CITIES AND AGEING

Global City Indicators Facility

PHILIPS

CITIES AND AGEING

Global City Indicators Facility
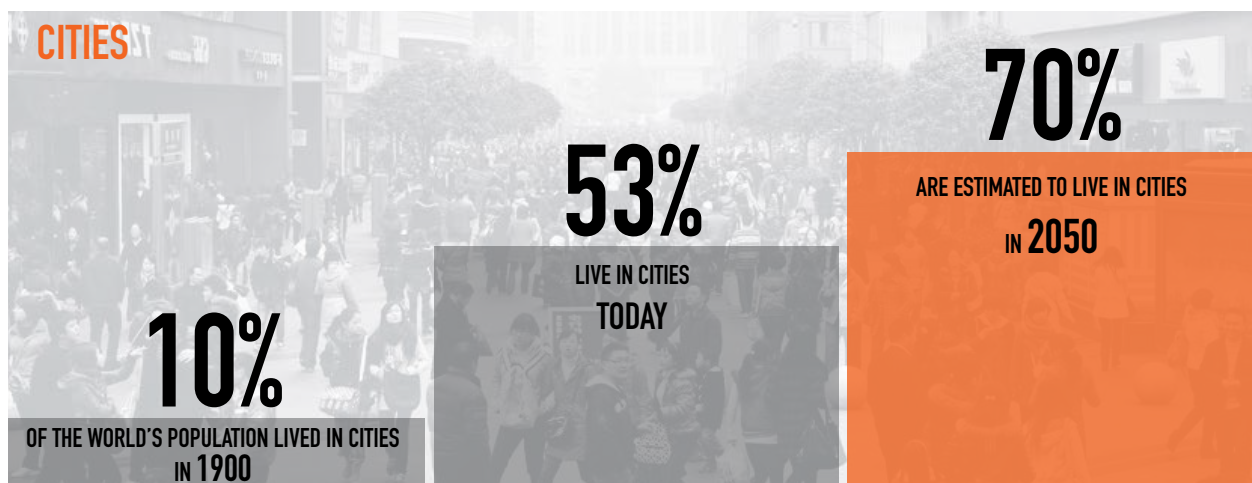
PHILIPS

GCIF PARTNERS

AGEING IN THE CITY

I.   A TILTING GLOBAL DEMOGRAPHIC BALANCE

TWO CRITICAL DEMOGRAPHIC SHIFTS ARE OCCURRING GLOBALLY

FIRST, THE TILT TOWARDS AN URBAN PLANET THAT STARTED IN 2007 HAS LED TO URBANIZATION BECOMING A DEFINING PHENOMENON OF THE 21ST CENTURY. By 2050 it is predicted that 70 percent of the world population will be urbanized.

CITIES

10%
OF THE WORLD'S POPULATION LIVED IN CITIES
IN 1900

53%
LIVE IN CITIES
TODAY

70%
ARE ESTIMATED TO LIVE IN CITIES
IN 2050

SECOND, AT A GLOBAL LEVEL, THE NUMBER OF PEOPLE OVER 65 YEARS OF AGE WILL INCREASE BY 183 PERCENT, FROM 522 MILLION PEOPLE IN 2010 TO CLOSE TO 1.5 BILLION BY 2050. Significant advancements in human development, increased living standards and improved public health have resulted in a global population that lives longer. By 2045, elderly people[i] will out-number children under 15 for the first time in history, resulting in more people requiring ongoing care (Philips, 2013). Global life expectancy has risen from 47 years in the 1950s to about 70 years of age today.

AGEING

522M
GLOBAL POPULATION AGED 65+
IN 2010

1,474M
GLOBAL POPULATION AGED 65+
IN 2050

AN INCREASE OF
183%
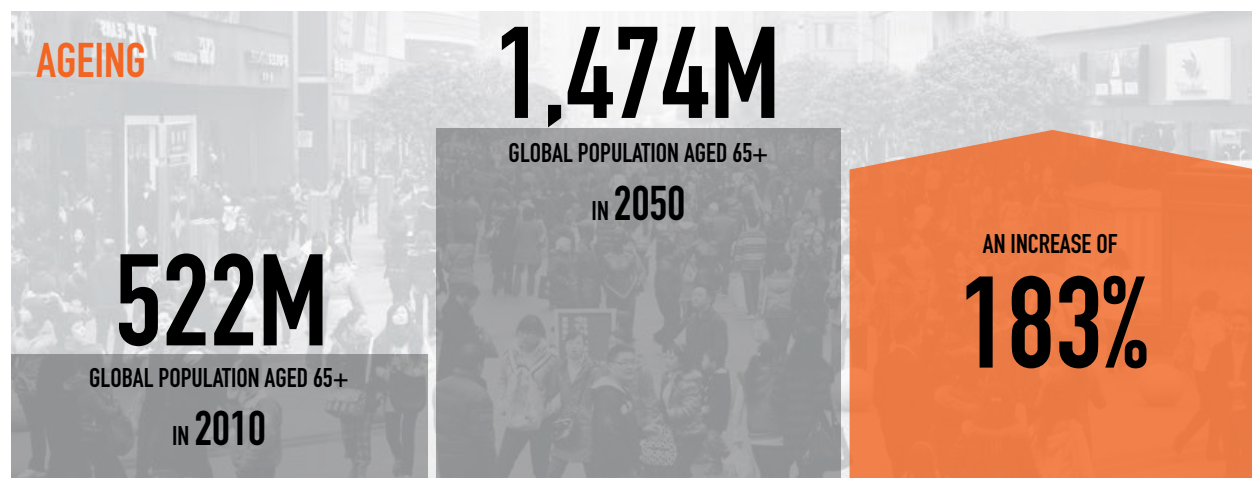
WHAT ARE THE IMPLICATIONS OF THESE TWO GLOBAL DEMOGRAPHIC TRENDS AND THEIR CONVERGENCE? As cities become more and more dominant in demographic terms, this rapidly ageing world signifies rapidly ageing cities.

With people living longer in cities, how do we plan the urban physical, economic and social environment to ensure an urban quality of life for ageing populations? How do we ensure robust economic prosperity alongside supportive financial frameworks?

The World Health Organization (WHO) has recognized the critical convergence of these demographic transitions. **"MAKING CITIES AGE-FRIENDLY IS ONE OF THE MOST EFFECTIVE POLICY APPROACHES TO RESPONDING TO DEMOGRAPHIC AGEING" (WHO 2010).** WHO defines an "age-friendly" city as one that promotes active ageing by optimizing opportunities for health, participation, and security in order to enhance quality of life as people age (WHO, 2007).

THE IMPLICATIONS OF AGEING IN CITIES IN TERMS OF PHYSICAL PLANNING AND DESIGN ARE VAST when considering health services and heightened demand for care facilities, notions of ageing in place, mobility and infrastructure, street design, density, access to commercial services, and technology.

THE GLOBAL AND NATIONAL IMPLICATIONS OF AGEING CITIES FOR ECONOMIC PRODUCTIVITY ARE ALSO FAR-REACHING: cities are responsible for greater than 70 percent of the world's GDP. The challenges in terms of economic productivity and labour supply, for income security and its corollary - housing security, pensions, other social security nets and tilting dependency ratios point to over-arching political and economic policy challenges in cities.

Policy decisions at the city level are vital to the state of the world's ageing population. Evidence based decision-making, facilitated by sound data is invaluable in maneuvering through these demographic transitions. The Global City Indicators Facility (GCIF) has developed a body of city indicators to inform and guide city leaders to better confront these challenges associated with what can be termed a framework for **"AGE FRIENDLY CITY POLICY, PLANNING & DESIGN."**

The GCIF indicators conform to a standardized methodology that ensures sound global comparison and learning across cities, making globally comparative research and exchange possible. The Global City Indicators Facility (GCIF), now situated in the University of Toronto with over 250 participating cities globally (refer to Box 1 for map of GCIF cities), is positioned as a global leader and center of excellence on globally standardized city metrics. The GCIF builds strategic comparative frameworks and a transnational network of global city leaders, key international organizations, industry innovators, scholars and students.

Box 1: The Global City Indicators Facility

The Global City Indicators Facility (GCIF) responds to the urgent need for a globally standardized set of city indicators. GCIF hosts a network of over 250 cities and provides a globally standardized system for data collection that allows for comparative knowledge and learning across cities globally.

