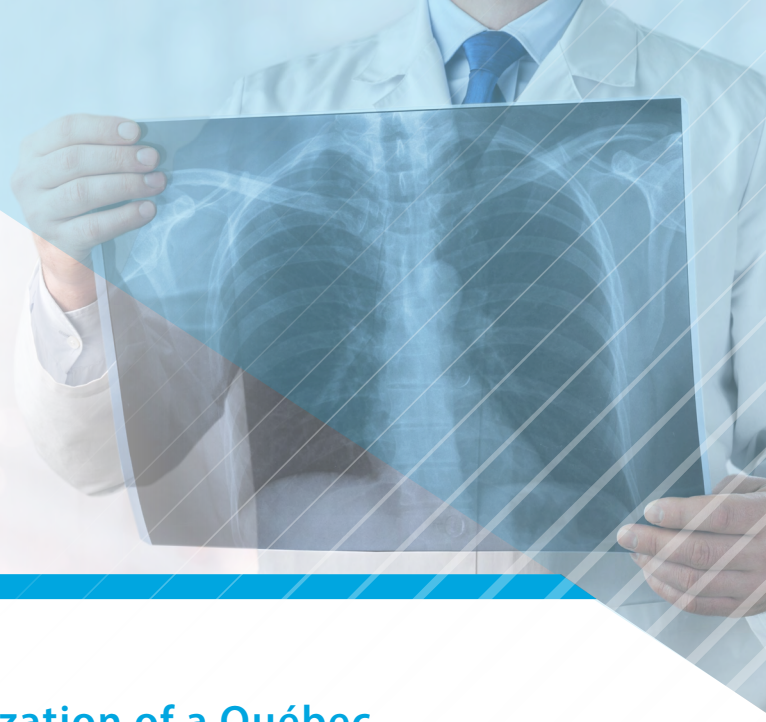
INESSS
LE SAVOIR PREND FORME



OVERVIEW

Creation and characterization of a Québec lung cancer patient cohort using clinical administrative data

The *Institut national d'excellence en santé et en services sociaux* (INESSS) has undertaken a project to explore the potential of clinical administrative data as a lever for improving cancer care. There are three parts to this project: the creation and characterization of a Québec-wide cohort of lung cancer patients, the description of their care trajectories in real-world settings, and the assessment of certain innovative therapies in Québec. This OVERVIEW summarizes the main findings of the work carried out in the first part of this project.

CREATION OF THE COHORT

Since the *Registre québécois du cancer* (RQC) was not available, a lung cancer patient cohort was created using clinical administrative databases (CADs). A pool of cohort candidates was first constituted from the hospitalization (MED-ECHO – *Maintenance et exploitation des données pour l'étude de la clientèle hospitalière*), mortality (RED-D – *Registre des événements démographiques – Fichier des décès*), and physician billing (SMOD – *Services rémunérés à l'acte*) databases. The candidates were then subjected to a selection algorithm with two exclusion and five inclusion steps. The final cohort generated from this algorithm includes a total of 133,468 incident lung cancer cases and covers the period from 2001-2002 to 2016-2017.

There are certain limitations to creating a cancer case cohort using clinical administrative databases, such as the fact that these cases have to be inferred rather than being directly identified via a cancer case registry. However, various validation strategies were used to counter these methodological limitations and lend support to the cohort's validity.

OCTOBER 2021

Québec

MAIN FINDINGS

It is important to note that the characterization of the lung cancer cohort represents the first part of a Québec portrait of lung cancer regarding clinical practices, that it was not carried out for population-based surveillance purposes, and that it does not replace data from the *Registre québécois du cancer*.

The analyses performed in this first part described the main characteristics of the patients in the cohort and yielded statistics on the incidence of lung cancer, as well as on the mortality rate and overall survival of those affected.

- Close to 10,000 new cases of lung cancer are diagnosed annually in Québec (9,752 new cases in 2016).
- Among people diagnosed with lung cancer, approximately 6,500 lung cancer deaths and 8,000 all-cause deaths occur annually.
- Québec is among the Canadian provinces and territories with the highest lung cancer age-standardized incidence rates (ASIRs) and age-standardized mortality rates (ASMRs).
- Over time, fewer and fewer people with lung cancer are dying of the disease, but other causes of death appear to be limiting the overall decline in mortality in these individuals (the lung cancer ASMR declined, but the all-cause ASMR remained stable between 2006-2007 and 2014-2016).
- Median overall survival for people with lung cancer increased by approximately 50% between 2002-2004 and 2014-2016.

Statistic	Québec as a whole	Women	Men
Number of new cases (2016)	9,752[1]	4,803	4,936
Number of lung cancer deaths (2016)	6,487	2,965	3,522
Number of all-cause deaths[2] (2016)	8,078	3,640	4,438
Age-standardized incidence rate (2014-2016; number of cases per 100,000 people)	104.6	95.4	119.1
Lung cancer age-standardized mortality rate (2014-2016; number of deaths per 100,000 people)	69.6	58.6	85.7
All-cause age-standardized mortality rate (2014-2016; number of deaths per 100,000 people)	85.8	71.2	107.1
Age-adjusted median overall survival (diagnosis in 2014-2016)[3]	12.2 months	14.9 months	10.4 months
5-year age-adjusted overall survival rate (diagnosis in 2014-2016)[3]	24.1%	27.4%	21.1%

1. The total number includes 13 patients with missing information on sex.
2. Among those diagnosed with lung cancer.
3. Kaplan-Meier method.

This OVERVIEW and the state-of-practice report entitled *Création et caractérisation d'une cohorte québécoise de patients atteintes d'un cancer du poumon à l'aide de données clinico-administratives* (Creation and characterization of a Québec lung cancer patient cohort using clinical administrative data) were published by INESSS in October 2021. They can be consulted in the Publications section at inesss.qc.ca.

Overview scientific production team

Main authors
Gino Boily, Ph. D.
Aude-Christine Guédon, M. Sc., stat. ASSQ
Kossi Thomas Golo, Ph. D.
Samia Qureshi, M. Sc.
Camille Lehuédé, Ph. D.
Erin Strumpf, Ph. D.

Scientific coordinator
Jim Boulanger, Ph. D.

Assistant to the director
Élisabeth Pagé, Ph. D., MBA

Director
Catherine Truchon, Ph. D., M. Sc. adm

Knowledge transfer

Professional scientist
Carole-Line Nadeau, M. A.

Graphic designer
Julie Sangollo, B. A.

Scientific coordinator
Renée Latulippe, M. A.

Institut national d'excellence en santé et en services sociaux
Québec