

**McMaster University**  
**Department of Health, Aging and Society**  
**AGING AND HEALTH CARE SYSTEMS: HLTH AGE 2F03**  
**Winter 2020**

Instructor: Michel Grignon

Classes:

Location: DSB AB102

Time:

Monday 12:30-1:20pm

Tuesday 1:30-2:20pm

Thursday 12:30-1:20pm

Most weeks, I will use Monday and Tuesday slots only but keep Thursdays on hold as I may use these slots for review sessions or to go over material that needs extra time.

Office Hours: Tuesday, 12:30 to 1:20.

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Teaching assistants:

Gum-Ryeong Park (parkg9) and Tatiana Villacres (villactm)

Tutorials:

T01: Monday 10:30-11:20am in UH B126G; Gum-Ryeong

T02: Monday 10:30-11:20am in KTH 106; Tatiana

T03: Tuesday 10:30-11:20am in KTH 106; Tatiana

T04: Monday 1:30-2:20pm in KTH 106; Gum-Ryeong

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## Aging and Health Care Systems

### 1. COURSE DESCRIPTION:

1.1 This course will examine health care systems in the context of an aging population. Focusing predominantly on Canada, we will explore the social, political, and economic dilemmas faced by the health care system when the population is aging. The course is divided into four modules of three weeks. The first half of the course will be about understanding health care systems (module 1) and population aging (module 2). We will then discuss how the two are inter-related: the effect of an aging population on public health care expenditures (with an introduction to the concept of age as time-to-death) and the effect of medical care on longevity and quality of life (module 3), the effect of an aging population on the organization of health care delivery (module 4).

### 1.2. Intended Learning Outcomes:

1. Explain how health care is financed, funded, delivered and regulated in Canada.
2. Explain the causes and consequences on health (including obesity and frailty) of population aging in Canada.
3. Explain the role of proximity to death in health care costs, and why increased longevity reduces the impact of population aging on health care spending.
4. Assess the sources of longevity gains and the role of health care in increased longevity.
5. Use the concept of the disablement process to map components of “integrated care” models into the requirements of elderly patients and end-of-life care.

### 2. REQUIRED TEXTS AND MATERIALS:

2.1. Textbook: A combination of two books, available as a package from the bookstore to a cost of \$59.95 (if purchased as a package.)

Maioni, Antonia (2015) *Health Care in Canada*, Oxford University Press

Laura Funk (2016) *Sociological Perspectives on Aging*, Oxford University Press

The ISBN for the package is 9780199024476

You can buy the package at the following address:

[https://campusstore.mcmaster.ca/?wsTERMG1=201&wsDEPTG1=HLTHAGE&wsCOURSEG1=2F03&wsSECTIONG1=DAY%20C01&crit\\_cnt=1](https://campusstore.mcmaster.ca/?wsTERMG1=201&wsDEPTG1=HLTHAGE&wsCOURSEG1=2F03&wsSECTIONG1=DAY%20C01&crit_cnt=1)

2.2. Courseware: All the readings in the Courseware are available through McMaster Library Electronic Database. In order for you to have off-campus access to electronic library materials, you must use a LibAccess account.

### 3. COURSE EVALUATION:

- **Participation:** 10%, for attending tutorials and taking the quizzes.
- **Assignments:** 30%, one assignment at the end of each module, 7.5% each assignment. Assignments are individual.
- **Midterm:** 30%, 30 MCQ (5 per week, week 1 to 6).
- **Final:** 30%, 30 MCQ (5 per week, week 7 to 12). The final exam will be two hours in length, with the date and time to be determined by the Office of the Registrar.

#### **4. ABSENCES**

All excuses for illness, injury and family emergency must be addressed through the office of the Associate Dean of Social Sciences who will notify the instructor of your absence. We are committed to accommodate the students observing religious holidays (see 7.3 below, RISO policy). Please make sure to discuss the arrangements individually with your teaching assistant or the instructor as soon as possible.