GCIF MEMBERS – 252 CITIES ACROSS 80 COUNTRIES

Cities are the cultural and economic centres of the world whose progress depends upon effective management and evidence-based policy making. The prospective power of city indicators, in this age of urbanization, can be used as critical tools for city managers, politicians, researchers, business leaders, planners, designers and other professionals to help ensure policies are put into practice that promote liveable, tolerant, sustainable, economically attractive and prosperous cities globally.

The GCIF is designed to help cities monitor city service performance and quality of life by providing a framework to facilitate a consistent and globally comparative collection of city indicators. The GCIF Indicators are structured around 20 themes and measure a range of city services and quality of life factors which supports and provides a framework for sustainability planning. The current set of global city indicators was selected based on a pilot phase with nine cities and from significant input from the current member cities, ensuring that these indicators reflect city information needs, interests, and data availability.

The Global City Indicators Facility (GCIF) indicators provide cities with the necessary metrics and analytics to observe the aging trend at the city level and track progress in the delivery of service and a quality of life to its ageing citizens.

Sound metrics collected according to a global standard for comparability across cities builds a vital dialogue about the forces that are reshaping the global landscape. While global and national level demographic data is more readily available than city level data, the GCIF is now tracking life expectancy in cities and age cohort transitions with respect to ageing populations in cities worldwide.

In 2011, the World Health Organization reported average global life expectancy at 70 years. In Figure 1, life expectancy in a selection of cities ranges from 43 years in Bulawayo, Zimbabwe to 84 years in Brisbane, Australia.

Figure 1 – Average Life Expectancy in Cities, 2012 [ii]
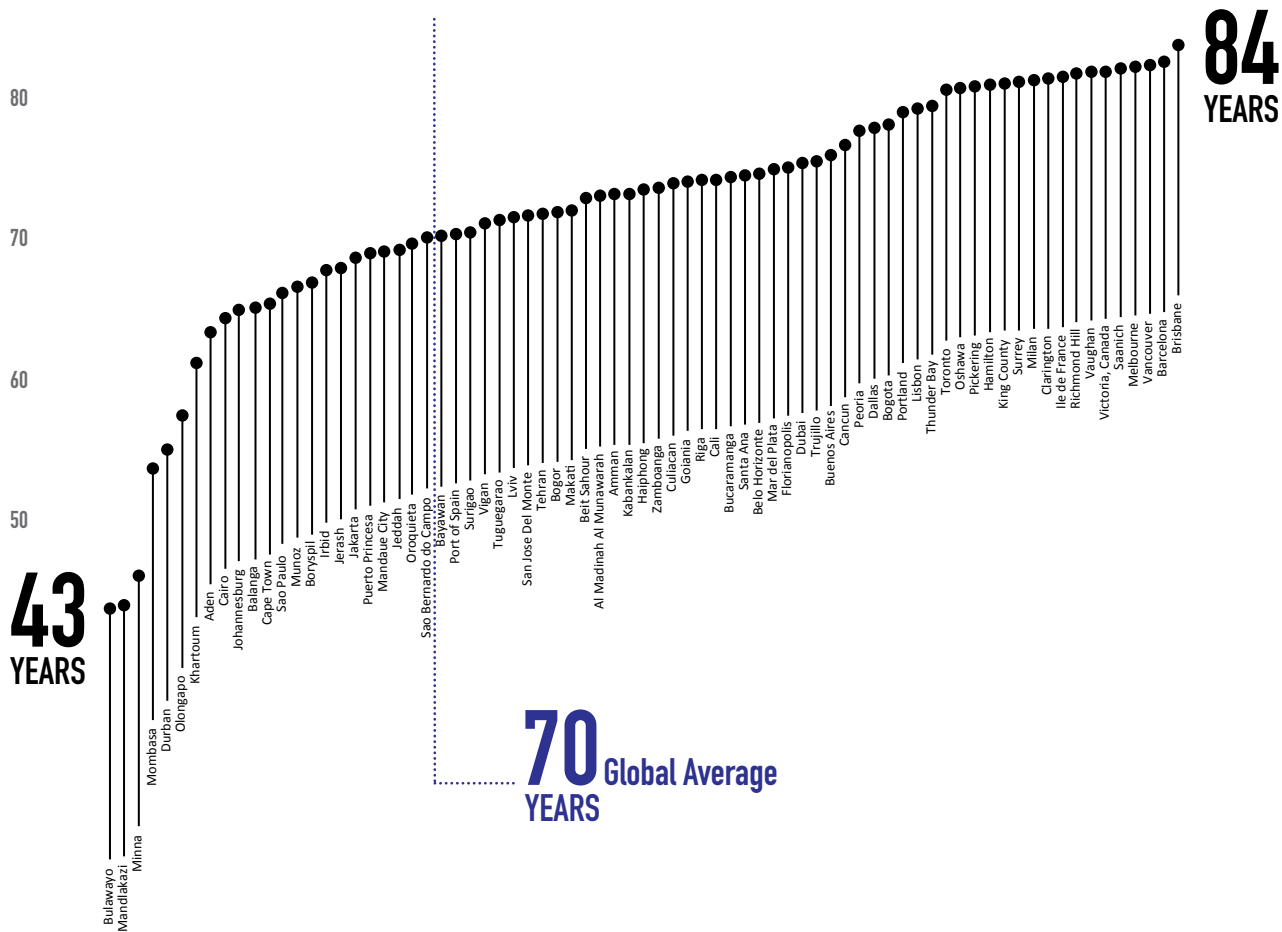
Average life expectancy across selected Global City Indicator Facility (GCIF) member cities (for GCIF member cities – refer to Box 1).

II.   AGEING IN THE WORLD'S REGIONS

Growth in the world's population over the age of 65 will increase by 183 percent by 2050 to 1.47 billion people. This global demographic transition manifests differently across the world's regions. Two regions experiencing the largest percentage change in this period, Africa with a 291 percent increase and West Asia–North Africa with an astonishing 366 percent increase, are also regions experiencing high rates of urbanization, where cities will require innovative interventions to accommodate such rapid transformation.

Examining the projected shift in population distribution by age cohort in each world region between 2010 and 2050 informs varying challenges and policy implications (Figures 2A & B). In general, all regions will be experiencing a growing percentage of elderly people in the age cohort of 65+ in the period 2010 to 2050[iii]. While Africa, Latin America, Asia and West Asia-North Africa, have stronger youthful cohorts today than the rest of the developed world, with the exception of North America and Europe, the percentage of children under 14 year of age will decline as an age category in these regions in this period until 2050. These regional trends suggest that structural changes in society may be necessitated as resources are redistributed to care for ageing populations.

Despite these significant shifts projected between 2010 and 2050 for percentage distributions across age cohorts (Figure 2A), a glimpse of the actual growth in numbers of ageing population over this same period is even more dramatic (Figure 2B and Table 1). Globally, the number of seniors over the age of 65 will increase by 183 percent by 2050, meaning an additional 952 million seniors will be added to the global population. Asia-Pacific and South Asia will constitute the largest part of this increase, adding 514.5 million seniors to the world in this period. The overall number of seniors in Africa will rapidly increase as life expectancies are extended.

Table 1: Regional projections for population aged 65 and over (millions)

| | POPULATION AGED 65+ | | |
| | | NOMINAL | |
REGION	2010	2050	CHANGE	% CHANGE
Global	521.8	1,474.1	952.3	183
West Asia-North Africa	29.8	138.9	109.1	366
Africa	27.5	107.6	80.1	291
South Asia	70.1	257.0	186.8	267
Latin America & Caribbean	40.6	145.8	105.2	259
Asia-Pacific	180.5	508.2	327.7	182
Oceania	3.9	10.5	6.6	171
North America	45.3	96.6	51.2	113
Europe-Central Asia	124.0	210.0	86.0	69

As indicated in Table 1, THE POPULATION AGED 65 AND OVER IN DEVELOPING COUNTRIES IS EXPECTED TO MORE THAN TRIPLE BY 2050, OUTPACING THE GLOBAL GROWTH RATE OF THIS AGE SEGMENT. The challenges are even more complex in developing nations that must deal with the effects of an aging population in addition to the burdens of poverty. In Africa, ageing is not visible in most policy dialogue, and so tends to be deprioritized in terms of budgetary allocations, thereby increasing the vulnerability and marginalization of older Africans (Nadalamba & Chikoko, 2011).

