Office of the Access to Information and Privacy Commissioner
New Brunswick

Commissariat à l'accès à l'information et à la protection de la vie privée
Nouveau-Brunswick

REPORT OF THE COMMISSIONER'S FINDINGS

Personal Health Information Privacy and Access Act

Privacy Breach Notification Matter: 2013-1679-H-465

Date: March 13, 2015

"*Case about errors that resulted in the Department of Health issuing 114 Medicare cards to the wrong household addresses and delays to process new cards*"

INTRODUCTION and BACKGROUND

1. The present Report of the Commissioner's Findings is made pursuant to the *Personal Health Information Privacy and Access Act*, S.N.B. 2009, c.P-7.05 ("the *Act*") and stems from an investigation carried out as a result of a notification of a breach of privacy made to the Commissioner pursuant to section 49 of the *Act*.

2. On December 12, 2013, the Department of Health notified the Commissioner that it had been informed by a number of individuals that they had received Medicare cards in the mail that did not belong to them or members of their respective households. When first reported to our Office, the Department believed that the privacy breach incident involved 153 individuals, including those whose cards were misdirected as well as those who had received the misdirected cards. After conducting a more thorough review, the Department determined that 114 individual's Medicare cards had been sent to the incorrect address and 24 households received other people's Medicare cards in error, for a total of 138 affected individuals.

3. The Department halted all production of Medicare cards which affected hundreds of New Brunswickers, as was reported in the media in January 2014.

4. The personal health information involved in this breach was derived solely from that found on Medicare cards. In New Brunswick, a Medicare card shows the person's full name, date of birth, and the Medicare number that has been assigned and unique to that person.

5. While the Medicare card cannot be used to verify identity other than for the purpose of obtaining paid health care services or renewing one's eligibility in that regard (as per section 48 of the *Act*), we note that the Medicare card itself identifies a particular person. For that reason, it is a serious matter when a Medicare card is lost or is otherwise sent to the wrong person.

New Brunswick Medicare datasets

6. An individual who is a resident of the Province must present a valid and current Medicare card to the health care provider to receive services that are paid for by the Province. The Department of Health is responsible for determining a citizen's eligibility to receive insured benefits under the New Brunswick Medicare Plan and in doing so,

acquires an important amount of personal information about those who apply for Medicare coverage.

7. The Department must collect a lot of personal information to prove the identity and eligibility for Medicare coverage. The individual must establish that he or she is a permanent resident in New Brunswick, and provide full name, current address and contact information, name of employer and occupation (if applicable), marital status, and information about family members (name, date of birth, gender, residency information for his or her spouse and dependents). The individual furnishes photocopies of two pieces of documentation to verify identity and residency in New Brunswick (for example: birth certificate, driver's licence, passport, employee identification card, previous Provincial health card, etc.).

8. It is from this dataset that the Department is able to extract the requisite personal information that will in turn enable the production of cards.

Process for issuing plastic Medicare cards

9. Once the Department determines that an individual is eligible for benefits in the Province, it will then issue a plastic Medicare card to that individual who in turn presents it to receive health care services paid for by the Province. The card must be current and properly identify its holder to be accepted.

10. To manage the information provided by individuals for Medicare eligibility purposes, the Department maintains an electronic database of the personal information it has collected from those who applied for coverage. As indicated above, these datasets include individuals' full names, date of birth, contact information, as well as assigned Medicare numbers and associated expiration dates.

11. In addition, the Medicare database assigns another identifier to each individual referred to as the "household number." A unique household number is assigned to all the members who are part of a single household.

12. The household number system was created in order for the Department to send Medicare cards together in one envelope to all holders of Medicare cards in the same household. The Department bases this approach on a family unit (i.e., adults over 18.5 years of age and any dependents).

13. Household bundles of Medicare cards are grouped to a maximum of four cards per envelope. For example, a family of five individuals would receive two envelopes—one containing four cards and another envelope containing the card for the fifth member of the household.

