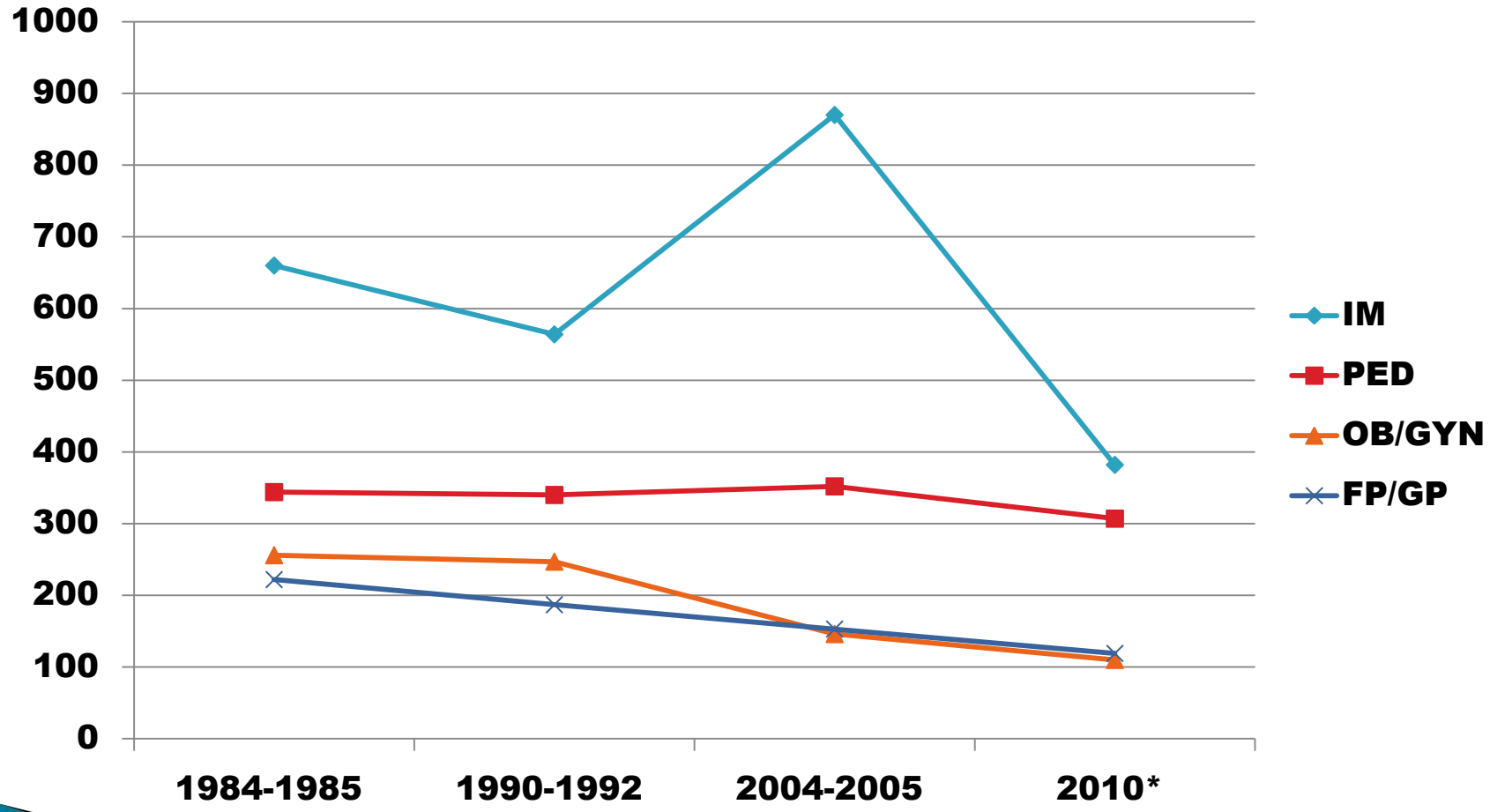
Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Primary Care Physicians, By Specialty District of Columbia, 1985 to 2010