Figure 2A — Population Distribution by Age Cohort and World Region — 2010 and 2050 [iv]

Legend:
- 65+
- 15 - 64
- % aged 0 - 14

North America — 2010, 2050
Latin America & Caribbean — 2010, 2050
West Asia–North Africa — 2010, 2050
Africa — 2010, 2050
Europe & Central Asia — 2010, 2050
South Asia — 2010, 2050
Asia–Pacific — 2010, 2050
Oceania — 2010, 2050
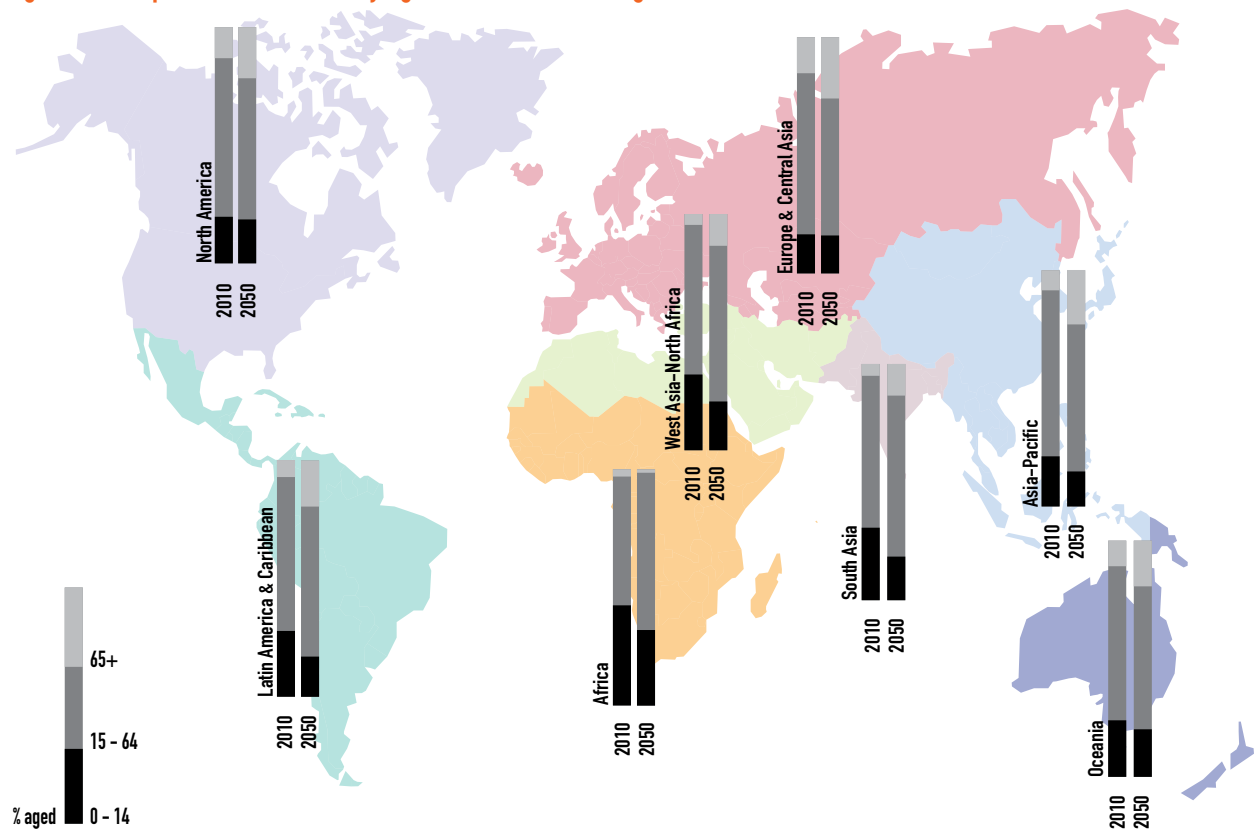
Figure 2B — Changes in Population Aged 65+ by World Region — 2010 to 2050 [iv]

113% INCREASE (51 MILLION)

69% INCREASE (86 MILLION)

366% INCREASE (109 MILLION)

182% INCREASE (328 MILLION)

267% INCREASE (187 MILLION)

259% INCREASE (105 MILLION)

291% INCREASE (80 MILLION)

171% INCREASE (7 MILLION)
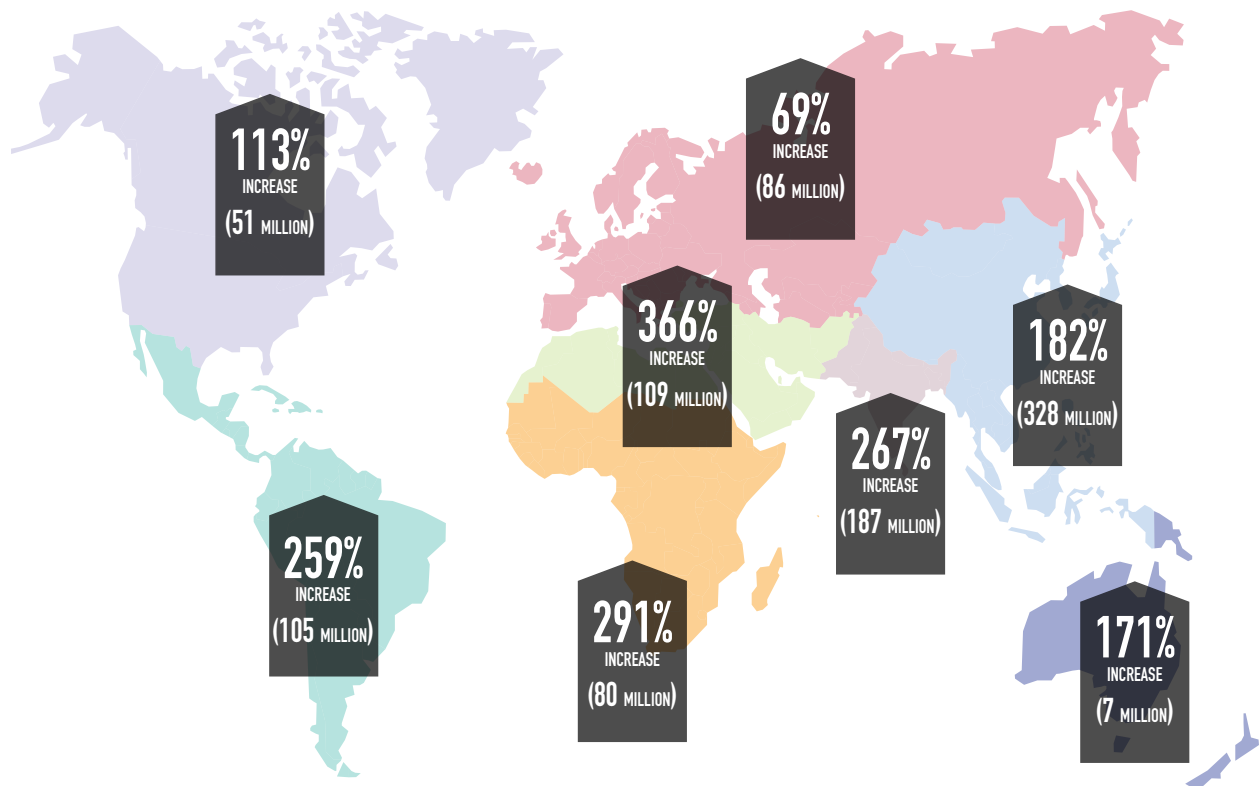
III.   AGEING IN THE WORLD'S CITIES

These demographic pressures create a new set of policy challenges, particularly at the city level. The global and regional predictions tracked above, particularly in those regions with rapid urbanization rates, indicate that policy decisions at the city level are becoming increasingly vital to the state of the world's ageing population.

GCIF has been tracking age cohorts in cities with a view to building a trend analysis over the next few decades to assist city leaders in managing the new challenges arising as their ageing population cohort expands. A sample of cities globally and their respective age cohorts in comparative perspective (Table 2) is already informative for cities, to identify peer comparators, and when correlated with other GCIF indicators in the field of health care for example, to assist city leaders in planning for these transitions ahead.

