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U.S. Latino Population Composition Change and Comprehensive Cancer Centers

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Abstract: **Background**. We describe a typology characterizing population trends of U.S. Latinos/Hispanics from 1990 to 2000 with respect to National Cancer Institute-designated comprehensive cancer centers (CCCs) and corresponding consolidated metropolitan statistical or metropolitan statistical areas (CMSA/MSAs). **Methods**. Using U.S. Census Bureau data, we constructed population pyramids to analyze population growth and composition for each CMSA/MSA with a CCC. **Results**. We identified four types of population growth and composition: Type I—Very Fast and Unstable; Type II—Fast and Unstable; Type III—Somewhat Fast and Stable; Type IV—Slow and Stable. **Conclusions**. The CCCs in areas with Types I and II population growth face the greatest challenges because of the lack of infrastructure for reaching medically underserved Latinos. In contrast, CCCs in areas with Types III and IV population growth may have significant infrastructure but must quickly develop interventions to reach and provide access to aging Latinos to reduce health disparities in cancer mortality and morbidity.

Key words: Hispanics, Latinos, demography, population distribution, analysis, demographic, cancer care facilities, neoplasms.

The purpose of this article is to describe demographic trends of the U.S. Latino* population between 1990 and 2000 (taking advantage of accurate ethnic population data available from decennial censuses) with respect to the locations of the National Cancer Institute (NCI)-designated Comprehensive Cancer Centers (CCCs) and their

*The terms Latino and Hispanic, which we use interchangeably, are defined by NIH policy as "A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race."[1]

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corresponding metropolitan statistical areas based on U.S. Census geographic classifications. Information on demographic shifts may assist CCCs better prepare for the cancer control needs of the fastest growing segment of the U.S. population which, by 2050, will constitute more than one-quarter of the total U.S. population.*

In 2008, there were 41 CCCs in 23 states and the District of Columbia (please see http://cancercenters.cancer.gov/cancer_centers/cancer-centers-list.html). Of these CCCs, only one (St. Jude Children's Research Hospital in Memphis, Tennessee) focuses on cancers of childhood and serves a patient population that is both national and international. Six states with one or more CCCs (Arizona, California, Florida, Illinois, New York, and Texas) each have Latino populations of more than one million, collectively representing 80% of U.S. Latinos. The New York City area has two CCCs, and California has six CCCs, including four in the Los Angeles area. Comprehensive Cancer Centers in Houston, Tampa, Los Angeles, and Chicago are located within urban communities with some of the largest Latino populations in the United States.*

Using publicly available information, we describe demographic changes of the Latino population within each of the selected Consolidated Metropolitan Statistical Areas/Metropolitan Statistical Areas (CMSA/MSA), or counties for the CCCs in New Hampshire and Connecticut. Informed by the Demographic Transition Model, we examine changes in population growth and composition in each CMSA/MSA that has a CCC. Demographic transition refers to a definitive change in population and population composition due to a variety of factors—fertility levels, mortality, internal and international immigration.[2-5] Here, we focus on population composition (distribution by age/sex cohort) within CMSA/MSAs and describe changes in population size from 1990 to 2000 for U.S. Latinos. As defined by the U.S. Office of Management and Budget, a CMSA is a designation for metropolitan statistical areas with one million or more inhabitants and comprising two or more large urbanized counties that demonstrate strong internal economic and social links.[6] An MSA is an urban area of 50,000 or more population, encompasses one or more counties, and has a high degree of social and economic integration.[6]

The U.S. Latino Population and Its Cancer Rates

Population characteristics and distribution. Between 1980 and 2000, the U.S. Latino population doubled, primarily because of increased immigration from Mexico, Central America, and other Latin American countries. In 2005, there were an estimated 42.8 million U.S. Latinos, and this number is projected to increase to 128 million by 2050, or nearly 30% of the total U.S. population.[7] Between the years 1990 and 2005, more than one-half million individuals emigrated annually from Mexico, Central America,

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*Except where noted, all demographic and socioeconomic statistics are from the U.S. Census Bureau, including 1990 and 2000 census data, population estimates, and national population projections. See: http://www.census.gov/. For our analytical data for population composition, we use only U.S. Census 1990 and 2000 data. Our description of insurance and health care access are derived from the National Health Interview Survey for 2004 and 2006.[12,14] Education levels and dropout rates were obtained from National Center for Education Statistics reports as noted.[13]

or other Latin American countries to the U.S., with at least 50% having undocumented immigrant status and a sizable portion being male.[8,9] The majority of the U.S. Latino population lives in the South, the Southwest, and the New York City area, with Latino growth being heaviest in the Northwest and Midwest regions of the country. About 34% of U.S. Latinos currently have no health insurance, 21.5% are covered by Medicaid, and 6% are covered by Medicare.[10] Although the average age of U.S. Latinos is currently younger than that of non-Latinos, by 2050 their average age will be similar to the present average age of the U.S. population. According to a 2002 U.S. Census report, the majority of Latinos in the United States were under the age of 40, and the median ages in 1990 and 2000 were 25.5 and 25.8 respectively.[11] This is substantially younger than that found for the overall U.S. population (32.9 in 1990 and 35.3 in 2000).[11] Using data from 2006, researchers estimate that the current median age for Hispanics has risen to 27.4 years, compared with 36.4 for the overall total U.S. population indicating little narrowing of this age gap in recent years.[12] In 2000, about 5% of all U.S. Latinos were age 65 or older but by 2050, nearly 9%, or 7.3 million, will be age 65 or older.[12] Currently, nearly 20% of elderly Latinos live below the federal poverty line.[14] For all U.S. Latinos age 18 and over, a large minority (40%) have less than a high school education.[13] Among foreign-born Latinos, the high school dropout rate is about 43%.[13]