	1984-1985	1990-1992	2004-2005	2010*
IM	660	564	870	382
PED	344	340	352	307
OB/GYN	256	247	146	110
FP/GP	222	187	153	119

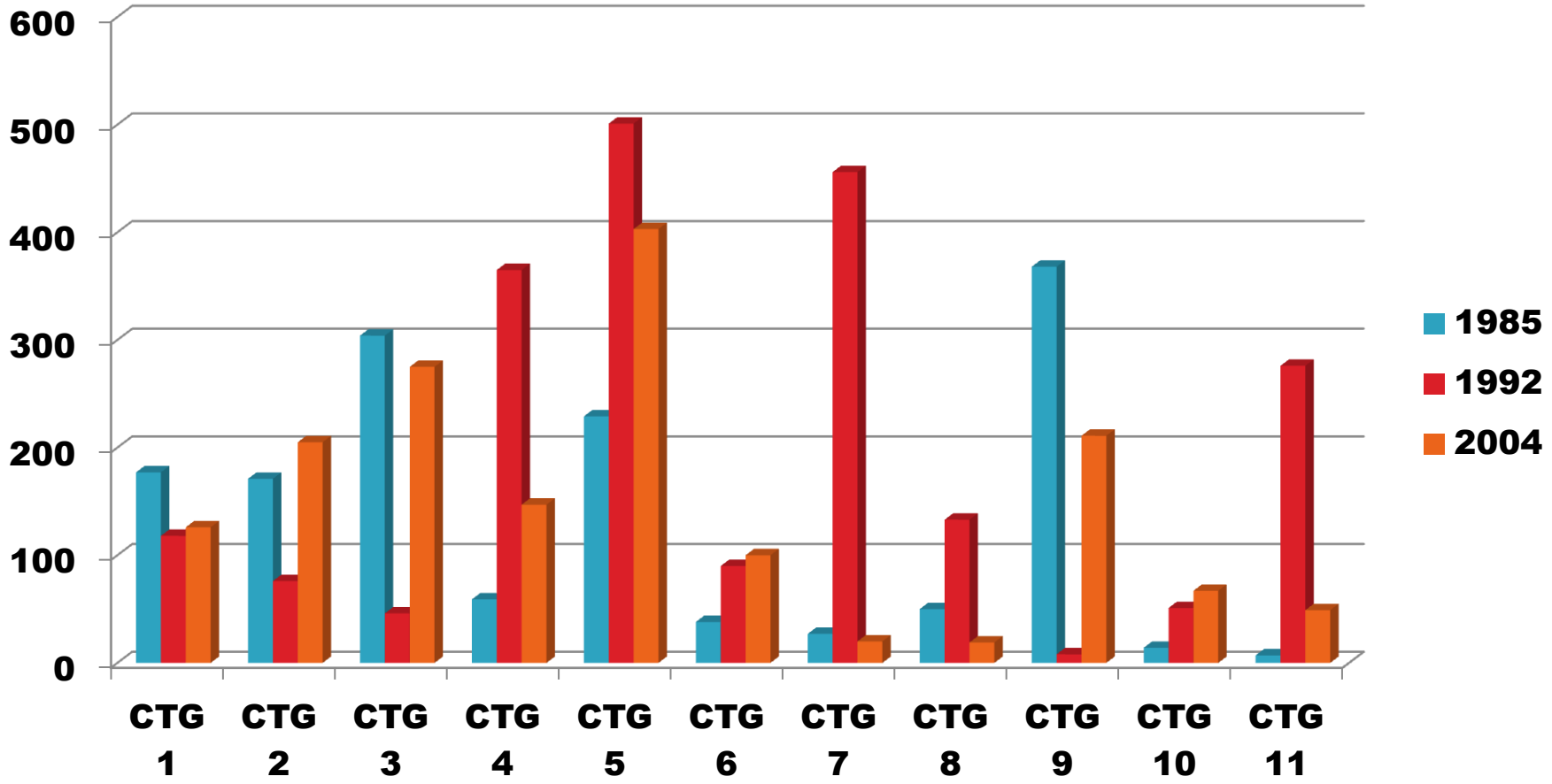
Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Trend Line …. Primary Care Physicians By Specialty, District of Columbia, 1985 to 2010



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Changes in # of Primary Care Physicians by CTG, District of Columbia, 1985-2004



Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

DCPC Results:

By Census Tract Grouping (C.T.G.)