In this sample of cities, Tokyo, Barcelona and Milan are cities with the largest percentage (upwards of 20 percent) of their population over 65 years of age. Milan has one of the largest senior citizen cohorts with almost a quarter of the population being over 65 years of age. It is also one of the cities globally with a relatively small cohort of children (12 percent or less of the total population of the city) under the age of 14 years of age, which is similar to cities in China, and also Moscow, Tokyo and Barcelona. Hence Milan has twice as many elderly as children in the city. Barcelona is also facing a similar imbalance with 12 percent of its population under 14 years of age but 21 percent over 65 years of age. Beijing, Tianjin and Shanghai, while having small cohorts of children (8 percent of their population), do have a more equal share of elderly (9 percent, 9 percent and 10 percent, respectively). However, the actual magnitude of this population of elderly in the cities, some 2.4 million seniors in Shanghai – is daunting and is as large as the other cities' total population profiled here. What is even more telling, and will become more evident as the years of GCIF data reporting become longer term, is the 25 to 64 age cohort. This adult cohort is similar across most of the cities referred to in Table 2, at close to 60 percent of the population but for the Chinese cities it is higher, and closer to 65 percent of the population. The trend toward ageing cities will deepen as this next cohort ages over the next few decades.

The variation in age cohorts across cities globally is also seen across cities in the same country. For example in Canada, the percentage of population that is over the age of 65 varies in Canadian cities from as low as 6 percent and as high as 26 percent (refer to Box 2).

Table 2: Age Cohorts for Selected Cities — Percentage Distribution and Actual, 2012 ᵛ

City Name	0 - 14	15 - 24	25 - 64	65+	Total
JOHANNESBURG	23% 1,028,880	18% 817,338	54% 2,405,007	4% 183,602	100% 4,434,827
BEIJING	8% 1,700,943	19% 3,849,932	64% 12,886,764	9% 1,748,361	100% 20,186,000
TIANJIN	8% 629,909	19% 1,564,608	64% 5,232,466	9% 710,217	100% 8,137,200
SHANGHAI	8% 1,974,337	16% 3,754,690	65% 15,350,135	10% 2,395,439	99% 23,474,600
BRISBANE	20% 409,638	15% 295,510	56% 1,135,166	10% 197,686	101% 2,038,000
SEOUL	14% 1,355,303	14% 1,319,263	63% 6,027,960	10% 928,956	100% 9,631,482
SINGAPORE	16% 626,300	14% 523,400	60% 2,289,900	10% 378,700	100% 3,818,200
LONDON	19% 1,531,169	13% 1,101,631	57% 4,636,392	11% 904,749	100% 8,173,941
NEW YORK	18% 1,475,878	14% 1,151,091	56% 4,605,747	12% 1,012,194	100% 8,244,910
MELBOURNE	18% 767,115	14% 575,336	55% 2,280,499	13% 546,152	100% 4,169,103
MOSCOW	12% 1,417,143	13% 1,538,040	61% 7,143,884	14% 1,639,480	100% 11,738,547
TORONTO	15% 418,530	13% 357,145	58% 1,629,476	14% 385,047	100% 2,790,200
BUENOS AIRES	16% 471,095	14% 395,951	54% 1,549,121	16% 462,424	100% 2,890,151
MADRID	14% 440,359	9% 293,033	58% 1,877,680	19% 626,865	100% 3,237,937
TOKYO	11% 1,477,000		68% * 8,850,000 *	20% 2,462,000	100% 13,159,000
BARCELONA	12% 199,240	9% 144,166	58% 939,507	21% 338,546	100% 1,619,839
MILAN	12% 167,163	4% 49,689	60% 808,674	24% 324,739	100% 1,350,265

* Population aged 15–24 and 25–64 combined

Box 2: Age Cohorts in Canadian Cities

CITY NAME	TOTAL CITY POPULATION	POPULATION ESTIMATE BY AGE COHORT				% OF POPULATION BY AGE COHORT			
		0-14	15-24	25-64	65+	0-14	15-24	25-64	65+
Banff	7,590	790	1,440	4,880	480	10%	19%	64%	6%
Whitby	122,022	25,344	17,254	66,831	12,593	21%	14%	55%	10%
Newmarket	79,985	14,900	11,975	44,215	8,895	19%	15%	55%	11%
Vaughan	288,310	58,460	39,555	158,105	32,190	20%	14%	55%	11%
Richmond Hill	194,089	35,188	27,114	109,874	21,913	18%	14%	57%	11%
Mississauga	713,445	128,765	104,320	398,895	81,465	18%	15%	56%	11%
Edmonton	817,498	139,792	116,085	467,609	94,012	17%	14%	57%	12%
Pickering	94,000	16,111	14,490	52,327	11,073	17%	15%	56%	12%
Clarington	84,545	16,150	12,045	46,200	10,150	19%	14%	55%	12%
Surrey	483,690	91,900	67,717	266,030	58,043	19%	14%	55%	12%
Markham	301,709	52,497	41,938	170,164	37,110	17%	14%	56%	12%
Saskatoon	222,190	37,805	35,970	120,015	28,400	17%	16%	54%	13%
Smithers	5,405	1,110	780	2,810	705	21%	14%	52%	13%
Guelph	121,700	21,545	17,280	67,025	15,850	18%	14%	55%	13%
Vancouver	603,502	71,334	73,386	376,827	81,956	12%	12%	62%	14%
Toronto	2,790,200	418,530	357,146	1,629,477	385,048	15%	13%	58%	14%
Oshawa	149,615	24,915	20,310	82,505	21,885	17%	14%	55%	15%
St. John's	106,172	14,705	15,841	60,040	15,586	14%	15%	57%	15%
Montreal	1,649,519	247,923	206,850	944,185	250,562	15%	13%	57%	15%
Hamilton	519,950	85,715	72,575	280,085	81,575	16%	14%	54%	16%
Medicine Hat	59,985	10,545	7,465	32,340	9,635	18%	12%	54%	16%
Thunder Bay	109,140	16,098	14,363	59,470	19,209	15%	13%	54%	18%
Saanich	109,752	15,047	15,585	59,069	20,052	14%	14%	54%	18%
Victoria	80,017	7,282	9,554	48,466	14,715	9%	12%	61%	18%
St Catharines	131,400	19,539	17,844	68,604	25,413	15%	14%	52%	19%
Rexton	825	105	75	445	200	13%	9%	54%	24%
Windsor	3,790	505	510	1780	995	13%	13%	47%	26%

The age distribution amongst Canadian cities shows great variation[vi]. The resort community of Banff has the lowest percentage of senior population due to the very high proportion of young adult and adult workers. Victoria and Saanich on the west coast of Canada – long known as retirement destinations – have higher proportions of seniors. Two Eastern Maritimes cities – Rexton, NB and Windsor, NS – stand out for having high senior populations. There is also a distinct core versus suburban trend that warrants further study - cities outside of Toronto in the broader Toronto Urban Region have a relatively lower percentage of senior populations, and higher percentage of children than Toronto.

Cities are in a key position to tackle the challenges of their ageing populations. Urban centres are the heart of a nation's technological progress, drivers of economic prosperity, and key actors in cultural, social and political development. As cities confront the challenges associated with ageing populations, the need for innovative and informed policy in several key areas is needed. Evidence-based decision-making, facilitated by city indicators is invaluable to city leaders maneuvering through this demographic transition.

This policy brief will discuss the elements of an age-friendly city, build a strategic platform for what can be termed "Age Friendly City Policy, Planning & Design" and recommend how knowledge and information on cities through the collection of standardized indicators will equip cities in the transition.

IV   WHO IS DOING WHAT?

Governments, businesses, community groups, planners and designers, health care specialists, and innovators are beginning to recognize the change in demographics with respect to our ageing population and the need for a measured response.

The Philips Centre for Health and Well-Being has been established in The Netherlands as a knowledge-sharing forum (refer to Box 3). The Centre has two initiatives that address the issues of ageing and the city -- 'Livable Cities' and 'Active Ageing'. As part of the Centre, the Philips Ageing Well Think Tank looks at how we equip societies to cope with an ageing population and support individuals to age well.