About 34% of U.S. Latinos currently have no health insurance, 21.5% are covered by Medicaid, and 6% are covered by Medicare.[10] Nevertheless, only 6.5% of Latinos report not receiving medical care due to cost and 8.1% delayed medical care due to cost; these figures are similar to those of their White and Black counterparts.[14] Nearly a third of adult Latinos report having no usual place of health care, and one-half report having had no contact with a health care provider in the previous six months.[15]

Cancer incidence, mortality, and prevalence. Among Hispanic individuals diagnosed with cancer between 2000 and 2005, the age-adjusted cancer incidence rate within 13 Surveillance Epidemiology and End Results (SEER) regions was 357.6/100,000 individuals, compared with the 492.2/100,000 age-adjusted rate for non-Hispanic Whites estimated from 17 SEER regions.[16] During the same time period, age-adjusted U.S. cancer mortality was 127.0/100,000 for Hispanics compared with 192.2/100,000 for non-Hispanic Whites.[16]

Excess cancer mortality rates may be related to geographic location. For example, among Hispanics living in Texas, higher mortality rates for colorectal cancer and prostate cancer have been observed in the southeastern and western parts of the state, respectively.[17,18] Based on SEER 2005 estimates of less-than-15-year cancer prevalence rates, 434,168 Hispanics in the U.S. are living with a history of one or more cancers. About half of these survivors have a history of female breast (20.5%), prostate (20.3%), or colorectal cancer (9%).[19]

As the U.S. Latino population ages, we anticipate that this population will face increasing cancer burden. In this paper, we assess where such burdens may occur in order to help cancer centers prepare for the demographic shifts that must be incorporated into their long-term cancer control plans. Our study is the first to explore and examine U.S. Latino population sizes and composition (age/sex) with population pyramids for each of the CCC's CMSAs/MSAs as a way to inform oncology professionals about projected needs in cancer control. We present a typology based on growth and stability of age/sex distributions not previously described in the literature for the U.S. Latino populations of CMSAs/MSAs in comparison with the overall U.S. population.

Methods

Use of population pyramids. We illustrate the changes in the U.S. Latino population with population composition pyramids constructed by age and sex. The shape of a pyramid visually represents a trend in fertility, mortality, or internal or international migration. Population pyramid shapes are described in a variety of ways such as pinched, triangular, inverted triangular, and rectangular. Population pyramids also represent population growth and stability of that growth, particularly as it relates to age and sex. Pyramids with broad bases that smoothly lead to narrow tops (triangular) signal large cohorts of infants and children, smaller cohorts of employment-aged adults, and even smaller elderly cohorts. Populations with such a composition would not be expected to have a significant cancer burden and should have sufficient numbers to care for those shouldering cancer burdens such as the elderly. In contrast, pyramids that appear squeezed in the middle (pinched) have large infant and children cohorts along with large elderly cohorts, and are likely to have high cancer rates and strained resources for elder care. Pyramids with rectangular shapes represent populations with low fertility rates (replacement levels), increasing longevity, and little net change in migration patterns.[2–5,20]

In the U.S. the total population by sex is generally distributed for slightly more females than males. A skewed distribution with larger cohorts of employment-age males compared with corresponding female cohorts is typical of international migration. A rapid growth in males over a short time period (such as 1990–2000) might directly reflect changes in U.S. immigration policies.

Population growth and composition. We explored population growth and composition by first reviewing the locations of CCCs in 1990 and 2000 with respect to the distribution of the U.S. Latino population. We then used 1990 and 2000 U.S. Census data to obtain Hispanic age distributions and population counts by sex within each statistical area housing a comprehensive cancer center. Next, we constructed population composition pyramids for each CMSA/MSA. Those CMSA/MSAs with more than one CCC were only considered once. Two MSAs with CCCs in 1990 (Washington, D.C. and Baltimore, Maryland) were consolidated in 1993. We presented these separately for 1990 before the merge of these two areas. Unfortunately, we were unable to disaggregate each of these MSAs once they were merged in 2000 data. Therefore, the 1990 population pyramids were separately compared before their comparison with the merged 2000 version. The New Haven, Fairfield, Litchfield, and Middlesex counties in Connecticut were disaggregated from the New York City CMSA because the total aggregation would have misrepresented the Latino population surrounding the Yale Cancer Center. One CCC (St. Jude Children's Research Center), with its singular focus on cancers of childhood, serves patients from all over the United States and the world. Because of the geographic vastness of this service, we have excluded the Memphis CMSA/MSA from our analyses.

We used Microsoft Excel to construct our population composition pyramids by grouping our data into age-sex cohorts with age divided into four-year intervals beginning at age zero. The percentages for each age-sex cohort were calculated by dividing the number in each age-sex cohort by the total Latino population in each CMSA/MSA. This process resulted in a total of 62 population pyramids, two for each year (31 for year 1990 and 31 for year 2000) that include: (1) the overall U.S. population; (2) the U.S. Latino population and; (3) the Latino population in each statistical area housing a CCC.* Lastly, we calculated the percent change of the Latino population per CMSA/MSA between 1990 and 2000. As shown in the population composition pyramids (Figures 3–7), the left side of each pyramid represents males and the right side represents females. For each pyramid pair, we overlaid the findings for 1990 on the 2000 data to present the magnitude of change visually. After categorizing the CMSA/MSAs by growth and composition, we selected the most representative pairs to illustrate the types of population changes found in these CMSAs/MSAs with comprehensive cancer centers.

