			2	008 Actual		2015 Projected
Physician Specia	Physician Specialty		Population	Physicians	/100k	Population
Allergy & Immu	nology		92,707	3	3.2	105,163
Natio Stand	nal Physician lards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
AMA		1.4	1	Surplus:	2	1
Two N	Mature HMO	1.5	1	Surplus:	2	2
Adjus	ted FTE	1.4	1	Surplus:	2	1
GMEI	NAC	0.8	1	Surplus:	2	1
Kaise	r Portland	1.7	2	Surplus:	1	1
7 Kais	ser Plans	1.2	1	Surplus:	2	1
GHC	Seattle	1.1	1	Surplus:	2	1
Three	HMOs					
Good	man	1.3	1	Surplus:	2	1
Hicks	& Glenn					
Soluc	ient	1.7	2	Surplus:	1	2
Avera	ge Requirement	1.3	1	Surplus:	2	1

			2	008 Actual		2015 Projected
Physi	Physician Specialty		Population	Physicians	/100k	Population
Anes	sthesiology		92,707	7	7.6	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	14.0	13	Deficit:	-6	15
	Two Mature HMO	9.7	9	Deficit:	-2	10
	Adjusted FTE	9.1	8	Deficit:	-1	10
	GMENAC	8.9	8	Deficit:	-1	9
	Kaiser Portland	5.9	5	Surplus:	2	4
	7 Kaiser Plans	3.9	4	Surplus:	3	4
	GHC Seattle	9.0	8	Deficit:	-1	9
	Three HMOs					
	Goodman	7.0	6	Surplus:	1	7
	Hicks & Glenn					
	Solucient					
	Average Requirement	7.6	7	Adequate	0	8

			2	008 Actual		2015 Projected
Physician	Physician Specialty		Population	Physicians	/100k	Population
Cardiovas	cular Diseases		92,707	7	7.6	105,163
	National Physician Standards* Phys/10		Physician Need	Status		Physician Need
_	AMA	7.5	7	Adequate	0	8
_	Two Mature HMO	5.4	5	Surplus:	2	6
_	Adjusted FTE	5.0	5	Surplus:	2	5
_	GMENAC	3.1	3	Surplus:	4	3
_	Kaiser Portland	3.0	3	Surplus:	4	2
_	7 Kaiser Plans	1.8	2	Surplus:	5	2
_	GHC Seattle	2.9	3	Surplus:	4	3
_	Three HMOs					
_	Goodman	3.6	3	Surplus:	4	4
_	Hicks & Glenn	2.6	2	Surplus:	5	3
-	Solucient	4.2	4	Surplus:	3	4
_	Average Requirement	3.5	3	Surplus:	4	4

			2		2015 Projected	
Physic	Physician Specialty  Dermatology		Population	Physicians	/100k	Population
Derm			92,707	5	5.4	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	3.7	3	Surplus:	2	4
	Two Mature HMO	2.8	3	Surplus:	2	3
	Adjusted FTE	2.6	2	Surplus:	3	3
	GMENAC	2.8	3	Surplus:	2	3
	Kaiser Portland	2.5	2	Surplus:	3	3
	7 Kaiser Plans	2.4	2	Surplus:	3	3
	GHC Seattle	2.6	2	Surplus:	3	3
	Three HMOs	1.6	1	Surplus:	4	2
	Goodman	1.4	1	Surplus:	4	1
	Hicks & Glenn	2.1	2	Surplus:	3	2
	Solucient	3.1	3	Surplus:	2	3
	Average Requirement	2.4	2	Surplus:	3	3

			2	008 Actual		2015 Projected
Physician Specialty			Population	Physicians	/100k	Population 105,163
Emerg	Emergency Medicine		92,707	6	6.5	
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	10.5	10	Deficit:	-4	11
	Two Mature HMO	5.5	5	Surplus:	1	6
	Adjusted FTE	5.2	5	Surplus:	1	5
	GMENAC	5.4	5	Surplus:	1	6
	Kaiser Portland	6.7	6	Adequate	0	6
	7 Kaiser Plans	5.3	5	Surplus:	1	6
	GHC Seattle					
	Three HMOs					
	Goodman	2.7	3	Surplus:	3	3
	Hicks & Glenn					
	Solucient	12.4	11	Deficit:	-5	13
	Average Requirement	6.2	6	Adequate	0	7