Primary Care Service Index (PCSI)

By Census Tract Grouping, District of Columbia, 1985-2004

<1 shortage area …….

D.C. CENSUS TRACT GROUPING	1985 PCSI	1990 PCSI	2004 PCSI
1	3.04	1.97	0.80
2	5.59	2.57	2.40
3	4.06	0.56	1.40
4	1.07	7.04	1.70
5	4.91	11.54	2.60
6	1.16	2.69	1.20
7	0.49	8.97	0.20
8	0.81	2.19	0.10
9	10.60	0.23	6.10
10	0.25	1.11	0.60
11	0.17	7.45	4.20
TOTAL, DC	2.62	3.97	1.80

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Composite Need Scores (CNS)

By Census Tract Grouping, District of Columbia, 1985-2004

CNS < 50% = area of need .....

CENSUS TRACT GROUPING	1985 CNS	1990 CNS	2004 CNS	1985-2004 CNS % CHANGE
1	77.3	59.1	54.3	-23.0
2	40.9	72.7	48	7.1
3	100.0	95.5	80.8	-19.2
4	86.4	95.5	65.9	-20.5
5	72.7	45.5	56	-16.7
6	63.6	72.7	56.6	-7.0
7	31.8	18.2	39.2	7.4
8	13.6	22.7	27.3	13.7
9	50.0	36.4	64.3	14.3
10	31.8	36.4	36.3	4.5
11	13.6	36.4	41.7	28.1
[illegible] DC	52.9	53.7	52.5	-0.4

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Primary Care PRIORITY AREAS, 1985

LEGEND:

HIGH MED LOW

	CNS 1	2	3	4
PCSI				
1	CTG 11			
2		CTG 7, 10		
3				
4	CTG 8			
5		CTG 2	CTG 5, 6, 9	CTG 1, 3, 4

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Primary Care PRIORITY AREAS, 1992

LEGEND:

HIGH MED LOW

	CNS 1	2	3	4
PCSI				
1		CTG 9		
2				
3				CTG 3
4				
5	CTG 7,8	CTG 5, 10, 11	CTG 1, 2, 6	CTG 4

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

Primary Care PRIORITY AREAS, 2004

LEGEND:

HIGH MED LOW

	CNS 1	2	3	4
PCSI				
1		CTG 7, 8		
2				
3		CTG 10		
4			CTG 1	
5		CTG 2, 11	CTG 3, 4, 5, 6, 9	

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

This DCPC model may be used to predict …….

Primary Care PRIORITY AREAS for 2012, 2016, 2020 ……..

Regression Model:
Predicting primary care visits
By CTG areas ……..

Model Summary

a Predictors: (Constant), POP65P, LBWP, CTG, POPLT17, POVP2000

b Dependent Variable: VISNEED

Model	R	R squared	Adjusted	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.457	.209	.186	131086.2	.209	9.390	5	178	.000	2.068

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

APHA Theme:

"Healthy Communities Promote Healthy Minds and Bodies"

DCPC's Community of Interest: The Five P's ....

- Policymakers
- Planners
- Physicians / providers / other practitioners
- Programs (staff), and
- Public / general population

Source: J. Andoh, DCPC Needs Assessment Study, 1985-2004

DCPC - Recommendations

- 1.Policy-makers and planners should encourage use of DC Census Tract Groupings for collecting, aggregating and analyzing public health and primary care data

- 2.Providers and practitioners must support health reform in the District of Columbia by assuring that all residents, poor and nonpoor, have access to a community-based , available and affordable primary care physician

- 3.The geographic mal-distribution of primary care physicians must be addressed by public policy in the District by identifying needs and gaps in shortage areas, especially communities east-of-the-river

- 4.The District should focus on primary prevention, early intervention and health education to address each community's specific needs.

- 5. Public-private partnerships must ensure closer communications between a resident, his or her primary care physician, nurse practitioner, social services, and other community supports.

Source: Urban, DCPC Needs Assessment Study, 1985-2004

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