14. At the time of the incident, the household number established by the Department's system covered any number between 1 and 999,999, i.e., numbers no greater than 6 digits. The significance of the maximum 6-digit household numbers is for computing purposes and is explained in greater detail below.

15. The datasets in the Medicare database are used to produce plastic Medicare cards.

16. The physical plastic cards are not produced in-house by the Department; instead the Department has contracted out this function to a service provider Medavie Blue Cross, a private sector health insurance company.

17. Medavie Blue Cross processes the cards to be produced but in turn, it further contracts out the actual manufacturing of the plastic cards to another third party service provider located in Ontario knowing as CPI Card Group ("CPI"). CPI manufactures and sends out the plastic Medicare cards to New Brunswickers through Canada Post (with whom the Department also has contract for delivery services).

18. The process to order the production of plastic Medicare cards is an automated one.

19. For individuals who require new physical Medicare cards (first card, replacement or renewal card) the Department sends extracts from the Medicare database to Medavie Blue Cross through a secure server maintained by the Province, and this automated process is repeated routinely when new Medicare cards are needed. The Department sends dataset extracts to Medavie Blue Cross twice a week.

20. Medavie Blue Cross then forwards the dataset extracts to CPI by posting them on another secure server to place the order for the physical production of the cards. CPI employees then retrieve the dataset extracts from the secure server to commence processing the cards.

21. A batch of plastic Medicare cards is produced for each dataset extract. When the batch of cards for each dataset is complete, CPI issues the cards by mail to the appropriate individuals. The cards are glued onto a sheet and placed in an envelope indicating the

recipient's household address. CPI then places the envelopes in the mail and Canada Post sees to their delivery. The mailing process concords with the Department's contract for delivery services with Canada Post.

22. The Department has a control measure in place for the processing of Medicare cards. Medicare staff with the Department generates a *control report* that contains the number of households that are included on the dataset extract file sent to Medavie Blue Cross for processing. Once the cards are produced and mailed by CPI, the Department receives a second control report from Medavie Blue Cross with information which is then verified against the Department's initial control report. This verification is intended to ensure that the information on both control reports match and enable the Department to quickly identify any discrepancy.

23. We understand that regrettably, this quality control measure would not have identified the incident that took place in this case, and we will explain further below.

Period of validity of Medicare cards and renewal process

24. At the time of this incident, New Brunswick Medicare cards were valid for a 3-year period.

25. The process required that three months prior to the expiration date, the Department automatically issued a renewal notice that the individuals completed and returned to the Department in order to be assessed for continued eligibility for insured services. Those who remained eligible were issued new cards with an updated expiration date showing on the card.

26. The renewal cards are manufactured in the same manner as for new cards as described above, meaning that information of individuals requiring renewal cards is included in the dataset extracts sent to Medavie Blue Cross which is then sent onto CPI to order the physical production of the cards.

27. In that regard, the Department uses the information in the Medicare database on an ongoing basis in conjunction with the automated system described above to issue new cards to newly eligible residents, as well as for renewal cards to individuals who remain eligible. The Department has since changed the Medicare card renewal process.

28. As of August 1, 2014, the Department no longer issues notices of expiry to card holders; instead, Medicare cards are automatically renewed and mailed to individuals at the address on file with Medicare. In addition, Medicare cards are now valid for a five-year period.

Changes to Medicare systems in 2011

29. In 2011, the Department undertook an extensive project referred to as the Medicare System Modernization project.

30. A component of that initiative included increasing the "number field" for household numbers in the Medicare database from 6 to 10 digits in length.

31. The 6-digit number limit corresponded with the external service providers' systems (Medavie and CPI) were limited to reading a six digit number. This change was intended to ensure that the system could accommodate a larger number of household numbers as necessary. And, as long as the household number remained as a 6-digit number in length, there was no issue.

32. The problem arose, however, when the data script which is used to create the dataset extract from the Medicare database was not altered accordingly to recognize numbers containing more than 6 digits.