Results

Overall U.S. and Latino population growth and composition. Based on 1990 to 2000 data from the U.S. Census Bureau, the overall U.S. population had stable growth with few changes across age-sex groups over time (see Figure 1). The shape of the pyramid indicates that U.S. fertility levels are stable and that the size of the population is also stable. In contrast the total U.S. Latino population has a larger fertility base (infant and child

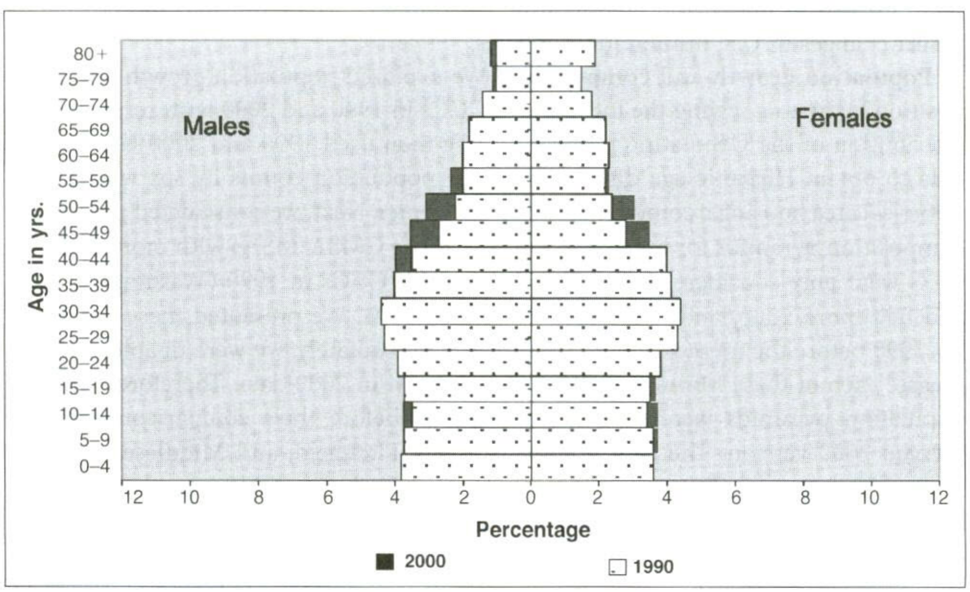

Figure 1. U.S. overall population composition changes, 1999–2000.

*Pyramids for each of the CMSA/MSAs are available upon request.

cohorts) than the overall U.S. population. Further, the composition of the U.S. Latino population is predominantly male and younger than the overall U.S. population.

Demographic typology of CMSA/MSAs. Table 1 categorizes the CCCs according to shifts in Latino population size and composition between 1990 and 2000. All selected CMSA/MSAs experienced positive growth of their Latino populations, ranging from 33% (Pittsburgh CMSA) to 777% (Greensboro CMSA). Table 2 ranks our CMSA/MSAs by percentage of Latino growth with Greensboro, NC, topping our list and Los Angeles at the bottom of the list. Table 3 categorizes the cities in terms of the types of growth in Latino population experienced. Our examination shows four types that were clearly characterized by their rates of growth and male/female composition. These four types are (1) very fast growth (over 100%) and unstable male representation (over 50% male); (2) fast (70–99%) and unstable (over 50% male); (3) moderately fast (40–69%) and stable (45–50% male); and (4) slow (39% or less) and stable (45–50% male). Each CMSA/MSA had positive growth of their Latino populations in comparison with the overall U.S. population, but some were distinctly faster than others, and they had unstable male/female ratios alongside rapid growth of the youngest cohorts. This reflects high fertility levels and immigration without similar growth in older cohorts, especially those of retirement ages and older (65 years and above).

Type I: Very Fast and Unstable Growth. Fourteen of the 30 CMSA/MSAs had greater than 100% increase in their Latino populations from 1990 to 2000, ranging from 111% (Denver CMSA) to 777% (Greensboro CMSA). Each one of these CMSA/MSAs had more than 50% of their Latino populations comprised of males. Population pyramids (see Figure 3) for this group show heavy skewing toward males between the ages of 15 and 34, relatively constant and small proportions of the elderly, and rapid growth for the very young (age 0 to 4). These statistical areas tend to be new settlement or transient areas for Latinos.

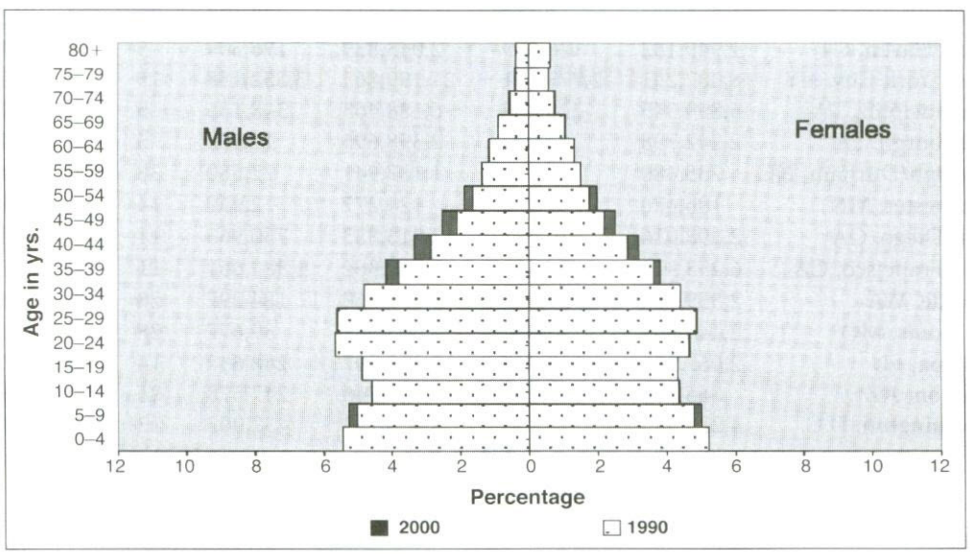

Figure 2. Overall U.S. Latino population composition changes, 1999–2000.

Table 1.