Box 3 – Philips: Innovation for Ageing Well and Ageing in Place

Governments, civil society, businesses, and innovators are beginning to recognize the demographic transitions of ageing and urbanization and the need for a measured response. For example, Royal Philips of the Netherlands is leading the discussion around innovation and the integration of technology and design for ageing well.

The Philips Centre of Health and Well-being has developed knowledge-sharing forums around 'Liveable Cities' and 'Active Ageing' to facilitate discussion of the barriers and possible solutions facing older populations in cities. The Centre facilitates the Active Ageing think tank, which looks at how to equip societies to cope with an ageing population and support individuals to age well. The think tank aims to challenge society to re-imagine ageing and believes that the challenge of increasing longevity can only be met by rethinking conventional wisdom around ageing.

Independence and engagement with the community are believed to be the key quality of life factors that people want to maintain as they age. The Journal of Housing for the Elderly defines "ageing in place" as not having to move from one's present residence in order to secure necessary support services in response to changing needs. The concept combines the goals of independent living and ageing well.

The Philips Centre for Health and Well-being suggests that technology is at the core of ageing in place. The Centre argues that in the United States, technology could help reduce the 34 percent share of the total healthcare spending racked up by seniors who today account for just 12 percent of the country's population (Orlov, 2011). Four key categories of active ageing technologies have been identified to support "ageing in place":

- Communication and engagement: Simplified information technology to stay in touch with family members and their community
- Safety and Security: Mobile personal emergency response systems and fall detection devices monitoring to reassure seniors and their caregivers.
- Health and Wellness: Technology to help older people stay active and manage chronic diseases, such as diabetes and congestive heart failure.
- Learning and Contributing: Innovations to allow seniors to keep reading, learning and staying active in and knowledgeable about society.

Identifying ways for local governments to integrate these technologies can reduce the burden on urban health care systems while allowing older people to maintain independence so they can continue to contribute meaningfully to their local communities.

The Philips Centre for Health and Well-being is based in Amsterdam, The Netherlands. More information is available at: http://www.philips-thecenter.org/

The World Health Organization (WHO) has recognized the critical trend in ageing worldwide and has identified cities as key in meeting the challenges of this demographic transition: "Making cities age-friendly is one of the most effective policy approaches to responding to demographic ageing" (WHO 2010). WHO defines an "age-friendly" city as one that promotes active ageing by optimizing opportunities for health, participation, and security in order to enhance quality of life as people age (WHO, 2007). The WHO has developed a Global Age-friendly Cities Guide and has also created the Global Network for Age-Friendly Cities, which aims to foster the exchange of experience and mutual learning between cities and communities worldwide. (Refer to Box 4)

Global initiatives such as these are increasingly being complemented by local action. Cities are beginning to address questions of ageing in their cities in response to the pending demographic shift being recognized globally and nationally. In 2012, the City Council of Brisbane, Australia adopted a five-year Seniors Strategy 2012-2017 (refer to Box 5), which focuses on what Council can do to support seniors' participation in the community (Brisbane City Council, 2012). Similarly, in 2013, the City of Toronto, Toronto released its Seniors Strategy to prepare for the demographic shift. The Strategy was developed around four key service planning principles to guide City decision-making and priority-setting around equity, inclusion, respect, and quality of life (City of Toronto, 2013).

Box 4 – Policy Framework on Active Ageing – WHO

In 2002, the World Health Organization (WHO) released a Policy Framework on Active Ageing to support local governments to formulate action plans that promote healthy and active ageing. Four years later, WHO brought together 33 cities in 22 countries for a project to help determine the key elements of the urban environment that support active and healthy ageing. The result was the Global Age-friendly Cities Guide, which details the ways for cities to become more age-friendly.

To build on this programme, WHO also established the Global Network of Age-Friendly Cities and Communities to foster the exchange of experience and learning across cities worldwide. The network is described at: http://www.who.int/aging/age_friendly_cities_network/en/index.html

Since the release of the Global Age-friendly Cities Guide, cities worldwide are developing strategies for creating inclusive and accessible urban environments to benefit their ageing populations.

More information about the WHO Global Network of Age-Friendly Cities and Communities, including how to join, is available at: http://www.who.int/ageing/en/

V   AGE–FRIENDLY CITY POLICY, PLANNING & DESIGN

The 2007 WHO report, Global Age-Friendly Cities: A Guide (Box 4) describes the urban features that promote active ageing and how the concept of "active ageing" can guide the development of age-friendly cities. It details those areas of urban living of concern to older people, including accessibility and transportation, housing, social participation, respect and social inclusion, civic participation and employment, community and information, and community support and health services. Cities are beginning to develop strategies and action plans that will guide policy decisions and delivery of city services. (Refer Box 5 – example: Brisbane)

Box 5 – Adopting an Age-friendly Strategy to Guide City–level Action (Brisbane, Australia)

Brisbane's City Council adopted the Seniors' Strategy 2012-2017 Delivering a Seniors-friendly City, which focuses on what Council can do to support seniors' participation in the community and considers how the Council can tap into the enormous wealth of knowledge and experience seniors have to contribute to their City (Brisbane City Council, 2012). The strategy complements the City's Taskforce into Retirement and Aged Care and the Brisbane Access and Inclusion Plan 2012-2017. The Inclusion Plan identifies five areas of work for the City:

1. Pedestrian mobility and transport
2. Planning, development and infrastructure
3. Public buildings, venue and outdoor spaces
4. Vibrant, informed and caring communities
5. Customer service and governance

WHO defines an "age-friendly" city as one that promotes active ageing by optimizing opportunities for health, participation, and security in order to enhance quality of life as people age (WHO, 2007).

Cities are in a key position to tackle the challenges of their ageing populations. Urban centres are the heart of a nation's technological progress, drivers of economic prosperity, and key actors in cultural, social and political development. As cities confront the challenges associated with ageing populations, the need for innovative and informed policy in several key areas is needed. Evidence-based decision-making, facilitated by city indicators are invaluable to city leaders maneuvering through this demographic transition.

> The elements of an age-friendly city, are set out in the framework – "Age-Friendly City Policy, Planning & Design."

This framework is referred to in Figure 3.

Figure 3: Elements of Age-Friendly City Policy, Planning & Design

AGE-FRIENDLY CITY POLICY, PLANNING & DESIGN

Urban Form & Ageing in Place
Walkability | Housing | Mobility & Transport

Health & Social Well-being
Health Services | Integration & Inclusion

Technology, Information & Communications
IT & Staying in touch | Emergency response | Managing health & disease

Sustainable Economic Development
Dependency ratios, old-age security, poverty
Productivity, employment and immigration

1.   Urban Form and Ageing in Place

The implications of ageing in cities for re-thinking urban form, in terms of physical planning and design, are vast and require an integrated approach when considering the complexity of health services and a heightened demand for care facilities, notions of ageing in place, mobility and infrastructure, street design, density, mixed uses, access to commercial services, and technology. In their research on age-friendly cities, Plouffe and Kalache (2010) argue that "the city's landscape, buildings, transportation system, and housing contribute to confident mobility, healthy behaviors, social participation, and self-determination, or, conversely, to fearful isolation, inactivity, and social exclusion."

In North America, planners argue that cities can become more amenable to seniors through careful intensification that will lure younger seniors out of car-dependent single-family homes where they raised their children (Lorinc, 2008). The car-oriented suburbs of North American cities become less and less accessible environments for people as they age and especially once they can no longer drive. Pedestrian facilities are limited in these environments and grocery shops, banks, pharmacies and other critical commercial services for seniors are not often within walking distance of the home. Elinor Ginzler

from the Jewish Council for the Ageing, writes that "the ability to age in place is greatly determined by the physical design and accessibility of a home, as well as community features like the availability of nearby services and amenities, affordable housing and transportation options" (Ginzler as quoted in Brody) (Brody, 2012).

As people age, their mobility and physical capacity changes. For some physical mobility becomes limited and can be assisted by a mobility device such as canes, walkers, and motorized wheelchairs. For others their physical mobility changes so they can no longer drive. Limited mobility is an area of concern in older adults as it can lead to isolation. As the population aged 65+ in cities grows, cities will need to ensure that older persons can maintain their independence by providing accessible transport alternatives to driving (i.e., transit and walking), support for older drivers, and access to public spaces for social interaction and recreation for different mobility needs.

