Aging in the Czech Republic

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The goal was to provide an overview of main issues relevant to aging in the Czech Republic. The Czech Republic is a former Eastern Bloc nation of about 10.5 million. Older adults are overrepresented relative to those under age 15. Life expectancy currently hovers around 78 years (75 for men/81 for women), a number slightly higher than most of Eastern Europe but lower than most of Western Europe. Cardiovascular diseases account for about 50% of all mortality, which is one of the highest rates in Europe and therefore of particular concern. Lifestyle habits, especially high alcohol consumption, a high rate of smokers, and high-fat diet relative to most other European countries and the United States, combined with relatively low expenditures for health promotion, appear important in the context of high cardiovascular mortality. Long-term care is funded mostly by state and local governments. The country has tried to address issues associated with insufficient capacity and low quality in long-term care, a particularly prominent problem in the Czech Republic compared with other European countries. The recently established International Clinical Research Center brings new possibilities for collaborative research in the Czech Republic, including research specific to aging. Improving long-term care and establishing methodologically sound longitudinal data sets are among the most pressing issues, although sustaining the pension system strained by increasing life expectancy, low retirement age, and extensive government-sponsored benefits has also recently emerged as a critical issue.

Key words: Population growth, Health care, Long-term care, Pension, Income security, International Clinical Research Center, Czech Brain Ageing Study

The Czech Republic is a Central European country with just more than 10,500,000 inhabitants (CSO, 2013). Among older adults, 61% are women. In 2011, the average life expectancy was about 75 years for men and 81 years for women (CSO, 2013). This compares favorably with other former “Eastern Bloc” nations such as Bulgaria (70 years for men; 81 years of women), Hungary (71 years for men; 79 years for women), or Romania (70 years for men; 78 years for women), but it also lags behind life expectancy in Western European countries such as Belgium (78 years for
Cardiovascular mortality is of particular concern in the Czech Republic (Pajak & Kozela, 2012), with about 34% of all mortality attributable to coronary heart disease and 14% to stroke alone (Mortality, 2012). In comparison, these percentages are 25% and 7%, respectively, in the United States (Murphy, Xu, & Kochanek, 2013). Alcohol consumption is among the contributing causes, with beer consumption alone estimated at 132 liters annually per resident 15+ years of age (WHO, 2012). High smoking rate and high-fat diet are other important contributors (Pajak & Kozela, 2012). Colorectal cancer is also relatively common, as the Czech Republic ranks third in per capita rate (WCFR, 2013), possibly due to the combination of high-fat diet and high beer consumption, which has been found to impose an especially high risk (Kune, 2010).

Based on this relatively poor lifestyle profile of the Czech population, health promotion seems especially important to health and aging in the Czech Republic. One potential barrier to health promotion is relatively low expenditures on awareness of health promoting behaviors. For example, in 2012, the Czech Republic spent 2.7% of total health expenditures on health promotion and public health, which is relatively little compared with countries such as Germany (3.7%), Finland (5.6%), Slovakia (4.9%), or the United States (3.6%), although it is also on par with countries such as Belgium (2.5%) or Switzerland (2.7%) (Eurostat, 2012).

Of note is the fact that Czech adults 65 years of age (16%) represent a greater portion of the population than children between ages 0 and 14 (14%), a trend that has been observed at least since 2007 (Kinkorova & Topolcan, 2012). Moreover, there are about 5 million economically active individuals and 1,700,000 retired individuals (CSO, 2013) or about three workers per each retiree. The Czech government has recognized this trend as a threat to the long-term economic health, which includes commitments to health care and pension programs for older adults. Incentives are in place to facilitate birth rates in hopes of reversing this population trend and in turn boosting the economy. These include a child delivery payment of 13,000 Czech crowns (CZK; about $650) for families with salaries lower than 2.4 times the living minimum (18,500 CZK, or $925, in net monthly income) and a monthly salary typically comprising 70% of the pre-delivery salary base, or at least 7,600 CZK (about $375) a month for the first 3 years after birth of every child (Parental Subsidy, 2013).