33. The Department fully admitted that this error was an oversight on its part as this risk was not identified at the time of the modifications to the system. The Department had not realized this to be an issue, and the problem did not come to the Department's attention until this breach incident took place.

HOW THE PRIVACY BREACH OCCURRED

34. On November 27, 2013, the Department's Medicare database reached household number 1,000,000, thus beyond the 6-digit maximum number recognized by the dataset extract as established.

35. As this is an automated system, the system continued to automatically assign household numbers accordingly, i.e., assigning 7-digit household numbers but for a process that read only a field of 6-digit numbers in length. Moreover, as indicated above, it did not come to anyone's realization at the Department that the 7-digit household numbers

would not match or configure with the 6-digit maximum recognized by the dataset extract produced from the Medicare database.

36. As a result, the automated process caused the 7-digit household numbers to be truncated to 6-digit numbers in the dataset extracts produced from the Medicare database. Those truncated numbers were in turn sent to Medavie Blue Cross for processing and then further on to CPI for the production the corresponding physical card.

37. This meant that household numbers 1 000 000 to 1 000 009 were all read as the same number of 100 000 (truncating the 7th digit at the end) and that household numbers 1 000 010 to 1 000 019 were all read as the same number: 100 001.

38. For instance, the numbers were read incorrectly as follows:

1 000 010	was read as 100 001
1 000 011	was read as 100 001
1 000 012	was read as 100 001, and so on.

39. These incorrect household numbers were included in the dataset extract produced by the Medicare database, and for this reason, the 7-digit household numbers were not correctly captured in the dataset extract. Instead, the incorrect 6-digit household numbers were sent on to Medavie Blue Cross and CPI for the production of the plastic cards.

40. This resulted in the physical cards being bundled together according to their truncated 6-digit household number and in turn, placed in the envelope that was sent to a single household address.

41. As a consequence, some people received the appropriate Medicare cards for their household, but some households also received those of other people, i.e., Medicare cards belonging to other people that had been directed to their home address due to the dataset extract error in the household number.

42. Those whose cards were misdirected in this way did not receive their cards as expected.

Discovery of the breach

43. The situation came to the Department's attention on Friday, December 6, 2013 when an individual contacted the Department to report that some Medicare cards had been sent to that individual's address in error, in addition to the cards for the members of that household. When additional similar concerns continued to be brought to the Department's attention early the following week, the Department realized that something was wrong.

44. The Department immediately advised Medavie Blue Cross of what was happening and asked it to follow up with CPI to determine the source of the problem.

45. At that time, Department staff looked at the household number file that received the cards and compared that information with the household and/or individual whose cards had been misdirected. The Department was able to confirm that they were in fact two separate households with different addresses.

46. Initially, this appeared to be an isolated incident and the Department believed that the machine at the card production company (CPI) might have malfunctioned. Moreover, control reports did not pick up this extended numbers field oversight as they matched in showing the same numbers.

47. When more reports of misdirected cards kept coming in, the Department realized the incident might be a systematic issue and launched an in-depth examination on December 11, 2013. The Department pulled the relevant dataset extract files for examination and discovered that the problem arose when the household number reached 1,000,000 (7 digits) but the output file for Medavie Blue Cross and CPI only contained 6-digit fields for the household number. This resulted in Medicare cards being bundled incorrectly (according to truncated household number), meaning that some cards were incorrectly bundled along with the Medicare cards that were properly destined to a particular address.

48. In total, 138 people were affected by this incident: 114 Medicare cards were issued to the wrong address (whose personal information was seen by others who opened the envelope containing the cards), as well as 24 households that received cards belonging to other people (who had the misdirected personal information in their possession and had to be reached to contain the breach).

49. Meanwhile, as the production of cards had been halted to properly address this incident, hundreds of New Brunswickers were not receiving their Medicare cards as expected, despite having sent in their renewal forms and the matter garnered media attention. The Department reported publicly on the technical problems that had resulted in the breach.