CATEGORIZATION OF THE COMPREHENSIVE CANCER CENTERS ACCORDING TO SHIFTS IN LATINO POPULATION SIZE AND COMPOSITION BETWEEN 1990 AND 2000

	1990		2000		Absolute growth (%)		Growth attrib-uted (%)
	Overall (O)	Latino (L)	O	L	O	L	L
TOTAL U.S.	248,709,873	22,354,059	281,421,906	35,305,818	12	58	40
Baltimore, MD	2,382,172	30,160	2,552,994	51,329	1	69	12
Birmingham, AL	907,810	3,989	921,106	16,598	1	316	95
Boston, MA	4,171,643	193,199	5,819,100	358,231	28	85	10
Buffalo, NY	1,189,288	24,347	1,170,111	33,967	−2	40	—
Burlington, VT	131,439	1,171	169,391	1,709	22	46	1
Chicago, IL	8,065,633	893,422	9,157,540	1,498,507	12	68	55
Cleveland, OH	2,759,823	52,997	2,945,831	80,736	6	52	15
Columbus, OH	1,377,419	11,363	1,540,157	28,115	11	147	10
Denver, CO	1,848,319	226,200	2,581,506	476,627	28	111	34
Detroit, MI	4,665,236	90,947	5,456,428	155,903	15	71	8
Greensboro, NC	942091	7096	1,251,509	62,210	25	777	18
Houston, TX	3,711,043	772,295	4,669,571	1,348,588	21	75	60
Iowa City, IA	96,119	1,435	111,006	2,781	13	94	9
Lebanon, NH*	193,725	1,122	207,845	1,768	7	58	5
Los Angeles, CA	14,531,529	4,779,118	16,373,645	6,598,488	11	38	99
Madison, WI	367,085	5,744	426,526	14,387	14	150	15
Minneapolis, MN	2,464,124	37,448	2,968,806	99,121	17	165	12
Nashville, TN	985,026	7,665	1,231,311	40,139	20	424	13
New Haven, CT	1,949,152	126,609	2,043,839	196,509	5	55	74
New York City, NY	18,087,251	2,777,951	21,199,865	3,852,138	15	39	35
Philadelphia, PA	5,899,345	225,868	6,188,463	348,135	5	54	42
Pittsburgh, PA	2,242,798	12,852	2,358,695	17,100	5	33	4
Raleigh/Durham, NC	735,480	9,019	1,187,941	72,580	38	705	14
Rochester, MN	106,470	970	124,277	2,959	14	205	11
San Diego, CA	2,498,016	510,781	2,813,833	750,965	11	47	76
San Francisco, CA	6,253,311	970,403	7,039,362	1,383,661	11	43	53
Seattle, WA	2,559,164	75,555	3,554,760	184,297	28	144	11
St. Louis, MO	2,444,099	26014	2,603,607	39,677	28	144	11
Tampa, FL	2,067,959	139,248	2,395,997	248,642	14	79	33
Tuscon, AZ	666,880	163,262	843,746	247,578	21	52	48
Washington, D.C.	4,223,485	224,786	4,923,153	432,003	17	192	30

Table 2.

RANKING OF THE CMSA/MSA'S BY PERCENTAGE OF LATINO GROWTH

CCC[a]	CMSA[b]/MSA[c]	Latino growth (rank %)
Sidney Kimmel CCC at Johns Hopkins University	Baltimore, MD[d]	17
The University of Alabama at Birmingham CCC	Birmingham, AL	4
Dana Farber/Harvard Cancer Center	Boston, MA	13
Roswell Park Cancer Institute	Buffalo, NY[e]	26
University of Vermont, Vermont Cancer Center[f]	Burlington, VT[e]	24
Robert H. Lurie CCC of Northwestern University	Chicago, IL	18
University of Chicago Cancer Research Center		
Case CCC/Case Western Reserve University	Cleveland, OH	22
University Hospitals of Cleveland, Cleveland Clinic		
Ohio State University CCC—James Cancer Hospital	Columbus, OH	9
University of Colorado Cancer Center	Denver, CO	11
University of Michigan CCC	Detroit, MI	16
The Barbara Ann Karmanos Cancer Institute, Wayne State University School of Medicine		
Wake Forest CCC, Wake Forest University	Greensboro, NC	1
M. D. Anderson Cancer Center, University of Texas	Houston, TX	15
Holden CCC, University of Iowa	Iowa City, IA[g]	12
Norris Cotton Cancer Center, Dartmouth-Hitchcock Medical Center	Lebanon, NH[g]	19
City of Hope National Medical Center, Beckman Research Institute	Los Angeles, CA	28
University of Southern California Norris CCC		
Jonsson CCC, University of California Los Angeles		
Chao Family CCC, University of California at Irvine		
University of Wisconsin Paul P. Carbone CCC	Madison, WI	8
Masonic Cancer Center, University of Minnesota	Minneapolis, MN	7
Vanderbilt-Ingram Cancer Center, Vanderbilt University	Nashville, TN	3
Yale Cancer Center, Yale University School of Medicine	New Haven, CT[g]	20
Herbert Irving CCC, Columbia University	New York City, NY	27
Memorial Sloan Kettering Cancer Center		
Cancer Institute of New Jersey, Robert Wood Johnson Medical School		
Fox Chase Cancer Center	Philadelphia, PA	21
Abramson Cancer Center, University of Pennsylvania		
University of Pittsburgh Cancer Institute	Pittsburgh, PA	29
University of North Carolina Lineberger CCC	Raleigh/Durham, NC	2
Duke CCC, Duke University Medical Center		
Mayo Clinic Cancer Center	Rochester, MN[e]	5

(Continued on p. 354)

Table 2. (*continued*)