Despite these efforts, the country's birth rate, which peaked in 1974 with 19.4 births per 1,000 residents, dipped to 8.8 births per 1,000 residents by 1996 before leveling at just more than 10 births per 1,000 residents through 2012. Along the same lines, there has been virtually no natural change in the overall population count over the past 30 years, although the share of those aged 65+ grew from 13% in 1991 to 16% in 2011, or by about 350,000 individuals (Eurostat, 2013a). Since the beginning of the 20th century, the population has increased from about 9,300,000 people to the about 10,500,000 currently. However, the current count also includes immigration, which contributed about 300,000 new residents in the past decade alone.

**The Health Care System**

As most other European countries, the Czech Republic uses a universal health care system in which each citizen is provided with access to care for a mandatory monthly fee and co-payments that are proportional to monthly income; the unemployed and those 65± years of age are covered free of charge. Despite this government-based system of health care coverage, total health expenditures have remained at about 7% of gross domestic product (Bryndova, Pavlokova, Roubal, Rokosova, & Gaskins, 2009), which is lower than Germany, France, and Switzerland (11% each) or the United States (16%) (OECD, 2011a). Critics bringing to attention low quality of care have been pointing to this discrepancy.

Also, health care expenditures from private sources remain low at about 14% of total health care expenditures despite recent trends aimed at privatization of health care delivery. The roots of this heavily government-based health care system can be traced back to Otto von Bismarck, a Chancellor of Germany during the latter part of the 19th century, who established health insurance as part of his “model of social security and health insurance system” (Kinkorova & Topolcan, 2012). This system was in place until 1918 when Czechoslovakia became independent from the Austro-Hungarian Empire. At the same time, the health care system was also expanded.
After World War II, the country became part of the Eastern Bloc ruled by the Soviet Union. Following the principles of so-called “people’s democracy,” almost 100% of the property came under collective ownership (Bryndova et al., 2009). The country also acquired an even more centralized system, with health insurance being one of the entitlements. Initially, the health care system went through a period of disorganization. At least some of the problems were resolved when the Semashko model, which was used at the time by the Soviet Union, was fully implemented. The model, named after Nikolai Semashko, the commissary of public health in the Soviet Union between 1918 and 1930, was characterized by centrally coordinated health delivery strategies and focus on the health of expectant mothers, children, and adolescents (Bryndova et al., 2009). The centralization of health care delivery resolved some problems but also imposed a rigid system that did not allow the system to evolve (Bryndova et al., 2009; Kinkorova & Topolcan, 2012).

This centralized model stayed in place with few modifications until 1989 when, gradually, the country started to incorporate free choice of providers, a network of insurers providing health care based on contracts, and privatization of primary health care, pharmaceutical industry, health care support firms, and spa facilities (Rokosova, Hava, Schreyögg, & Busse, 2005). This transition has not been a smooth one as the market-based changes have clashed with state controlled delivery of health care. The deep roots of centralized health care have contributed to the difficulties implementing market-based ideas into health care, particularly when changes to coverage may affect children or older adults.

Understaffing of hospitals, unpaid overtime, and part-time salary equivalents for physicians working full-time have adversely affected the morale of Czech health care workers and doctors who subsequently threatened to move abroad or leave the profession completely (Holt, 2010). These issues have not been completely resolved, although a full-blown crisis was averted by modification to overtime policies and at least modest increases in salaries. Overall, despite less than ideal working conditions as well as changes to the health care system such as the establishment of fees for service and long waiting periods for elective surgeries, the structure of health care delivery in the Czech Republic provides adequate health care for older adults of all levels of functional status.

Gerontontology and Geriatrics in the Czech Republic

The most visible organization dealing with aging issues is the Czech Society for Gerontology and Geriatrics (http://www.cggs.cz). The society was originally established in 1958 (as the Czech Medical Association). It has established itself as the main advocate for improving quality of health care delivered to older adults in the Czech Republic. The society was instrumental in founding the Department of Gerontology and Geriatrics at the Medical School at Charles University in Prague in 1974 (Weber & Topinka, 2012). The society was also involved in establishing geriatric medicine as an independent medical subspecialty in 1983. There are about 200 graduates of this program, although not all are actively working in the field, sometimes due to retirement.

Long-Term Care

Since 2006, long-term health and social care in the Czech Republic are financed centrally via state and local budgets essentially in the same fashion as health care in general (Bryndova et al., 2009). However, long-term care remains poorly defined with institutions moving in and out of this system somewhat fluidly (Barvikova & Österle, 2013).