#### **5. COURSE ORGANIZATION:**

The course is delivered in person, as a mixture of traditional lectures and flipped classrooms. I will post all slides on Avenue prior to lectures and you are welcome to read slides before coming to class. Slides provide the basic material only and I will elaborate during lectures (attendance is therefore required to succeed in the course). Flipped classrooms involve discussions and hands-on practice based on material posted on Avenue ahead of lecture time. I will mostly use the same material assigned for the quiz or tutorials. If you read the material and take the quiz before class you will have an opportunity to use it in class to answer questions and you will have an opportunity to ask questions about the material. Material assigned will often consist of a website or a database and I will ask you to retrieve data to answer a simple (often quantitative) question. It can also be an external video (talks or lectures) illustrating points developed in the slides or written academic papers or reports.

**Knowing where to find information and how to use it is a key component of this course.**

You will also attend weekly tutorials that will allow you to review the material, ask questions to the assistants, and answer questions on readings as well as perform hands-on activities to get a more intuitive understanding of the concepts discussed in class.

At the end of each module, you will complete an assignment (with a due date two weeks after the end of the module). Assignments are to be submitted electronically on the Avenue to Learn Dropbox. Late submissions will be penalized 5% per day. Use 2 or 1.5 line spacing and font Times New Roman 12 or Arial 10-11. The assignment should have a title page with your name and student number, use headings and subheadings and APA style referencing. Upload your assignments as PDF to avoid formatting issues.

## 6. WEEKLY SCHEDULE:

### Module 1: Health Care Systems.

#### Week 1: January 6, 7, 9 (Tutorial January 13-14).

Topics: **Introduction to the course (organization) and definition of health system**

Week 1, lecture 1: organization of the course and preparation of tutorial #1 (how to read material)

Learning outcomes:

1. Understand how the course works
2. Know your TA's and the course material (readings and textbooks)
3. Know how to prepare for tutorials and read material or access evidence
4. Prepare to learn by searching for information rather than passively ingesting information from instructor

Week 1, lecture 2: general definition of health care systems.

Learning outcomes:

1. Know what a health care system is
2. Describe the scope of what a health care system does
3. Describe the main actors taking part in the working of a health care system
4. Understand the three functions of a health care system and the role of governance

Readings:

- Textbook: Antonia Maioni, chapter 1, pages 21 to 30 and chapter 2, pages 31 to 35

#### Week 2: January 13, 14, 16 (Tutorial January 20-21).

Topics: **How health systems work (financing, funding, delivering and governance).**

Week 2, lecture 1: financing, paying and delivering

Learning outcomes:

1. Understand the various forms financing of health care can take, and their implications
2. Understand the various forms funding of health care can take, and their implications
3. Understand the various forms delivering of health care can take, and their implications
4. Describe how financing, funding and delivering work in Canada

Readings:

- Gregory Marchildon, *Health in Transition, Canada 2013*, Toronto University Press (available online at [http://www.euro.who.int/\\_data/assets/pdf\\_file/0011/181955/e96759.pdf](http://www.euro.who.int/_data/assets/pdf_file/0011/181955/e96759.pdf)): chapter 3, pages 61 to 63 (included), 67 to 72 (from section 3.2, included to 3.3.3, excluded), and 75 (starting at section 3.4) to 77.
- Gregory Marchildon, *Health in Transition, Canada 2013*, Toronto University Press (available online at [http://www.euro.who.int/\\_data/assets/pdf\\_file/0011/181955/e96759.pdf](http://www.euro.who.int/_data/assets/pdf_file/0011/181955/e96759.pdf)): chapter 3, pages 78 to 80, chapter 4: pages 89 to 99, and chapter 5.

Videos:

- Kahn Academy on paying doctors: <https://www.youtube.com/watch?v=4J-dRA3MGc8>

Week 2, lecture 2: regulation and governance

Learning outcomes:

1. Understand what regulation is (what it does and who does it)
2. Understand what governance is (what it does and who does it)
3. Describe the various roles of regulation in relation to the three functions of a health care

system

4. Describe how health care systems are regulated and governed in Canada

Readings:

- Textbook: Antonia Maioni, chapter 2, pages 36 to 42
- Gregory Marchildon, *Health in Transition, Canada 2013*, Toronto University Press (available online at [http://www.euro.who.int/\\_data/assets/pdf\\_file/0011/181955/e96759.pdf](http://www.euro.who.int/_data/assets/pdf_file/0011/181955/e96759.pdf)): chapter 2, pages 29 to 42

**Week 3: January 20, 21, 23 (Tutorial January 27-28).**

Topics: **Regulation and governance; Main reforms in Canada; Information sources on the Canadian health system.**