			2	008 Actual		2015 Projected
Physician	Physician Specialty		Population	Physicians	/100k	Population
Endocrin	Endocrinology, Diabetes & Metabolism		92,707	1	1.1	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	1.8	2	Deficit:	-1	2
	Two Mature HMO	1.1	1	Adequate	0	1
	Adjusted FTE	1.0	1	Adequate	0	1
	GMENAC	0.8	1	Adequate	0	1
	Kaiser Portland	0.9	1	Adequate	0	1
	7 Kaiser Plans	1.1	1	Adequate	0	1
	GHC Seattle					
	Three HMOs	0.6	1	Adequate	0	1
	Goodman					
	Hicks & Glenn					
	Solucient					
	Average Requirement	0.9	1	Adequate	0	1

			2	2008 Actual		2015 Projected
Physic	Physician Specialty		Population	Physicians	/100k	Population
Family	/ Practice		92,707	28	30.2	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	31.5	29	Deficit:	-1	33
	Two Mature HMO	45.6	42	Deficit:	-14	48
	Adjusted FTE	42.6	39	Deficit:	-11	45
	GMENAC	25.2	23	Surplus:	5	27
	Kaiser Portland	16.7	15	Surplus:	13	12
	7 Kaiser Plans	11.0	10	Surplus:	18	12
	GHC Seattle					
	Three HMOs	9.2	9	Surplus:	19	10
	Goodman					
	Hicks & Glenn	16.2	15	Surplus:	13	17
	Solucient	22.5	21	Surplus:	7	24
	Average Requirement	23.6	22	Surplus:	6	25

			2	2015 Projected		
Physi	Physician Specialty  Gastroenterology		Population	Physicians	/100k	Population
Gastr			92,707	5	5.4	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	4.2	4	Surplus:	1	4
	Two Mature HMO	3.1	3	Surplus:	2	3
	Adjusted FTE					
	GMENAC	3.2	3	Surplus:	2	3
	Kaiser Portland	1.7	2	Surplus:	3	2
	7 Kaiser Plans	1.7	2	Surplus:	3	2
	GHC Seattle					
	Three HMOs					
	Goodman	1.3	1	Surplus:	4	1
	Hicks & Glenn					
	Solucient	3.5	3	Surplus:	2	4
	Average Requirement	2.4	2	Surplus:	3	3

			2	008 Actual		2015 Projected
Physiciar	Physician Specialty		Population	Physicians	/100k	Population
Infectiou	ıs Disease		92,707	1	1.1	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	2.2	2	Deficit:	-1	2
	Two Mature HMO	0.7	1	Adequate	0	1
	Adjusted FTE	0.6	1	Adequate	0	1
	GMENAC	0.9	1	Adequate	0	1
	Kaiser Portland	1.2	1	Adequate	0	1
	7 Kaiser Plans	0.7	1	Adequate	0	1
	GHC Seattle	0.6	1	Adequate	0	1
	Three HMOs					
	Goodman					
	Hicks & Glenn					
	Solucient					
	Average Requirement	0.8	1	Adequate	0	1

			2	008 Actual		2015 Projected
Physician	Physician Specialty		Population	Physicians	/100k	Population
Internal N	/ledicine		92,707	23	24.8	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
-	AMA	53.1	49	Deficit:	-26	56
-	Two Mature HMO	21.4	20	Surplus:	3	23
=	Adjusted FTE	20.0	19	Surplus:	4	21
-	GMENAC	28.8	27	Deficit:	-4	30
-	Kaiser Portland	28.1	26	Deficit:	-3	32
-	7 Kaiser Plans	30.3	28	Deficit:	-5	32
-	GHC Seattle					
-	Three HMOs	16.7	15	Surplus:	8	18
-	Goodman					
-	Hicks & Glenn	11.3	10	Surplus:	13	12
-	Solucient	19.0	18	Surplus:	5	20
-	Average Requirement	22.0	20	Surplus:	3	23

		2	008 Actual		2015 Projected
Physician Specialty		Population	Physicians	/100k	Population
Nephrology		92,707	4	4.3	105,163
National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
AMA	2.6	2	Surplus:	2	3
Two Mature HMO	1.4	1	Surplus:	3	1
Adjusted FTE	1.3	1	Surplus:	3	1
GMENAC	1.1	1	Surplus:	3	1
Kaiser Portland	0.8	1	Surplus:	3	1
7 Kaiser Plans	0.7	1	Surplus:	3	1
GHC Seattle	0.9	1	Surplus:	3	1
Three HMOs					
Goodman					
Hicks & Glenn					
Solucient	0.7	1	Surplus:	3	1
Average Requirement	1.0	1	Surplus:	3	1