The main institutions of long-term care delivery are thought of as residential care facilities (RCFs). These provide care at the level of (a) typical assisted living facilities, which includes senior centers, day care centers for patients living with dementia, and community-based care, and (b) nursing homes with a full range of health and social services (Barvikova & Österle, 2013). Long waiting lists exist at RCFs, creating a bottleneck of patients, particularly patients with dementia and cerebrovascular disease, who cannot be discharged from inpatient hospital care (Bryndova et al., 2009). The government has recognized availability of long-term care as an important issue and has pursued the installment of long-term care delivery via the private sector. However, this policy has not been fully implemented yet. Fewer than 8,000 long-term care facilities serve a rather large aging population.

Given that, as in other countries, Czech women are at greater risk of needing long-term care, these issues affect women disproportionately. The waiting list for entering these facilities reached almost 70,000 applicants in 2006 (Barvikova & Österle, 2013). Although it should be noted that many of the applicants do not need long-term care but
rather look for the security of knowing the services would be available if needed.

In-home care is an integral part of the long-term care system (Slama, Kabelka, & Spinkova, 2013), with 475 publicly funded home care agencies serving more than 145,000 patients in 2009 (OECD, 2011a). In-home care consists of basic personal assistance services and more comprehensive integrated home health assistance.

Palliative care has become an increasingly important topic. About 100,000 individuals die yearly in the Czech Republic, with about 70% requiring some end-of-life care (Slama et al., 2013). However, only 16 hospices and 2 palliative care units serve this population (Loucka, Payne, & Brearley, 2013; Slama et al., 2013). The government’s emphasis on home care alleviates the lack of institutional care to some extent, but issues with quality of home care indicate that palliative care issues remain far from resolved (Slama et al., 2013; Svecova, 2009).

**Long-Term Care Research**

Long-term care in the Czech Republic has been studied by several researchers including Eva Topinkova and Iva Holmerova. Topinkova, Director of the Department of Geriatrics at Charles University, Prague, has published extensively on medication use in long-term care from across Europe. For example, a study using 4,156 volunteer nursing home residents from seven European countries suggested that 25% of Czech participants were involved in excessive polypharmacy (≥10 drugs), which was third highest (Onder et al., 2012). A study of 2,707 volunteer home care patients from eight European countries found that the prevalence of inappropriate use of medications in nursing homes was highest in the Czech Republic (Fialova et al., 2005). Overall, this research has pointed to medication use in long-term care as one critical area that may need attention from Czech policy makers.

Holmerova has been particularly instrumental in increasing awareness of quality of care delivered in long-term care facilities and issues relevant to dementia care. Centre for Gerontology along with the Czech Society of Gerontology and Geriatrics and the Czech Alzheimer Society (CALS), which were cofounded by Holmerova in the 1990s, provide a platform from which to advocate for quality of health and social care for older adults and for greater educational opportunities for clinicians, caregivers, and the broader public. The activities include the Prague Days of Gerontology, an annual event held since 1996 that brings together nurses, physicians, researchers, social workers, and older adults at large to discuss current issues related to the state of gerontology and geriatrics in the Czech Republic.

Two overlapping studies—the Dance and Quality of Life Study and the Reminiscence and Quality of Life Study (Holmerova, 2007)—were conducted simultaneously by Holmerova and colleagues with a convenience sample of 308 residents from 12 RCFs in greater Prague area. Using the baseline assessment, Vankova, Holmerova, Andel, Veleta, and Janeckova (2008) concluded that cognitive function and functional limitation by pain were particularly important for psychological well-being of RCF residents, providing a target for intervention. Using the study’s intervention component, a 3-month once-a-week dance exercise program modified for use with older adults from RCFs (Veleta & Holmerova, 2007), significant pre-to post-test gains in the intervention group \( (n = 27) \) relative to controls \( (n = 25) \) were observed in several performance-based, lower limb functional outcomes (Holmerova et al., 2010). Finally, a recent cross-sectional study of 220 residents from 12 RCFs reported relatively high levels of life satisfaction despite poor mental and physical functioning, although this was less so for the oldest and childless residents (Janeckova, Dragomirecka, Holmerova, & Vankova, 2013). Together, these studies point to important ways in which to improve quality of care and quality of life in Czech RCFs.