Improving accessibility for older persons can include a variety of strategies such as wide, tree-lined sidewalks providing shade and places to rest (i.e., benches), improving wheelchair and walker access to public spaces (i.e., theatres, libraries, places of worship, parks, etc.), and improving signage and lighting. All of these actions can allow older populations to feel comfortable while getting around the city and still be able to access goods and services and participate in employment, recreation, and learning (ALGA, 2006).

Access to green space and recreation areas has significant impacts on health and well-being. For example, a study of some 500 older adults from 56 neighbourhoods in Portland, Oregon, found that both the number of recreation facilities and the areas of green or open space were significantly related to high levels of walking (Li, Fisher, & Brownson, 2005). The health benefits of walking for older adults are significant. Walking can help older adults manage weight, control blood pressure, decrease their risk of heart attack and stroke, reduce risk of breast cancer and Type 2 diabetes, improve sleep, elevate mood and overall sense of well-being, etc. (Godbey, 2009).

Walkability has gained attention in recent years as a key aspect of quality of life in cities. Walkable cities can be thought of as being less auto-dependent, therefore having an advantage in meeting environmental targets and promoting physical activity for a healthier population. In addition, walkable cities are believed to have increased levels of informal social interaction on the street, resulting in a stronger sense of community. Walkable cities are inherently denser, and offer a greater variety of functions and mixed uses within a reasonable distance.

Walkable cities are more apt to provide levels of density required to support public transit. In general, smaller blocks and a finer-grained street network are believed to enhance walkability by offering more route choices and therefore variety in the walking experience. Transit development designed with walkability in mind can develop guidelines on distance of transit stops from residential areas (for example, within 500 metres of a transit stop). These are advantages for ageing populations, since maintaining an active lifestyle can contribute to long-term health and mobility. In contrast, ageing in an auto-oriented city can result in reduced independence and social isolation when seniors lose the ability to drive, at which point, years of physical inactivity may have rendered them relatively immobile.

Transport planning for ageing cities will need to recognize the increasing number of ageing drivers in the city and the added risks of driving in older age. By 2028, there will be 2.5 million drivers over the age of sixty-five in Ontario, Canada (Lorinc, 2008) which will need to be taken into account for all new transport project planning. Actions can be taken to support older drivers, such as educational workshops, participation of older people in road safety councils, and improved signage. However, many older people will be unable to drive after a certain age. As a result, accessible and affordable mobility alternatives, such as walking and transit are necessary to allow older people who are no longer able to drive to continue to contribute to society, especially those living in auto-dependent communities. Coordinated planning efforts will be needed to address the transportation needs of older people. centre, called the Functional Home, with changing exhibitions that present solutions, technology and products for accessible and safe living, addressing various challenges that elderly people face in their homes.

> **Determining the state of housing for older populations includes analysis of availability, accessibility, and affordability.**

Housing needs to be affordable and must contain essential services such as electricity, heating and plumbing. Since many older people are no longer a part of the work force, they rely on a fixed income. Notably, housing costs in cities tend to be unpredictable and often escalating. In order for older populations to age in place, access to high quality affordable housing is essential.

An increased focus in the design and retrofit of "seniors friendly housing" is required to ensure adequate living conditions for older populations. If a house is too large or has too many stairs it becomes difficult for an older person to maintain cleanliness and get around. Innovations in "smart homes" or home automation technology allow the elderly to remain in their homes longer while remaining safe and comfortable. Smart homes are equipped with a system that can monitor everything from the health of the inhabitants to key aspects of their living conditions, such as lighting temperature, security and even window and door operations. Helsinki has introduced the Helsinki Functional Home: http://www.hel.fi/hki/Helsinki/en/international/news/tackles. The City's Social Services Department runs an information centre, called the Functional Home, with changing exhibitions that present solutions, technology and products for accessible and safe living, addressing various challenges that elderly people face in their homes.

Another option to maintain independence for older people is community or cooperative housing and pocket neighbourhoods, where individuals have private units but share communal space facilities and outdoor areas such as gardens. This type of community arrangement allows older people to live independently longer, to be more connected to close neighbours, thereby also reducing the burden on caregivers.

Housing is a basic need and essential to well-being. However, some 1.6 billion people are currently living in sub-standard housing, 100 million are homeless (Kothari & Chaudhry, 2012). In the United States, increases in the number of homeless adults ages 50 to 64— suggest a dramatic increase in the elderly homeless population between 2010 and 2020 (National Alliance to End Homelessness, 2010). Worldwide the number of people living in slums is approximately 840 million, with the majority being located in cities of the developing countries where populations lack access to improved water sources and adequate sanitation, and live in distressed housing conditions without sufficient space or secure tenure. Conditions in slums will require extensive interventions as the population ages in these cities. GCIF indicators, such as the percentage of city population living in slums and the number of homeless people per 100,000, can assist cities in tracking the issues of housing in relation to poverty and ageing populations.

2.   Health and Social Well–being

PROFESSIONAL HEALTH SERVICES IN CITIES— DOCTORS, NURSES AND HOSPITAL BEDS
A city's capacity to deal with the increased health care needs of an ageing population requires collaboration between cities and the various levels of government responsible for the provision of health care. Older populations present a number of health concerns including heart, stroke and dementia, that require dedicated health services and caregiving.
GCIF indicators on health, such as:

- the number of physicians per 100,000;
- the number of nurses/midwives per 100,000; and,
- the number of in-patient hospital beds per 100,000,

allows cities to build a profile of the capacity of their health-care system and identify where interventions are needed to address the growing population of adults over the age of 65. Comparing Toronto and Vancouver for example and Beijing and Shanghai, Toronto and Vancouver have a similar age cohort of senior citizens (14 percent of the population): Toronto has more hospital beds per 100,000 (numbering 335, while Vancouver has 302); and, Toronto has far less physicians per 100,000 (numbering 278, while Vancouver has 432). Similarly, Beijing and Shanghai also have a similar age cohort of senior citizens (9 and 10 percent, respectively): Beijing has less hospital beds per 100,000 (numbering 434 while Shanghai has 449); but Beijing has far more (346) physicians per 100,000 while Shanghai has 184. Comparative data such as this, that is standardized across cities, encourages learning and can also assist cities in preparing (and revising) planning targets. Comparative data is an important means to leverage increased funding, from senior levels of government for example.

Figure 4 illustrates the level of health care professionals available across low-, middle-, and high-income GCIF cities. Higher income cities tend to have more physicians and nurses per 100,000 people. However, it is also within these cities where the percentage of adults and seniors as a proportion of the population is highest and thus where the most demands on the health care system will be made as the population continues to age. As the population ages, the strain on the health care system will increase. As seen in Figure 4, some of the high-income cities with the highest percentage of adults and seniors do not have as many physicians and nurses as their peers and will need to find innovative ways to care for their ageing populations and to lessen the burden on the overall health care system.