STEPS UNDERTAKEN WHEN BREACH DISCOVERED

Containment to reduce harm caused

50. When the Department realized the source of the problem, it immediately contacted Medavie Blue Cross to halt the further processing of Medicare cards that awaited processing. This was done to prevent any additional Medicare cards from being produced and sent by mail and being misdirected due to this problem.

51. As for the systemic problem with the dataset extracts truncating the 7-digit household numbers to 6 digits, the Department decided to halt regular card production until such time as the household number field was increased from 6 to 10 digits within the Medicare database as well as with the external service providers.

52. This change was first tested in a development environment to ensure it worked effectively before being implemented for the actual card production process.

53. As will be discussed in further detail below, the Department was able to retrieve 80 of the 114 misdirected Medicare cards, meaning that 34 of the misdirected Medicare cards remain unaccounted for.

Notification to affected individuals and Commissioner

54. As indicated above, the Department notified our Office about the situation on December 12, 2013, the day after it realized the systematic nature as the underlying cause of the incident. The Department determined that 138 individuals had been affected by this incident, which involved the improper disclosure of personal health information.

55. On December 11, 2013, the Department began to notify affected individuals by telephone, and continued with its efforts to reach by telephone until January 14, 2014 everyone whose card had been sent to the wrong address.

56. For those who received Medicare cards belonging to others, they were instructed to return these cards directly to the Department or to their local Service New Brunswick branch. For those whose cards were misdirected, they were notified of the situation and offered the option of having a new Medicare number assigned to them.

57. The Department was not successful in reaching all of the affected individuals in this manner; therefore, the Department continued its efforts by sending letters on January 30, 2014: to those individuals whose cards had been misdirected; and on February 7, 2014, to those who received someone else's card in error.

58. By February 17, 2014, the Department confirmed that 80 of the 114 misdirected cards had been recovered or otherwise accounted for. For instance, in some cases, individuals received their neighbours' cards and gave the cards to them directly.

59. As indicated above, this left the Department with 34 misdirected Medicare cards that remained unaccounted for.

60. The Department continued to monitor for any additional cards to be returned or otherwise accounted for, but recently confirmed to our Office that no additional cards were returned after that date.

Other delays in processing Medicare cards

61. Card production resumed on December 30, 2013, and the Department was informed that all outstanding cards had been processed and mailed out by January 7, 2014; however, the Department continued to receive calls from individuals who had not received their cards past January 16, 2014. This prompted the Department to follow up with Medavie BlueCross to determine the source of the delay and there was another issue.

62. The Department was informed by Medavie Blue Cross that one of the data files that required re-processing had been sent outside of the usual processing schedule. That particular data extract file was sent by Medavie Blue Cross to CPI on December 13, 2013 but the file remained on the secure server without being picked up for processing by employees at CPI until January 9, 2014. In other words, the cause of that delay was due to Medavie Blue Cross not properly communicating to CPI staff the fact that the file had been sent outside of the usual automated process and to ensure that it would be processed when received.

63. This resulted in additional delay in these individuals receiving their Medicare cards beyond the time the technical issues were rectified.

64. As a result of this miscommunication, Medavie Blue Cross implemented a new practice for posting files outside of the scheduled process: it will send a separate email with the subject matter line of the email message showing that it is a request to process a *non-scheduled file*. This should ensure that staff at CPI recognizes this as a special request and pick up the file from the server and proceed to process new cards without delays.

Corrective measures to prevent recurrence

65. As a result of this incident, the Department undertook to implement corrective measures that would address this particular problem and ensure that a similar situation would not happen again.

66. Medicare cards that had been pulled from production after the discovery of the incident were processed after corrections were made manually to the data files; this prevented further delays for those individuals waiting to receive their cards.

67. As for the systemic problem with the dataset extract files truncating household numbers beyond 6 digits, corrective measures undertaken by the Department included modifying the appropriate fields in the Medicare database to allow for the enlarged household number (to a maximum of 10 digits). In addition, the external service providers' systems were adjusted so that they could accommodate a larger number of digits for the household number field.