			2	2015 Projected		
Physi	Physician Specialty  Neurological Surgery		Population	Physicians	/100k	Population 105,163
Neur			92,707	2	2.2	
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	1.9	2	Adequate	0	2
	Two Mature HMO	1.1	1	Surplus:	1	1
	Adjusted FTE	1.0	1	Surplus:	1	1
	GMENAC	1.1	1	Surplus:	1	1
	Kaiser Portland	1.4	1	Surplus:	1	
	7 Kaiser Plans					
	GHC Seattle	0.4	0	Surplus:	2	0
	Three HMOs					
	Goodman	0.7	1	Surplus:	1	1
	Hicks & Glenn					
	Solucient					
	Average Requirement	1.0	1	Surplus:	1	1

		2	008 Actual		2015 Projected
Physician Specialty	Physician Specialty		Physicians	/100k	Population
Neurology		92,707	3	3.2	105,163
National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Status		Physician Need
AMA	5.0	5	Deficit:	-2	5
Two Mature HMO	2.4	2	Surplus:	1	3
Adjusted FTE	2.3	2	Surplus:	1	2
GMENAC	3.3	3	Adequate	0	3
Kaiser Portland	1.3	1	Surplus:	2	2
7 Kaiser Plans	1.7	2	Surplus:	1	2
GHC Seattle	1.2	1	Surplus:	2	1
Three HMOs					
Goodman	2.1	2	Surplus:	1	2
Hicks & Glenn	1.4	1	Surplus:	2	1
Solucient	1.8	2	Surplus:	1	2
Average Requirem	nent 1.9	2	Surplus:	1	2

			2	008 Actual		2015 Projected
Physician	Physician Specialty		Population	Physicians	/100k	Population
OB/GYN			92,707	18	19.4	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
-	AMA	14.1	13	Surplus:	5	15
-	Two Mature HMO	12.1	11	Surplus:	7	13
-	Adjusted FTE	11.3	10	Surplus:	8	12
-	GMENAC	9.9	9	Surplus:	9	10
-	Kaiser Portland	11.6	11	Surplus:	7	12
-	7 Kaiser Plans	11.5	11	Surplus:	7	12
-	GHC Seattle	10.0	9	Surplus:	9	11
-	Three HMOs	8.8	8	Surplus:	10	9
-	Goodman	8.4	8	Surplus:	10	9
-	Hicks & Glenn	8.0	7	Surplus:	11	8
-	Solucient	10.2	9	Surplus:	9	11
-	Average Requirement	10.2	9	Surplus:	9	11

			2	008 Actual		2015 Projected
Physician S	Physician Specialty		Population	Physicians	/100k	Population
Opthalmol	logy		92,707	5	5.4	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	6.0	6	Deficit:	-1	6
_	Two Mature HMO	5.9	5	Adequate	0	6
_	Adjusted FTE	5.5	5	Adequate	0	6
_	GMENAC	4.6	4	Surplus:	1	5
_	Kaiser Portland	2.4	2	Surplus:	3	3
_	7 Kaiser Plans	3.1	3	Surplus:	2	3
_	GHC Seattle	5.0	5	Adequate	0	5
_	Three HMOs					
_	Goodman	3.5	3	Surplus:	2	4
_	Hicks & Glenn	3.2	3	Surplus:	2	3
	Solucient	4.7	4	Surplus:	1	5
_	Average Requirement	4.2	4	Surplus:	1	4

			2	008 Actual		2015 Projected
Physic	Physician Specialty Orthopedic Surgery		Population	Physicians	/100k	Population
Ortho			92,707	6	6.5	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	8.3	8	Deficit:	-2	9
	Two Mature HMO	6.8	6	Adequate	0	7
	Adjusted FTE	6.4	6	Adequate	0	7
	GMENAC	6.0	6	Adequate	0	6
	Kaiser Portland	5.9	5	Surplus:	1	4
	7 Kaiser Plans	4.2	4	Surplus:	2	4
	GHC Seattle	6.7	6	Adequate	0	7
	Three HMOs	3.0	3	Surplus:	3	3
	Goodman	5.9	5	Surplus:	1	6
	Hicks & Glenn	4.2	4	Surplus:	2	4
	Solucient	6.1	6	Adequate	0	6
	Average Requirement	5.5	5	Surplus:	1	6

			2	008 Actual		2015 Projected
Physiciar	n Specialty		Population	Physicians	/100k	Population
Otolaryn	gology		92,707	5	5.4	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	3.4	3	Surplus:	2	4
	Two Mature HMO	3.2	3	Surplus:	2	3
	Adjusted FTE					
	GMENAC	3.2	3	Surplus:	2	3
	Kaiser Portland	3.4	3	Surplus:	2	3
	7 Kaiser Plans	2.4	2	Surplus:	3	3
	GHC Seattle	3.0	3	Surplus:	2	3
	Three HMOs					
	Goodman					
	Hicks & Glenn					
	Solucient					
	Average Requirement	3.0	3	Surplus:	2	3