Figure 4 — Selected GCIF Cities — Percentage of adults and seniors to number of physicians and nurses per 100,000, sorted by income levels (GCIF 2011/2012 database)
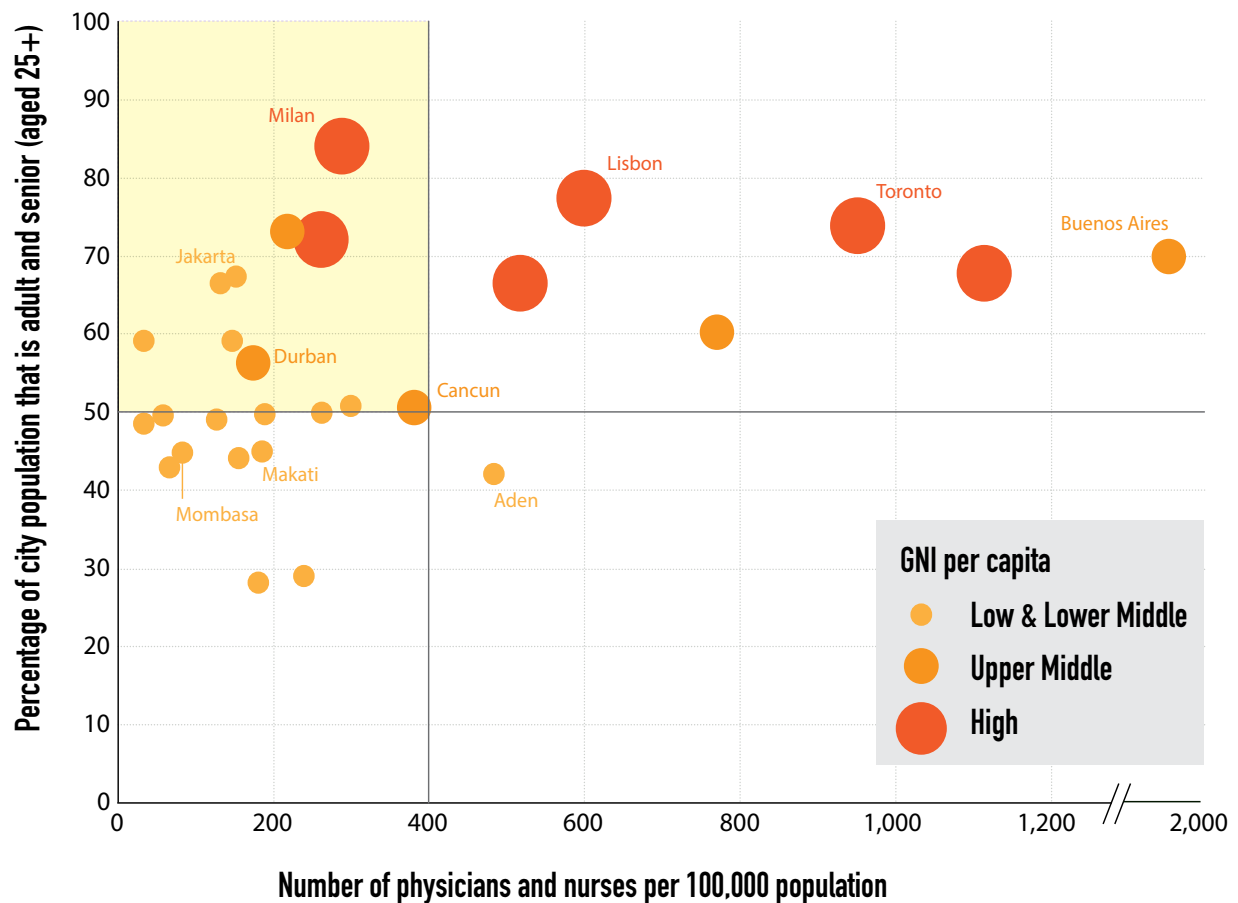
ALTERNATIVE DELIVERY SYSTEMS FOR THE ELDERLY

> Innovations in health care, such as new health-based protocols, technologies and architecture implemented in both the home and the public realm can assist older populations in maintaining healthy active lives and lessen the burden on the health care system. Health promotion can also be integrated into the planningand design of cities. Urban design models that integrate seniors into walkable, mixed-use areas are the hallmarks of a healthy city.

The Philips Centre for Health and Well-being suggests that new technologies can revolutionize the delivery of care while saving money and easing pressure on health systems suffering from worker shortages and capacity constraints (Philips 2011). Technologies in the area of health, such as telephone health systems can also enhance independence among older people and provide out-of-hospital care.

Constrained healthcare budgets, together with limited hospitals and professional staff, is causing increased attention to shifting care from institutions to patients' homes.

For many older people, care and support is provided to them by family members or community programs and services. The way in which older people are taken care of varies across cultures: in some, the norm is to have an elderly family member live with children or family members, who become the primary caregivers. In other societies, the primary caretaking role may be given to a long-term health care facility.

According to the American National Center on Caregiving, around 65% of older persons rely exclusively on family and friends to provide assistance (Family Caregiver Alliance, n.d.). The role of caregiving for the elderly predominantly falls to women and although men also provide assistance, female caregivers may spend as much as 50% more time providing care than male caregivers (Family Caregiver Alliance, n.d.). Indeed, the value of the informal care that women provide ranges from US$148 billion to US$188 billion annually (Family Caregiver Alliance, n.d.). Furthermore, often women are in the position of working, raising a family and caring for elderly relatives simultaneously (Beckford, 2008). The additional responsibility of caring for an older person places an increased burden on women. Cities need to be aware of the social norms around caregiving and provide appropriate programs and services to assist women and families to care for the elderly without putting a strain on the productive capacity of women.

Within an ageing population, the proportion of women in the older population grows significantly as the population ages. According to a United Nations report, in 2000, women outnumbered men by almost 4 to 3 at ages 65 or older, and by almost 2 to 1 at ages 80 or above (UN, 2002c), since female mortality rates are lower than male rates at older ages.

Furthermore, in countries where the adult population is declining because of the prevalence of HIV/AIDS, older persons, mainly older women, are once again becoming the head of the household and

providing care to orphaned children. The increase in elderly-led households leads to even greater vulnerability to poverty (Nadalamba & Chikoko, 2011). The number of grandparents caring for AIDS orphans in developing countries has doubled over the last ten years and up to a half of the world's 15 million AIDS orphans are being cared by a grandparent (WHO, 2012). Elderly led households require even more complex healthcare planning delivery systems, often under conditions of poverty.

INTEGRATION AND INCLUSION

Decreased mobility and/or lack of a structured social network (often provided through work and school) contribute to social isolation in older populations. Social isolation can be defined as "less social contact than an individual wishes, and that may lead to negative outcomes such as poor health, loneliness or other emotional distress" (Ministers Responsible for Seniors, 2007). As people age, it is important that they be acknowledged as integral parts of society. According to UN Habitat, social inclusivity is a vital pillar in determining whether a city is truly on the road to sustainability (UN-HABITAT, 2009). The WHO Global Age-friendly Cities: a Guide cites accessibility, affordability, awareness and range of events and activities open to all members of the population as important means of encouraging community integration (WHO, 2007).

> **Communities that avoid social isolation of its older population are characterized by a mix of uses, diverse housing choices and affordability scales, together with amenities and services (clinics, shops) within walking distance.**

The segregation of the young and the old is deeply rooted within many societies and has become increasingly apparent in today's world. Cities can build spaces and programs to foster intergenerational relationships that will assist in alleviating social isolation among older persons (Leithäuser, 2008). The WHO Guide suggests that "intergenerational activities are considered to be more desirable than activities for older people alone" (WHO, 2007). Intergenerational activities can combat ageism and allow older people to share their experiences with younger generations in order to build understanding.

3.   Technology, Information and Communications

The dissemination of age-related information is vital to ensuring that older populations gain access to the services most important to them and stay connected with their community to prevent isolation. There are a variety of ways in which useful information can reach its target audience including print and digital media, social media, telephone, radio, in person, etc. No matter how developed the city, word of mouth is the principal and preferred means of communication for older people, both through informal contacts with family and friends and through clubs, associations, public meetings, community centres and places of worship (WHO, 2007).

If cities wish to communicate online, the levels of social connectivity and technological literacy of older populations needs to be determined.   Are older people accessing online social networks? Are digital consultation services between doctors, caretakers and the elderly being used? Are there programs in place to teach older persons how to use computers and information technologies? Is there public access to internet stations in public libraries, community centres, etc.? Affordable public access to computers for older people is an important age-friendly feature (WHO, 2007).

In addition, there are many technologies that can assist in building age-friendly communities, outside those of information and communication sector. Innovation in safety and security devices for older people (i.e., medical alert services, fall detection, and medical surveillance, etc.) can improve emergency

response and prevent accidents. Cities can play a role in the dissemination of information or provision of these technologies for its ageing populations.

Philips has committed research and resources aimed at innovation to support the notion of ageing in place. Philips defines four key categories of active aging technologies at home:

- *Communication and engagement*: Simplified information technology can allow older people to stay in touch with family members and their community
- *Safety and Security*: Mobile personal emergency response systems and fall detection devices monitory and reassure seniors and their caregivers.
- *Health and Wellness*: Technology can help older people stay active and also manage chronic diseases, such as diabetes and congestive heart failure.
- *Learning and Contributing*: Technology can allow seniors to keep reading, learning and staying active in and knowledgeable about society.