CCC[a]	CMSA[b]/MSA[c]	Latino growth (rank %)
Rebecca and John Moores Cancer Center, University of California, San Diego	San Diego, CA[e]	23
UCSF[h] Helen Diller Family CCC, University of California San Francisco	San Francisco, CA	25
Fred Hutchinson/University of Washington Cancer Consortium	Seattle, WA	10
Siteman Cancer Center, Washington University School of Medicine	St. Louis, MO	10
H. Lee Moffitt Cancer Center & Research Institute, University of South Florida	Tampa, FL	14
Arizona Cancer Center, University of Arizona	Tuscon, AZ[e]	22
Lombardi CCC, Georgetown University	Washington, D.C.[d]	6

[a]CCC = comprehensive cancer center
[b]CMSA = consolidated metropolitan statistical area
[c]MSA = metropolitan statistical area
[d]Primary Metropolitan Statistical Area (PMSA) or MSA inside a CMSA
[e]PMSA or MSA outside a CMSA
[f]As of 11/30/2008, the University of Vermont no longer designated a NCI CCC.
[g]Lebanon and Claremont counties NH, and Orange and Windsor counties, VT. New Haven, and New Haven, Fairfield, Lichfield and Middlesex counties.
[h]UCSF = University of California San Francisco

Type II: Fast and Unstable Growth. Six CMSA/MSAs and the disaggregated New England counties have growth rates ranging from 71% to 94%. This category of pyramids has an expanding base of younger cohorts, an increase in the number of females of childbearing age but is still predominantly male with a slight increase in the fertility base, suggestive of transition to permanent settlement. Elder cohorts in most of these CMSA/MSAs also have slow growth as illustrated by the Iowa City population pyramids (Figure 4a). A variation within this fast and unstable growth category is seen in the Houston CMSA (Figure 4b) where its population composition suggests increasing stability over time across all age cohorts, a wide fertility base, and a shrinking older cohort.

Type III: Moderately Fast and Stable Growth. Eight CMSA/MSAs and the Baltimore/DC CMSA show moderate growth that begins to approximate the overall U.S. Latino population despite large and majority male sub-populations. As illustrated by the Chicago CMSA (Figure 5), CMSA/MSAs in this third group have stable and relatively limited growth across the age-sex cohorts, and show signs of expansion in the older cohorts.

Type IV: Slow and Stable Growth. Only four CMSA/MSAs (Los Angeles and New

Table 3.

CATEGORIES OF GROWTH OF LATINO POPULATION BY STATISTICAL AREA,[a] 1990–2000

I. Very fast & unstable (>100% growth >50% male)	II. Fast & unstable (70–99% growth & >50% male)	III. Moderately fast & stable (40–69% growth & (45–50% male)	IV. Slow & stable (≤39% growth & & 45–50% male)
Birmingham, AL	Boston, MA	Baltimore, MD	Buffalo, NY
Columbus, OH	Detroit, MI	Burlington, VT	Los Angeles, CA
Denver, CO	Houston, TX	Chicago, IL	New York City, NY
Greensboro, NC	Iowa City, IA	Cleveland, OH	Pittsburgh, PA
Madison, WI	Tampa, FL	Philadelphia, PA	
Minneapolis, MN	Lebanon, NH	San Diego, CA	
Nashville, TN		San Francisco, CA	
Raleigh/Durham, NC		Tuscon, AZ	
Rochester, MN		New Haven, CT	
Seattle, WA			
St. Louis, MO			
Washington, D.C.			

[a]Comprehensive Metropolitan Statistical Area (CMSA), Primary Metropolitan Statistical Area (PMSA), Metropolitan Statistical Area (MSA), or New England counties.

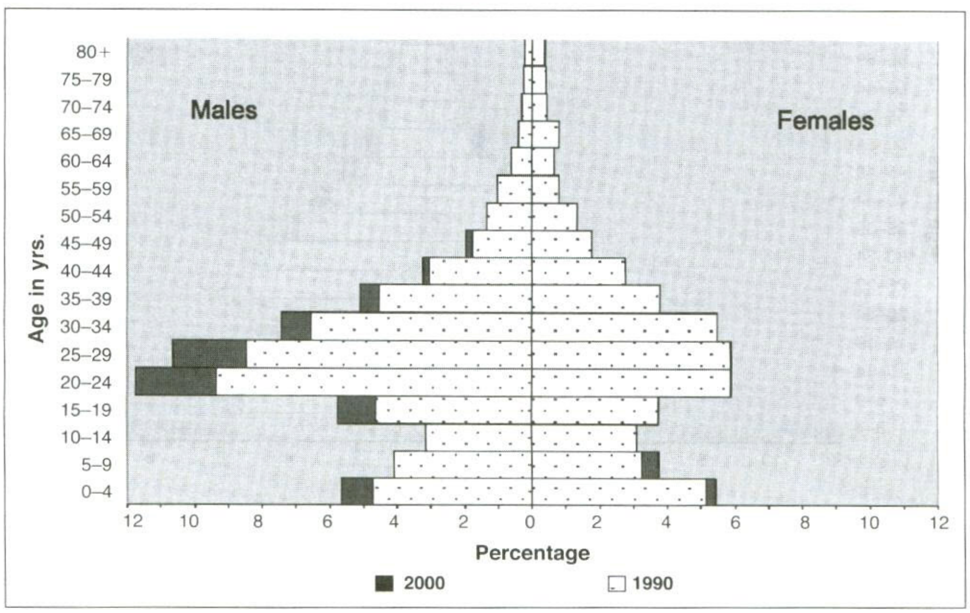

Figure 3. Type I: Raleigh/Durham 1990–2000.