68. Before resuming regular card production, these changes were first tested in a development environment and the Department officials remained confident that these measures would ensure that a similar situation would not recur at any time in the near future.

69. For those individuals whose cards had been misdirected, they received replacement Medicare cards; however, that process was delayed for a while until the systems with Medavie and CPI were being tested and upgraded to recognize a field of 10-digit household numbers. Regular Medicare card production did not resume until the household number field was increased from 6 to 10 digits in the dataset extract files produced by the Medicare database with verification of same for external service providers.

70. Finally, the Department conducted a review of other systems linked to the Medicare database to ensure that there was no risk of a similar situation occurring in another capacity.

FINDINGS

71. Once it became aware of the exact nature of the problem on December 6, 2013, we are satisfied that the Department took reasonable and immediate steps to identify the source of the problem and to limit the scope of the breach. When the issue persisted, the Department quickly confirmed its cause 5 days later. The Department halted further production of incorrect Medicare cards pending a solution, which in turn affected hundreds of New Brunswickers who were awaiting receipt of their Medicare card.

72. The Department undertook modifications to its internal systems and worked with the external service providers to correct the problem, tested these changes, and was able to resume regular card production by December 30, 2013. In short, the Department was able to correct the problem within 19 days of discovering the cause of the incident, not to mention that it did so within the Christmas holiday period.

73. Measures were taken to ensure that the affected individual's cards were correctly and quickly re-processed, albeit encountering other delays that were caused by Medavie Blue Cross. The Department followed up, identified the source of the delay, and Medavie Blue Cross implemented measures to ensure that no similar delays occur in the future.

74. Although the Department took reasonable steps to contain the breach once officials understood the source of the problem, the breach has not been entirely contained given that some of the misdirected cards have not been returned or accounted for. Affected individuals were properly notified by telephone and by letter with continued efforts, and during that time, the Department gave instructions to have the misdirected Medicare cards returned. Despite the Department's efforts, however, the fact remains that 34 individuals' Medicare cards were never returned or accounted for and this meant that the privacy breach could not be fully contained in this case.

75. We are pleased that individuals whose cards were misdirected to an incorrect address were notified of this fact and offered the option of having a new Medicare number assigned to them. As a result, those individuals were better able to make an informed decision about whether they should take any steps to protect their identity.

76. This illustrates the difficulties in retrieving personal information after it has been misdirected or even lost, and the issues of possible harm to individuals' identity and privacy that linger, and the need to prevent such incident from taking place in the first instance.

77. Finally, considering the magnitude of the change to the massive Medicare database that was undertaken by the Department in 2011, we find that the Department failed to assess or foresee the impact such a change could have on future data extracts for the purpose of producing and distributing new Medicare cards to residents.

78. In effect, the Department should have conducted a privacy impact assessment targeting that change before implementing it, as required whenever a modification to a personal health information system or communication technology is being considered. This would have resulted in the Department mapping out the effect of reaching the 7-digit number field in a 6-digit system, and would have called for testing in a development environment at that time, much like the Department undertook once it realized what had taken place. The Department should have recognized that this change could have far reaching consequences, as we saw took place in this case.

79. Neither the Department nor the Commissioner can alter the past or the incident that regrettably took place and affected hundreds of New Brunswickers. We are hopeful that the reporting of the facts, the causes that led to the privacy breach, and drawing attention to the failure to assess the possible impact the change to the household number field would have on the overall production of Medicare cards, will serve as a solid reminder to the Department, and others that manage large health care databases in their operations, of the importance of protecting personal health information at all times as the law requires them to do.

80. Based on all of the foregoing, the Commissioner has no recommendation to make in this case.

Dated at Fredericton, New Brunswick, this _____ day of March, 2015.

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Anne E. Bertrand, Q.C.
Commissioner