			2	008 Actual		2015 Projected
Physician	Physician Specialty		Population	Physicians	/100k	Population
Patholog	У		92,707	2	2.2	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
,	AMA	6.3	6	Deficit:	-4	7
	Two Mature HMO	1.9	2	Adequate	0	2
	Adjusted FTE	1.8	2	Adequate	0	2
	GMENAC	6.4	6	Deficit:	-4	7
	Kaiser Portland	3.3	3	Deficit:	-1	2
	7 Kaiser Plans	1.8	2	Adequate	0	2
	GHC Seattle					
	Three HMOs					
	Goodman	4.1	4	Deficit:	-2	4
	Hicks & Glenn					
	Solucient					
	Average Requirement	3.2	3	Deficit:	-1	3

			2	008 Actual		2015 Projected
Physicia	Physician Specialty		Population	Physicians	/100k	Population
Pediatrio	cs		92,707	18	19.4	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	24.9	23	Deficit:	-5	26
	Two Mature HMO	16.6	15	Surplus:	3	17
	Adjusted FTE	15.5	14	Surplus:	4	16
	GMENAC	12.4	11	Surplus:	7	13
	Kaiser Portland	11.9	11	Surplus:	7	17
	7 Kaiser Plans	16.0	15	Surplus:	3	17
	GHC Seattle					
	Three HMOs	9.8	9	Surplus:	9	10
	Goodman					
	Hicks & Glenn	7.6	7	Surplus:	11	8
	Solucient	13.9	13	Surplus:	5	15
	Average Requirement	13.0	12	Surplus:	6	14

			2	008 Actual		2015 Projected
Physic	Physician Specialty		Population	Physicians	/100k	Population
Plastic	c Surgery		92,707	2	2.2	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	2.4	2	Adequate	0	3
	Two Mature HMO					
	Adjusted FTE					
	GMENAC	1.1	1	Surplus:	1	1
	Kaiser Portland	0.3	0	Surplus:	2	
	7 Kaiser Plans					
	GHC Seattle	0.4	0	Surplus:	2	0
	Three HMOs					
	Goodman	1.1	1	Surplus:	1	1
	Hicks & Glenn	2.3	2	Adequate	0	2
	Solucient	2.2	2	Adequate	0	2
	Average Requirement	1.2	1	Surplus:	1	1

			2	008 Actual		2015 Projected
Physic	Physician Specialty		Population	Physicians	/100k	Population
Psych	niatry		92,707	11	11.9	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	13.6	13	Deficit:	-2	14
	Two Mature HMO	7.7	7	Surplus:	4	8
	Adjusted FTE	7.2	7	Surplus:	4	8
	GMENAC	15.4	14	Deficit:	-3	16
	Kaiser Portland	5.2	5	Surplus:	6	4
	7 Kaiser Plans	4.1	4	Surplus:	7	4
	GHC Seattle					
	Three HMOs					
	Goodman	7.2	7	Surplus:	4	8
	Hicks & Glenn	3.9	4	Surplus:	7	4
	Solucient	5.7	5	Surplus:	6	6
	Average Requirement	7.1	7	Surplus:	4	7

			2	008 Actual		2015 Projected
Physicia	Physician Specialty  Pulmonary Diseases		Population	Physicians	/100k	Population
Pulmon			92,707	3	3.2	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	3.5	3	Adequate	0	4
	Two Mature HMO	2.0	2	Surplus:	1	2
	Adjusted FTE	1.9	2	Surplus:	1	2
	GMENAC	1.4	1	Surplus:	2	1
	Kaiser Portland	1.4	1	Surplus:	2	1
	7 Kaiser Plans	1.0	1	Surplus:	2	1
	GHC Seattle	1.4	1	Surplus:	2	1
	Three HMOs					
	Goodman	1.4	1	Surplus:	2	1
	Hicks & Glenn					
	Solucient	1.3	1	Surplus:	2	1
	Average Requirement	1.5	1	Surplus:	2	2

			2	008 Actual		2015 Projected
Physicia	Physician Specialty		Population	Physicians	/100k	Population
Radiolog	JY		92,707	8	8.6	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	11.4	11	Deficit:	-3	12
	Two Mature HMO	13.6	13	Deficit:	-5	14
	Adjusted FTE	13.7	13	Deficit:	-5	14
	GMENAC	7.7	7	Surplus:	1	8
	Kaiser Portland	8.5	8	Adequate	0	5
	7 Kaiser Plans	4.7	4	Surplus:	4	5
	GHC Seattle	7.7	7	Surplus:	1	8
	Three HMOs					
	Goodman	8.0	7	Surplus:	1	8
	Hicks & Glenn					
	Solucient					
	Average Requirement	9.1	8	Adequate	0	10