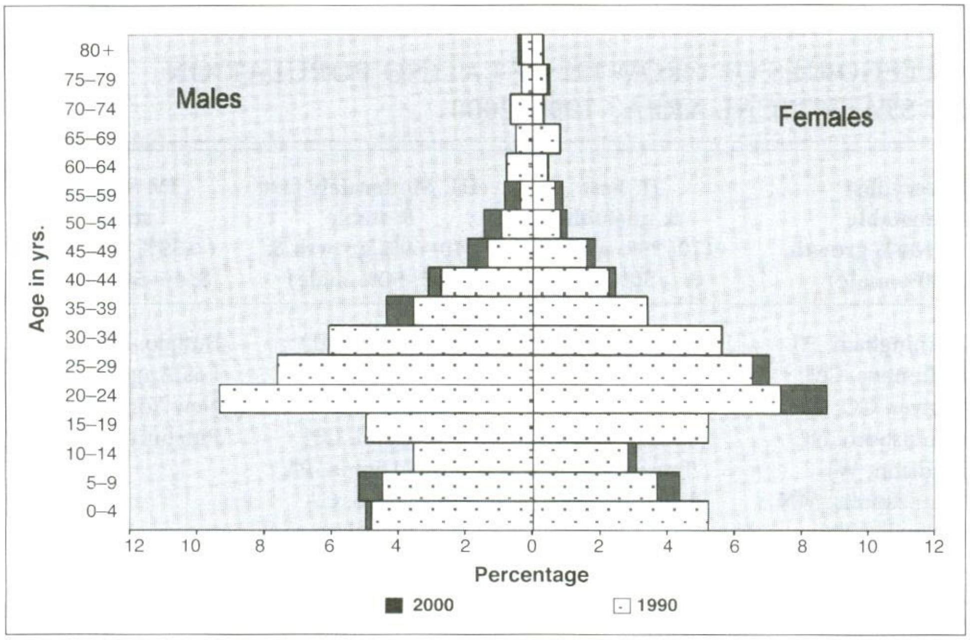

Figure 4a. Type II (fast and unstable) Latino population growth: Iowa City 1990–2000.

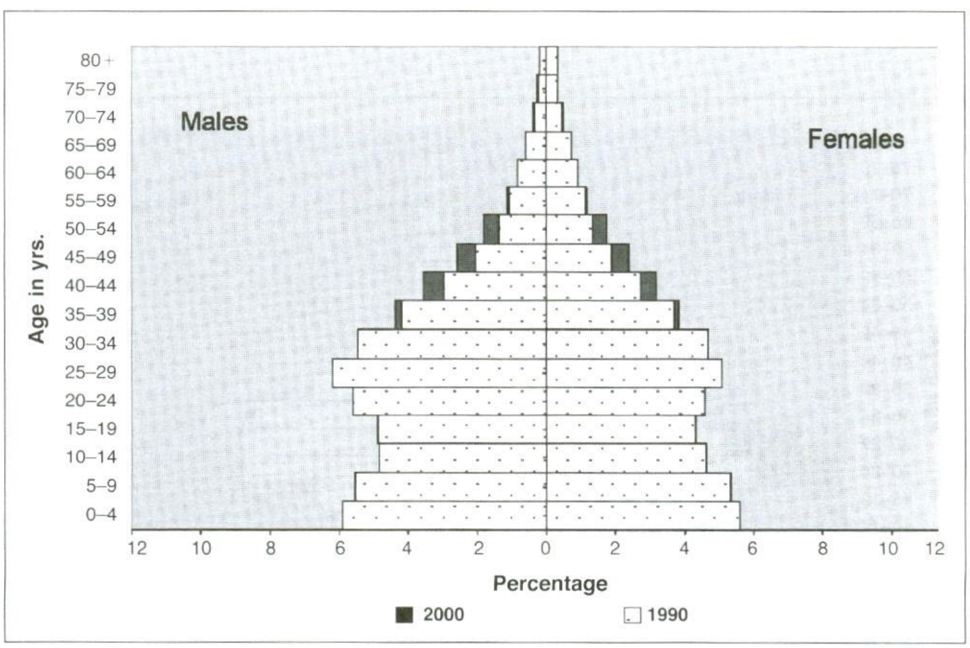

Figure 4b. Type II variant (fast and unstable) Latino population growth: Houston 1990–2000.

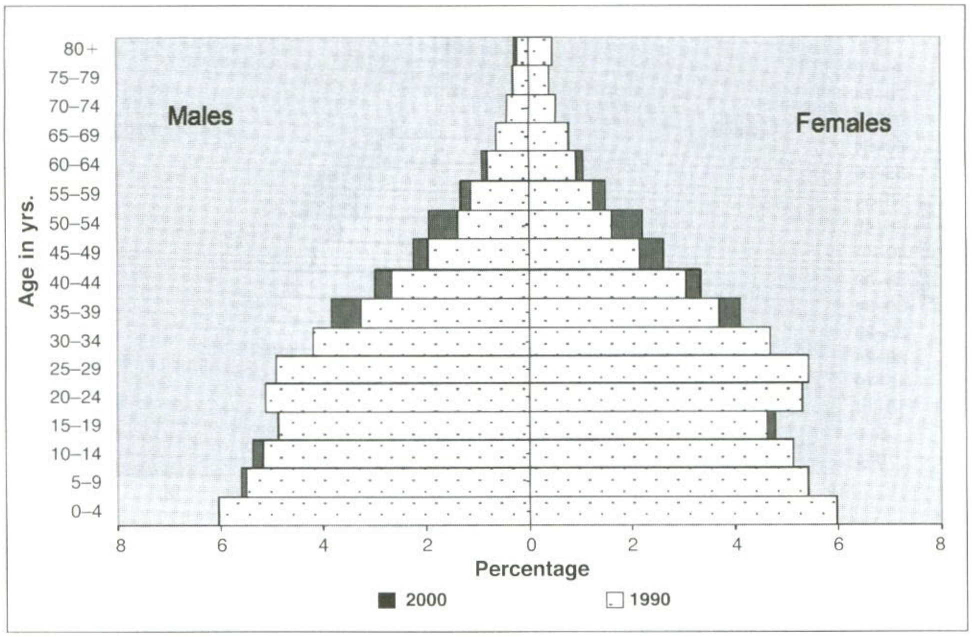

Figure 5. Type III (moderately fast and stable) Latino population growth: Hartford 1990–2000.