Most recently, Holmerova helped found the Centre of Expertise in Longevity and Long-term Care (CELLO), an affiliate of global network called the International Longevity Center (http://www.ilc-alliance.org/), to provide a comprehensive lobbying and educational platform to promote quality in long-term care and productivity in old age.

**The International Clinical Research Center**

Although major universities provide good resources for research, multidisciplinary, collaborative approach to research has been somewhat rare. In 2011, the International Clinical Research Center at the St. Anne’s University Hospital in Brno (FNUSA-ICRC) was established to serve as a headquarters for collaborative research in cardiology and neurology. Although the center does not focus on research in aging specifically, many
research outcomes inevitably relate to the older adult population. The project is overseen by an academic umbrella of Masaryk University, one of the largest universities in the country. The European Union Regional Development fund and the Czech Ministry of Health are the main sponsors of the center, but the center seeks to become financially independent through its own external grant support and patents.

The two main programs—Cardiology and Neurology—include seven subprograms in Cardiology/Cardiovascular Disorders, four subprograms in Neurology, and six additional multidisciplinary subplatforms. The ICRC was established in collaboration with international institutions/organizations, mainly the Mayo Clinic in Rochester, MN, and establishing international collaborations has remained one of the central missions of the center.

The Czech Brain Ageing Study, led by Jakub Hort, is one of the studies that fall under the ICRC umbrella. The study is the main source of information about cognitive aging in the Czech Republic. It involves the assessment of volunteers who come to the Motol Hospital in Prague, an affiliate of Charles University, either because they are interested in research or because of memory complaints. The premise is to identify early signs of cognitive impairment. The project mainly revolves around the notion that a spatial navigation deficit is a hallmark of early stage Alzheimer’s disease, hence a reliable measurement of spatial navigation can serve as a useful screening tool. The main instrument is a human analog of the so-called Morris Water Maze (Morris, 1984). The Morris Water Maze is an animal model where mice search for an invisible platform in a tub of water using spatial navigation memory. The human analog involves a darkened arena where a target point is briefly visible before it disappears, leaving the participant with only external cues to estimate its location (Hort et al., 2007).

The laboratory has produced several articles pointing to the utility of the spatial navigation instrument in recognizing early cognitive impairment (Laczo et al., 2009, 2010, 2011, 2012). For example, a recent study reported that participants with cognitive impairment who perform poorly have proportionally smaller right hippocampus, the brain area responsible for spatial navigation (Nedelska et al., 2012). Hippocampus is also known to be affected very early in the progression toward clinical diagnosis of Alzheimer’s disease (Jack et al., 1997), making it a perfect target for intervention.

The Pension System and Income Security

The Czech Republic, recognized as a social welfare state (Aidukaite, 2011; Aspalter, Jinsoo, & Sojeung, 2009), uses a public, pay-as-you-go pension system composed of basic and earnings-related elements. The basic element is utilized mainly by the underemployed, unemployed, and disabled. Despite reducing some aspects of the public pension system as part of recent reforms to reduce salary redistribution (Fultz & Steinhilber, 2003), the system continues to assure one of the lowest, if not the lowest, rates of poverty among individuals older than 65 years of age in Europe (Aidukaite, 2011; Sirovatka & Mares, 2006). The earnings-related element uses a progressive formula that replaces the first 10,500 CZK/month of average earnings since 1985 (or for 30 years starting in 2015) at 100%, earnings up to 27,000 CZK/month at 30%, and any earning above that at 10% (OECD, 2011b), disadvantaging somewhat the above-average earners (Sirovatka & Mares, 2006). The resulting average pension was just more than 10,000 CZK/month in 2010, with men averaging about 20% higher pension than women. This gender-based difference roughly corresponds to the gender-based pay gap of 21.2% observed in the public sector workforce (with the average monthly salary being about 24,000 CZK/month in 2010). This is second highest gender-based income gap in Europe after Hungary’s 24.4% (Eurostat, 2013b). Therefore, the pension scheme disadvantages women who tend to make less than men and tend to spend time on maternity leave (which reduces their average income). The latter issue is particularly important in the Czech Republic where generous maternity benefits lead to women taking longer career breaks than in other European countries (Křížková, Penner, & Petersen, 2010).