Week 3, lecture 1: main reforms in Canada and international comparisons

Learning outcomes:

1. Discuss the main reforms that took place in Canada's health care systems in the past 20 years
2. Discuss the main reforms that are discussed in Canada's health care systems today
3. Understand how national health care systems can be categorized
4. Describe the main types of health care systems internationally

Readings:

- Textbook: Antonia Maioni, chapter 2, pages 43-46 and chapter 5, pages 82-90
- Gregory Marchildon, *Health in Transition, Canada 2013*, Toronto University Press (available online at [http://www.euro.who.int/\\_data/assets/pdf\\_file/0011/181955/e96759.pdf](http://www.euro.who.int/_data/assets/pdf_file/0011/181955/e96759.pdf)): chapter 6, pages 121-129.

Week 3, lecture 2: where to find information on health care systems and summary of module 1.

Learning outcomes:

1. Know how to use CIHI's information to learn about Canadian health care systems
2. Know how to use HRO-ORS to learn about reforms in Canada's health care systems
3. Know how to use HSPM, the OECD survey and the Commonwealth Fund to learn about Canada's governance and institutions in international perspective
4. Know how to use the OECD's "health database" to learn about Canada's inputs, throughputs and outcomes in international perspective

Websites:

- Canadian Institute for Health Information (CIHI)
- Health Reform Observer – Observatoire des Réformes de Santé (HRO-ORS)
- Organization for Economic Development and Cooperation (OECD)

Assignment #1: write a two-page description of the English National Health System and compare to the Canadian case, based on Maioni chapter 5 pages 79-90; due February 7 at 11pm.

## Module 2: Population aging.

### Week 4: January 27, 28, 30 (Tutorial February 3-4)

Topics: **What is population aging and how did it happen in Canada?**

Week 4, lecture 1: What is the aging of the population (definition, mechanisms, causes, tools to analyze it)?

Learning outcomes:

1. Know how to measure aging of a population
2. Understand the mechanisms of the aging of the population (fertility and mortality)
3. Describe the plausible causes for the changes in fertility and mortality
4. Understand how the age pyramid is built (and the link with age distribution) and how it helps understand how population aging works

Readings:

- Textbook: Laura Funk, chapter 2, pages 28-33

Videos:

- Hans Rosling on world population ([https://www.youtube.com/watch?v=\\_Vog3uZ47O8](https://www.youtube.com/watch?v=_Vog3uZ47O8)). From beginning to 7'03" (population growth), from 9'30" to 13'18" (the toilet paper simulation of the big fill-up effect) and 15'30" to 18'40" (the age pyramids).

Week 4, lecture 2: Aging in Canada

Learning outcomes:

1. Describe the main features of Canada's changes in fertility and mortality in the past century
2. Understand the main concepts used to describe demographic change: TFR and life expectancy
3. Discuss the sustainability (or not) of keeping a constant age distribution after a baby-boom
4. Understand the concept of dependency ratio and how Canada benefited from a demographic dividend

Readings:

- Bélanger, A. et al. (2005) *Population Projections for Canada, Provinces and Territories, 2005-2031*, Statistics Canada, Demography Division (can be downloaded at the following address: <http://www.statcan.gc.ca/pub/91-520-x/91-520-x2010001-eng.pdf>). **Highlights only, pages 16 and 17.**

Videos:

- Animated pyramids at Statistics Canada website (<http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/pyramid-pyramide/his/index-eng.cfm>)

### Week 5: February 3, 4, 6 (Tutorial February 10-11)

Topics: **Age and death, and age and health**

Week 5, lecture 1: The epidemiological transition: Changes in mortality

Learning outcomes:

1. Understand what a survival curve is and how it describes the fate of a population
2. Describe the changes in the survival curve and why it is called rectangularization
3. Understand the link between rectangularization and the epidemiological transition
4. Understand the concept of maximum lifespan and discuss how it might evolve

Readings:

- Textbook, Laura Funk, chapter 4, pages 74-78
- Laurent Martel, Mortality Overview, 2010-11, Statistics Canada (<http://www.statcan.gc.ca/pub/91-209-x/2013001/article/11867-eng.htm>)

Week 5, lecture 2: The epidemiological transition: Changes in health

Learning outcomes:

1. Understand the difference between age and cohort effects
2. Know what measures are used to describe the health of a population
3. Understand the concepts of expansion and compression of morbidity
4. Understand the concept of health-adjusted life expectancy.