York) experienced population growth below 40% between 1990 and 2000, a sign of stable growth and closer resemblance to the overall U.S. population rather than the overall U.S. Latino population. Two of the CMSA/MSAs in this type have the largest populations of Latinos among the CMSA/MSAs selected for study inclusion; the Los Angeles CMSA has 6.6 million and the New York City CMSA has 3.8 million.

The Los Angeles CMSA (pyramids not shown) closely resembles the overall U.S. population among cohorts older than 24 years old, and has a stable fertility base. The sizes of the Los Angeles male and female cohorts are roughly equivalent by year 2000. In contrast, the New York City population pyramid (Figure 6) displays a growing population between the ages of 20 and 29, widening elderly cohorts, and a slight narrowing of its fertility base.

The Pittsburgh CMSA has the lowest percent growth for its entire Latino population, and the largest growth, proportionately, of its elder Latinos, particularly women age 80 or older (Figure 7). This CMSA has moderate growth of its fertility base with little variation in percentages across age-sex cohorts. Compared with all statistical areas, the Pittsburgh CMSA pattern most closely mirrors the demographic transition for the overall U.S. population, particularly the northeastern states. Conversely, the Pittsburgh CMSA least resembles the overall U.S. Latino population.

Of all the examined CMSA/MSAs, Buffalo alone experienced a decrease in its overall population between 1990 and 2000; the opposite is true for its Latino population, which experienced an increase of 40%. Without the growth in the Latino population, the overall population would have declined more rapidly.

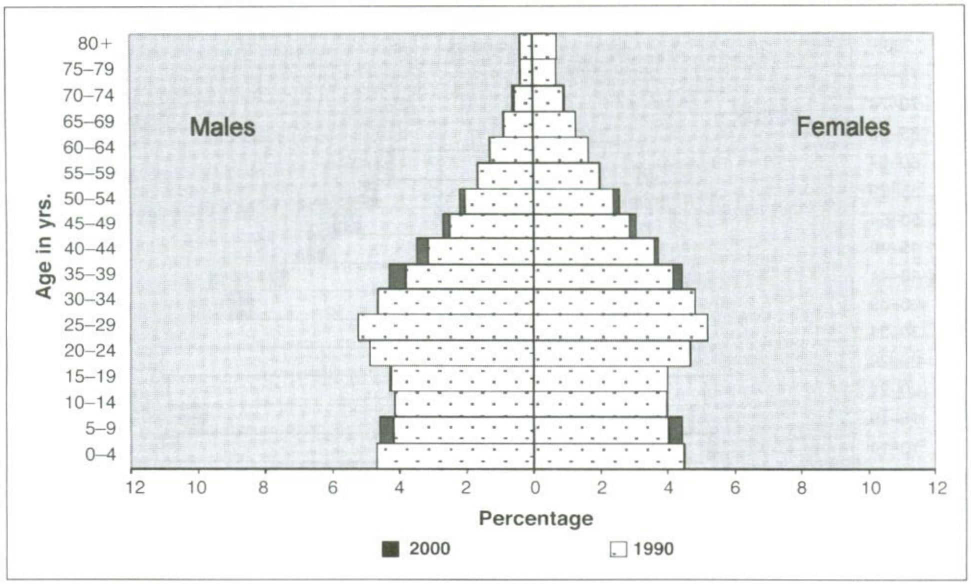

Figure 6. Type IV (slow and stable) Latino population growth: New York City 1990–2000.

Discussion

Most cancer control planning focuses on demographic transitions related to the aging of populations, particularly in countries with declining fertility bases.[21,22] In addition to the rising number of elderly individuals at higher risk for cancer, we predict that by 2050 the U.S. will have an estimated 10 million Latinos in need of cancer treatment and an additional 35 million Latinos who will need cancer screening. Such demographic transitions portend complex challenges for CCCs as they develop policies and programs that are inclusive and culturally acceptable to the Latinos within their communities.

Over time, the demographic profiles of CMSA/MSAs with long-standing Latino communities, such as those found in Houston, Los Angeles, Chicago, and New York City, will likely be indistinguishable from the overall U.S. population (Type IV). Presently, the overall U.S. Latino population appears to be one or more generations behind the population transitions found in the overall U.S. population and appears to follow closely the progression of population changes in other industrialized countries. The fastest-growing Latino populations among the examined CMSA/MSAs (Types I and II) share trends in rising fertility levels and rapid overall growth. They also share patterns that typify new and fast rates of growth in international migration, where males arrive at early labor market ages preceding their families (although some individuals may be U.S.-born people who resettled because of favorable employment opportunities). With aging and continued settlement, we expect that those areas included in Types I and II will eventually transition to Type III with moderately fast but stable growth, and that Type III CMSA/MSAs will eventually transition to Type IV.