			2	008 Actual		2015 Projected
Physic	Physician Specialty  General Surgery		Population	Physicians	/100k	Population
Gener			92,707	9	9.7	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
	AMA	12.5	12	Deficit:	-3	13
	Two Mature HMO	9.4	9	Adequate	0	10
	Adjusted FTE	8.8	8	Surplus:	1	9
	GMENAC	9.7	9	Adequate	0	10
	Kaiser Portland	7.0	6	Surplus:	3	7
	7 Kaiser Plans	6.2	6	Surplus:	3	7
	GHC Seattle	5.9	5	Surplus:	4	6
	Three HMOs	4.2	4	Surplus:	5	4
	Goodman	9.7	9	Adequate	0	10
	Hicks & Glenn	4.1	4	Surplus:	5	4
	Solucient	6.0	6	Surplus:	3	6
	Average Requirement	7.1	7	Surplus:	2	7

			2008 Actual			2015 Projected Population
Physician Specialty		Population	Physicians	/100k		
Urology			92,707	4	4.3	105,163
	National Physician Standards*	Standard Phys/100,000 Pop.	Physician Need	Sta	tus	Physician Need
•	AMA	3.5	3	Surplus:	1	4
	Two Mature HMO	3.5	3	Surplus:	1	4
	Adjusted FTE	3.3	3	Surplus:	1	3
	GMENAC	3.1	3	Surplus:	1	3
	Kaiser Portland	3.3	3	Surplus:	1	2
	7 Kaiser Plans	2.3	2	Surplus:	2	2
	GHC Seattle	2.9	3	Surplus:	1	3
	Three HMOs					
	Goodman	2.6	2	Surplus:	2	3
	Hicks & Glenn	1.9	2	Surplus:	2	2
	Solucient	2.9	3	Surplus:	1	3
	Average Requirement	2.9	3	Surplus:	1	3

Report created by Georgia Board for Physician Workforce, State of Georgia

- (1) McClendon, B., R.Polizer, E. Christain, and E. Fernandez. 1997. Downsizing the Physician Workforce. Public Health Reports. May/June 112:231-239.
- (2) Graduate Medical Education National Advisory Committee Summary Report. 1981. Pub. No. (HRA) 81-651. Washington: Government Printing Office.
- (3) American Medical Association. 1996. Physician Characteristics and Distribution in the US: 1995/1996. Chicago.
- (4) American Osteopathic Association. 1993. 1994 Yearbook and Directory of Osteopathic Physicians. Chicago.
- (5) Hart, L., E. Wagner, J. Parzada, A.Nelson, and R.Rosenblah. 1997. Physician Staffing Ratios in Staff- Model HMO's: A Cautionary Tale, Health Affairs 16, no. 1:55-70.
- (6) Weiner, J.P. 1994 Forecasting the Effects of Health Reform on U.S. Physician Workforce Requirement. JAMA 272, no. 3:222-230.
- (7) Steinwachs, D., J.P. Weiner, S. Shapiro, et al. 1986. A Comparison of the Requirements for Primary Care Physicians in with Projections Made by the Graduate Medical National Advisory Committee. New England Journal of Medicine 314:217-222.
- (8) Kronick, R., D.C. Goodman, J. Wennberg, and E.Wagner. 1993. The Marketplace in Health Care Reform: The Demographic Limitations of Managed Competition. New England Journal of Medicine 328:1480152. See also, related NAPS Document 04998.
- (9) Vansdow, N.A. The Physician Workforce: Issues for Academic Medical Centers. Forum on the Future of Academic Medicine. December 2, 1996.
- (10) Forte, G.J., Dionne, M., Beaulieu, M., and Salsberg, E. Profile of New York State Physicians. Rensselaer, NY: Center for Health Workforce Studies, School of Public Health, SUNY Albany. April 2001.
- (11) A Review of Physician-to-Population Ratios. Merritt Hawkins & Associates. GMENAC, Goodman (Dec. 11, 1996 JAMA), Hicks & Glenn (1989 Journal of Health Care Management), Solucient (2003).
- (12) American Medical Association. Physician Characteristics and Distribution in the US, 2010 Edition; 2010.

<sup>\*</sup>Standards are presented as rates per 100,000 population