**Week 6: February 10, 11, 13 (Tutorial February 17-18).**

Topics: **The future of healthy aging**

Week 6, lecture 1: Slowing down wear and tear and the threat of obesity

Learning outcomes:

1. Describe how healthy aging can prevent the onset of CVD and diseases of the metabolism
2. Understand the concept of investment in health (health at age 60)
3. Understand the effect of healthy aging on compression/expansion
4. Describe the potential effect of the obesity epidemic on healthy aging

Readings:

- Cristel Le Petit and Jean-Marie Berthelot, "Obesity, a growing issue", *Health Reports* 17(3), 2006: 43-50
- Katherine Flegal et al., "Association of All-cause Mortality with Overweight and Obesity Using Standard Body Mass Index Categories", *JAMA*, 309(1), 2013: 71-84

Week 6, lecture 2: The future of healthy aging (2): Cancer and frailty

Learning outcomes:

1. Describe the rise of cancer as a cause of death in Canada
2. Understand the difference between incidence and prevalence
3. Understand the effect of cancer on compression/expansion
4. Describe the rise of frailty in Canada

Readings:

- Bergman et al. "Developing a Working Framework for Understanding Frailty" (2004) Will be available on Avenue to Learn.

Assignment #2: short (2 pages) essay on global population aging, ageism and definitions of aging, due February 27.



**Week 7: Reading week: February 17-21.**

**Midterm Monday February 24, 12:30-1:20pm.**

**Module 3: Aging and Spending.**

**Week 8: February 25, 27 (Tutorial March 2-3)**

**Topic: Information on health care spending by age and policy debates (apocalyptic demography)**

Week 8, lecture 1: Where to find information on health care spending by age

Learning outcomes:

1. Know how to use CIHI's NHEX data on health care spending
2. Understand the concept of "age profile of expenditures"
3. Understand the determinants of the shape of the age profile
4. Know how to use OECD data on health care spending by age

Websites:

- CIHI
- OECD Health

Week 8, lecture 2: Policy options for public health care systems in aging populations

Learning outcomes:

1. Understand the concept of rationing health care and its implications
2. Understand the concept of privatizing health care and its implications
3. Understand the concept of smoothing financing of health care and its implications
4. Understand the concept of health care spending as investment in longevity

No readings

**Week 9: March 2, 3, 5 (Tutorial March 9-10)**

**Topics: How much will aging cost the health care system?**

Week 9, lecture 1: The demographic scenario

Learning outcomes:

1. Understand how the demographic scenario works (involves some arithmetic and spreadsheets)
2. Discuss the consequences of the demographic scenario on health care spending in Canada
3. Discuss the explicit assumption of the demographic scenario (stability of the age profile)
4. Discuss the implicit assumption of the demographic scenario (expansion of morbidity)

Readings:

- Textbook, Laura Funk, chapter 2, pages 33-36.

Week 9, lecture 2: The time-to-death scenario

Learning outcomes:

1. Understand how the time-to-death scenario works (some arithmetic and more spreadsheets)
2. Discuss the consequences of the time-to-death scenario on health care spending in Canada
3. Discuss the explicit assumption of the time-to-death scenario (stability of morbidity)
4. Know and weight the evidence on time-to-death versus demographic scenario and how to forecast the effect of aging on spending

Readings:

- Zhou Yang et al. Longevity and Health Care Expenditures: The Real Reasons Old People Spend More, *Journal of Gerontology – Social Sciences*, 58B(1), 2003: S1-S10

Videos:

- Stephen Duckett

**Week 10: March 9, 10, 12 (Tutorial March 16-17)**

Topics: **Health care as a source of quantity and quality of life.**

Week 10, lecture 1: The true reason health care spending increases (aka the “Tsunami effect”)

Learning outcomes:

1. Understand the tsunami effect (health care spending by age increases over time)
2. Discuss the causes of the tsunami effect: income
3. Discuss the causes of the tsunami effect: technology
4. Understand the expansion effect of technology in health

Week 10, lecture 2: The effect of technology on quantity and quality of life

Learning outcomes:

1. Understand the main determinants of changes in longevity over time
2. Describe and explain the Preston curve
3. Discuss the role of medical progress in gains in longevity
4. Discuss longevity

Readings:

- Textbook, Laura Funk, chapter 3, pages 64-73

Videos:

- Aubrey de Grey, Ted Talk at [http://www.ted.com/talks/aubrey\\_de\\_grey\\_says\\_we\\_can\\_avoid\\_aging?language=en](http://www.ted.com/talks/aubrey_de_grey_says_we_can_avoid_aging?language=en)

Assignment #3: Write an op-ed to explain why increased longevity will save dollars to the Canadian health care system. Due March 19.

## **Module 4: Aging and the organization of health care.**

### **Week 11: March 16, 17, 19 (Tutorial March 23-24)**

Topics: **The disablement process and the “Wagner” model of integrated care.**

Week 11, lecture 1: The disablement process

Learning outcomes:

1. Describe the clinical consequences of aging
2. Understand the disablement process
3. Understand the Nagi scheme
4. Describe what is needed to address the disablement process

Readings:

- Textbook, Laura Funk: chapter 3, pages 51-64

Videos:

- Global News clip on managing multiple chronic conditions (<http://globalnews.ca/video/1221869/managing-multiple-chronic-conditions/>)

Week 11, lecture 2: The Wagner model of integrated care

Learning outcomes:

1. Understand the concept of holistic care
2. Describe the origins of the Wagner model
3. Understand the concept of integrated care
4. Understand the concept of proactive care

Videos:

- “10 common mistakes” ([https://www.youtube.com/watch?v=JBh0\\_e7DJb4](https://www.youtube.com/watch?v=JBh0_e7DJb4))
- Interview of Edward Wagner (<https://www.youtube.com/watch?v=K-z6HjRkKSc>)

### **Week 12: March 23, 24, 26 (Tutorial March 30-31)**

Topics: **Caregiving and long-term care.**

Week 12, lecture 1: Long-term care

Learning outcomes:

1. Define long-term care
2. Understand the changing relationship between long-term care and living arrangements
3. Discuss policy issues pertaining to long-term care
4. Understand the link between long-term care and end-of-life care

Readings:

- Textbook Laura Funk, chapter 4, pages 80-98;

Week 12, lecture 2: End-of-life care

Learning outcomes:

1. Define end-of-life care
2. Define palliative care
3. Understand organizational issues in end-of-life care in Canada
4. Discuss physician-assisted-death in Canada

Readings:

- Joshua Tepper, “Why we need better care for the dying”, Canadian Healthcare Network, posted December 18, 2014
- Andreas Laupacis, “The changing face of end of life care”, HealthyDebate, posted December 3, 2014

Assignment #4: Where do Canadians die and where do they want to die? Due March 26.

**Week 13: March 30, 31, April 2 (Tutorial April 6-7)**

**Review sessions and preparation for final exam.**

## **7. University Policies:**

### **7.1. Academic Integrity**

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you learn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not ones own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

### **7.2. ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES**

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study.

Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail [sas@mcmaster.ca](mailto:sas@mcmaster.ca). For further information, consult McMaster University’s Policy for Academic Accommodation of Students with Disabilities: <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

### **7.3. Academic Accommodation for Religious, Indigenous or Spiritual Observance (RISO)**

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrars Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Please review the RISO information for students in the Faculty of Social Sciences about how to request accommodation at the following link:

<https://socialsciences.mcmaster.ca/current-students/riso>

### **7.4. Faculty of Social Sciences e-mail Communication Policy**

In order to encourage participation outside of class, we will use the discussion tools of Avenue To Learn. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available

information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure.

Effective September 1, 2010, it is the policy of the Faculty of Social Sciences that all e-mail communication sent from students to instructors (including TAs), and from students to staff, must originate from the students own McMaster University e-mail account. This policy protects confidentiality and confirms the identity of the student. It is the students responsibility to ensure that communication is sent to the university from a McMaster account. If an instructor becomes aware that a communication has come from an alternate address, the instructor may not reply at his or her discretion.

### **7.5. Course modification notice**

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes.

It is the responsibility of the student to check his/her McMaster email and course websites weekly during the term and to note any changes.

### **7.6. Extreme circumstances**

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.