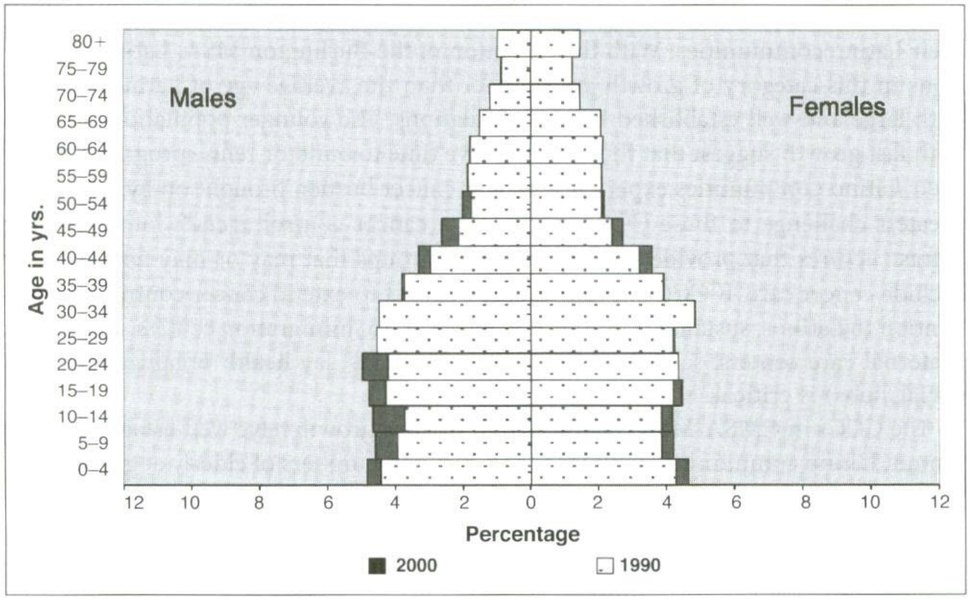

Figure 7. Type V (slow and stable) Latino population growth: Pittsburgh 1990–2000.

The CMSA/MSA population pyramids offer important clues to the type of strategic planning that CCCs must undertake if they are to meet the cancer needs of their Latino communities. Of our four types presented here, those with the fastest growth will experience the greatest challenges to developing infrastructure that targets at-risk Latino populations with limited financial resources but strong social networks and growing social capital. Such infrastructure includes development of trust, culturally-sensitive outreach and education efforts, bridges to community organizations, employers of newly arrived Latinos, immigration services, social services, and individual neighborhoods.

Comprehensive cancer centers within areas of fast and somewhat stable growth are likely to have some community infrastructure that connects academic, state and local public health agencies, and grass-roots advocacy groups around the cancer control needs of Latinos. For example, Boston houses a site for the Cancer Prevention and Control Research Network jointly funded by the Centers for Disease Control and Prevention and the National Cancer Institute (NCI). The Boston metropolitan area uses existing academic and health agencies, including CCCs, community and labor coalitions, and cancer advocacy groups to reduce the burden of cancer in a joint effort, especially among medically underserved individuals.[23] Prior to the past decade, the majority of Latinos in this region were of Caribbean descent. A recent influx of Latinos originating in Central America is contributing to the increase in the Latino growth rate and, subsequently, is contributing to population instability. Thus, one of the many challenges for the CCC within the Boston CMSA is the development of inclusive networks and programs that represent both established and newly arrived Latinos groups.

The few CCCs falling into Type III—moderately fast and stable growth—are the best situated to proactively implement programs to meet the future cancer needs of their Latino communities. With the exception of the Burlington MSA, Latino populations in this category of growth are younger than the average age of Latinos in areas with large and well established Latino populations. The younger populations in areas with fast growth suggest that those CCCs have time to build or refine programs before their Latino communities experience greater cancer burden brought on by aging. The greatest challenge to these CCCs is moving a cancer control agenda into emerging infrastructures that provide services to Latino groups that may or may not currently include cancer care. If CCCs in this category expect to extend cancer control and prevention to Latinos, sustained community outreach (to immigration centers, employers, maternal care centers, schools, religious organizations, lay health organizations, and social clubs) is critical.[24–28]

The CCCs in CMSA/MSAs characterized by slow growth have well-established and vibrant Latino communities with large and growing numbers of elderly at greatest risk for cancer. The CCCs in these areas may best serve their communities by developing an active and reliable presence in Latino communities, and by forming partnerships with community leaders, cancer advocates, and Latino-specific agencies from their communities.

If CCCs are to be successful recruiting Latinos to clinical trials and other cancer control research, CCCs must be perceived by their Latino communities as accessible, culturally and linguistically competent, and as sources of quality care. While we did not attempt to include undocumented individuals in our analyses (the extent of undocumented individuals is at best difficult to measure) it is very likely that the communities that CCCs serve will also have a portion of undocumented individuals in need of cancer screening and care. Some CCCs may not have the experience or infrastructure to handle the care of undocumented immigrants, particularly in new Type I and II CMSA/MSAs. Culturally-relevant outreach efforts by most of these CCCs provide evidence of their commitment to underserved communities. However, such outreach is difficult to sustain in a climate of increasing health care costs, cuts in federal research monies, aging infrastructures, and inadequate reimbursement for Medicare services. Most CCCs are ill-prepared to subsidize the cost of comprehensive cancer services for any population, in part because cancer centers are unable to offset the cost of cancer care with revenues from the treatment of diseases associated with lower costs. Nevertheless, communities with the greatest number of elderly Latinos (i.e., Los Angeles, Houston, Chicago, New York City, and San Diego) must quickly develop or expand programs that meet Latinos' increasing cancer needs.

The inclusion of Latinos in CCC patient populations is a requirement of the National Institutes of Health (NIH) Revitalization Act of 1993 (PL-103-43, Section 206)[29] which compels CCCs to include minorities in Phase III clinical trials in numbers sufficient to conduct statistical analysis of group differences for intervention effects. In support of P30 applications (cancer center grants) to NIH for funding consideration, CCCs are required to submit information about target minority enrollment and a detailed plan for recruitment and retention of minority research participants. Over and above adherence to PL-103-43, we encourage CCCs to consider greater inclusion of Latinos to help address the growing cancer health disparities caused by poor access to large-volume cancer centers. Such centers have nearly double the rates of cancer survival compared with treatment facilities with small volumes.[30-31]

This article is the first to examine demographic transitions of Latino populations with implications for cancer care at CCCs. Even for those Latinos residing in statistical areas with one or more CCCs, substantial problems accessing quality cancer care and clinical trials remain. While we focus on Latinos, a similar examination for other defined groups or additional regions will help CCCs plan comprehensive cancer control programs for the populations they currently serve or will serve.

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