In early 1990s, the public system underwent reforms toward reducing redistribution and increasing the emphasis on defined contribution, although the move in this direction was much more subtle than in countries with similar systems such as Poland or Hungary (Fultz & Steinhilber, 2003). Despite the reforms and signals that more changes would come, currently 95% of Czech older adults rely exclusively on public pension and even those who contribute tend to do so in a limited fashion. A new reform, referred to as
the “Second-Pillar Reform” (with the first pillar being the continuation of the pay-as-you-go system), began to be implemented in 2013 to ease the strain on the current system and to reduce the risk of its collapse (Ottawa, 2012a, 2012b). It introduces a new option for voluntary individual retirement accounts secured by government bonds. The approach has received praise from the International Monetary Fund (Ottawa, 2012b), although the public remains somewhat skeptical (Brown, 2013).

Increasing retirement age from the 60 to 63 years for men and from 57–60 to 59–60 years for women (note that, for Czech women, having raised 2 children reduces retirement age by 1 year, 3 children by 2 years, and 4+ children by 3 years) is among the central tenets of the current pension reform (OECD, 2006). Early retirement tends to result in significant decrease in pension income. Standard pension income already makes up only about 50% of the preretirement earnings, a rate that is about 8% lower than the average taken across most European countries (OECD, 2011b). Despite this, the Czech Republic continues to experience what Rabusic (2004) termed “the paradox of early retirement”: Although adults older than 45 years of age are aware of the demographic and public policy pressures on the pension system (fewer workers/more retirees) as well as the fact that their income will be greatly reduced, still the majority of them would like to retire before legal retirement age, accepting that their retirement income will be reduced ever further. Adding to this paradox is the fact that although poverty in the Czech Republic is relatively low, subjective measures of poverty indicate unusually high rates (Rabusic, 1998), with estimated subjective poverty rates as much as double the average within the European Union (Sirovatka & Mares, 2006). Therefore, although Czech citizens feel relatively poor in general, they are willing to exchange great income reduction for early retirement. As workers continue to be partial to early retirement, additional reforms may be needed to sustain the pension system.

**Emerging Issues**

At least two areas may need to be addressed in the near future. First, there is a need to continue the pursuit of higher quality and greater availability of long-term care. Despite some initial steps to offer a greater variety of services and to improve quality of care, there are still significant shortcomings (Bryndova et al., 2009). Specifically, the planned expansion in the number of beds and facilities offering long-term care services through both public and private sector has not materialized, which puts strain on inpatient care and reduces the ability to serve the rehabilitating, cognitively impaired and disabled older adults.

Second, the most glaring limitation of research conducted in Czech Republic is a lack of population-based and longitudinal studies that would allow more refined and systematic assessment of various aspect of aging. No study to date has been able to adhere to methodological rigors of a true longitudinal design or has pursued population-based design. Continuing collaboration on Europe-wide comparative studies (e.g., Onder et al., 2012) and implementing of this type of research in other areas is critical for the growth of knowledge about aging in the Czech Republic. Within this context, research on health promotion and disease prevention, which appears to be largely lacking, needs to be initiated, preferably using a population-based, longitudinal design. Expanding external funding for this research should be a public health priority.

Improving working conditions for health care workers is a crucial public policy area. Low quality of care appears to be a major issue in the Czech Republic. Understaffing and underpaying doctors and other health care workers has been an important contributor to this problem. Improvements in working conditions should lead to improved care. Implementing a pension reform to protect the Czech economy from being depleted by the pension system is another clear priority. Increasing retirement age to at least mid-60s and providing incentives for older adults to remain in the workforce may be necessary in order to sustain the economic health of the pension system.

From a gender perspective, improving quality of long-term care is essential as women utilize these services to a much greater extent than men. Further, the pension reform needs to address gender disparity. First, maternity leave and work interruption due to child and family care need to be incorporated as pension rights into the pension calculation formula. Second, the gender-based income gap, which is among the highest in Europe, needs to be addressed to improve pension benefits for women, particularly in light of the fact that, as in other countries, Czech women have substantially longer life expectancy than men.

Finally, more attention should be paid to minority aging, specifically aging of the Czech
Roma population. It has been suggested that Czech researchers have turned away from research with Roma participants (Cooper, 2001; Koupilová, Epstein, Holčík, Hajioff, & McKee, 2001). At the same time, there is some evidence to suggest that Roma Czechs are in poorer health than the rest of the Czech population, which is likely to generate greater need for care in older adulthood.

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