4.   Sustainable Economic Development

Cities are now responsible for greater that 70 percent of global GDP, so the need to ensure sustainable prosperity in cities has never been greater. A core asset for cities in building prosperity is the skilled and educated workforce that the city produces. However, as the population ages, the ratio of the retired population to the working-age population (dependency ratio) increases, meaning less people in the work force are able to support nonworking people, such as the elderly and children.

A robust workforce that is continually being replenished by youth is essential for a sustained prosperity. The UK has expressed its concern regarding the proportion of pensioners within the population which is expected to increase to 1 in 4 by 2020 (Beckford, 2008). This reality is more extreme in countries like Japan where life expectancy is high. There were an average 12 working-age people to support every pensioner in Japan in 1950; today, the ratio is about 4 to 1 and by 2025 it could fall as low as 2 to 1 (Leithäuser (2008).

Population ageing represents a challenge for economic development including growing economic pressures on countries' pension systems, higher demand for health care and increasing tax burden on a shrinking working-age population. The potential support that the elderly may receive from the working population can be measured by the potential support ratio: the ratio of the population aged 15-64 years to that aged 65 years and over (Gavrilova & Gavrilov, 2009). This indicator is used to estimate the support base available to carry the burdens of an ageing population.

Figure 5 – GCIF Cities — Age Cohorts and Percentage of New Immigrants

LISBON	MELBOURNE	BUENOS AIRES	TORONTO	VANCOUVER
23.9	13.1	16.0	13.8	13.6
1.1	5.0	2.2	11.0	7.6

Legend:
- Percentage of new immigrant population
- Percentage of remaining city population
- Percentage of population that are seniors (aged 65+)
- Percentage of population that are adults (aged 25 – 64)
- Percentage of population that are youth (aged 15 – 24)
- Percentage of population that are children (aged 0 – 14)

Without immigration, some of the world's ageing cities will be unprepared to meet future labour-market needs. For example, Lisbon with close to 24 percent of its city population 65 and over, but with only 1.1 percent immigrant population, could consider a strategy to overcome an erosion of young talent by increased and targeted immigration. By contrast, Toronto with its elderly cohort at 14 percent of its population, is almost matched with its immigrant population at 11 percent (Figure 5). Immigration policies that support language training programs, streamline the recognition of foreign credentials, and provide support for apprenticeship and mentorship programs could assist cities with ageing work forces to find the skilled workers they need to achieve continued economic growth (Foot, 2008). GCIF indicators can assist cities in tracking immigration and the percentage of foreign-born in relation to their ageing population.

In developed nations there are support systems in place (such as social pensions, welfare and health care insurance) to financially assist older persons. The reality of poverty in low-income countries and cities means limits on social safety nets and more specifically constraints on their ability to support older populations. In fact, only one in five older people in the world receive a pension (Help Age International, 2012). As a result, in many parts of the world, older people have to work longer to maintain incomes to live by. In addition, in low-income countries, informal employment in cities can range as high as 60 or 70 per cent of jobs, which limits the ability to effectively collect income tax and hence provide for old age security and pensions.

Poverty affects the quality of life of older populations in cities in both the developed and developing cities. In developing countries where poverty is more widespread, the proportion of older persons living in cities in poverty is increasing. Within five decades, just over 80 percent of the world's older population will be living in developing countries compared with 60 percent in 2005 (WHO, 2007).

Cities and their planning strategy on, and policy response to, ageing populations is key to economic development in the future. Cities that begin now to address their shifting demographic structure will be better prepared to sustain their economies and ensure quality of living into the future.

VI   AGEING IN CITIES: AN INFORMED RESPONSE

> **While this demographic transition looms globally, the real impacts will be felt in cities.**

The governance challenges to address ageing in cities are inherently inter-governmental. In many countries, the national level is responsible for immigration and pensions, for example, while the provincial or state levels are responsible for health, and it is the municipal governments that are responsible for planning, land use and design.

> **Policy and funding silos can frustrate real solutions. A national strategy that funnels resources to cities to address these issues is fundamental in moving forward. In this governance context, policy decisions at the city level are vital to the state of the world's ageing population.**

Evidence based decision-making, facilitated by sound data is invaluable in maneuvering through these demographic transitions. The Global City Indicators Facility (GCIF) has developed a body of city indicators to inform and guide city leaders to better confront these challenges associated with an "Age -Friendly City Policy, Planning & Design." These are detailed in Appendix A. GCIF indicators offer a framework to assess a city's age-friendliness and measure progress towards making the urban environment more inclusive and accessible to its older population. GCIF indicators will allow cities to understand the changing demographic in their cities and identify the gaps in services needed to support older populations. Comparable and standardized indicators for cities allows for learning across cities globally the sharing of information in the delivery of age-friendly services and infrastructure. GCIF indicators ensure that age friendly city planning and design decisions are not made on assumptions alone, but are well supported by facts and comparable information from other cities.

Correctly managed and with the appropriate level of healthcare provision and social protection programs, and located in cities planned and designed according to age friendly planning principles, population ageing can present an unprecedented opportunity for older citizens to enjoy a full and active life, far beyond the expectation of previous generations.

GCIF CITY PROFILE
AGEING IN THE CITY

CATEGORY	GCIF INDICATOR
GOVERNANCE	Gross Operating Budget per capita Gross Capital Budget per capita Debt service ratio Tax collected as a percentage of tax billed Capital spending as percentage of total expenditures Own-source revenue as percentage of total revenues
DEMOGRAPHICS	Total city population Percentage of country's population Percentage annual population change Percentage of population that are children Percentage of population that are youth Percentage of population that are adult Percentage of population that are senior citizens Average life expectancy Percentage of population that are new immigrants Percentage of population migrating from elsewhere Population dependency ratio Male-female ratio
ECONOMY	City product per capita Percentage of country's GDP Average household income Annual inflation rate Cost of living Income distribution (GINI Coefficient) Total employment Annual average unemployment rate Employment percentage change since base year City unemployment rate Percentage of persons in full time employment Percentage of city population living in poverty

ACCESSIBILITY	Population density
	Jobs/housing ratio
	Total number of households
	Total number of occupied dwelling units
	Dwelling density
	Persons per unit
	Percentage of city population living in slums
	Km of high capacity public transit per 100,000 population
	Km of light passenger transit per 100,000 population
	Number of personal automobiles per capita
	Annual number of public transit trips per capita
HEALTHCARE	Number of in-patient hospital beds per 100,000 population
	Number of physicians per 100,000 population
	Number of nursing/midwifery personnel per 100,000 population
	Emergency response time
ENVIRONMENT & QUALITY OF LIFE	Green area per 100,000 population
	PM10 concentration (air quality)
	Greenhouse gas emissions in tonnes per capita
	Climate type
	Average annual temperature
	Average annual snowfall
	Public indoor recreation space per capita
	Public outdoor recreation space per capita

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ENDNOTES

i.   "Elderly" or "Senior Citizens" are defined differently worldwide and vary slightly in terms of age cohort bracket – sometimes at 60+ years of age and other times at 65+ years of age for example. For the purposes of this document, 65+ will be used unless otherwise noted.

ii.   GCIF member city data, 2009-2012.

iii.   Africa will experience a slight percentage decrease as a cohort in its elderly population, but numerically will experience an increase of 291 percent in its elderly population from 27.5 million in 2010 to 107.6 million in 2050.

iv.   Data source for this GCIF Graphic is the United Nations Department of Economic and Social Affairs, 2012.

v.   GCIF member city data, 2009-2012. Non-member data: Beijing, Shanghai, Tianjin - 2010 Population Census of China; London - 2011 Census of England and Wales, Scotland and Northern Ireland, The Office for National Statistics of UK; Moscow - 2010 Population Census for the City of Moscow and the Moscow Region. Federal State Statistics Service of Russia; New York - Vital Statistics of New York State 2011. Department of Health, New York State; Seoul - 2010 Population Census. Statistics Korea; Singapore - Yearbook of Statistics Singapore, 2013. Singapore Department of Statistics; Tokyo - 2010 National Population Census. Statistics Bureau, Ministry of Internal Affairs and Communications of Japan.

vi.   Data source for Canadian age cohorts is 2011 Canadian Census.