



**BRITISH
COLUMBIA**

Ministry of Health Services

**Professional and Software Compliance Standards
For HL7 Messaging**

**APPENDIX D – PHN CHECK DIGIT NUMBER
ROUTINE**

Version 2.1

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1 General Information

This document and its companion volumes contain the **Professional and Software Compliance Standards for HL7 Messaging** between the BC Ministry of Health and external clients. These standards are used for the exchange of information with various business areas within the Ministry including: the Client Registry (patient/client demographics), MSP (beneficiary coverage), MSP Employer Services (enrolment of employees and dependants), Primary Health Care (patient rostering), Continuing Care (client demographics and history) and Pharmacare (registration).

1.1 Corrections and updates

Corrections and updates to this appendix can be found at the end of the document. A vertical line in the outside border denotes corrections within the document. ⁱ

1.2 Who is the audience?

This document is intended for use by:

- a) Software Support Organizations (SSO) who wish to develop software that is compliant with the BC standard for the exchange of business area data encompassing Client Registry, MSP, Primary Care, Continuing Care and other Ministry supported transactions.
- b) Providers, administrators, health care professionals and MSP Benefits administrators (public and private employers) who are responsible for the implementation of compliant software in their organizations.

2 Overview

This appendix describes the PHN check digit algorithm.

3 PHN Check Digit Number Routine

The following PHN Check Digit Number Routine should be implemented on the local software.

The PHN used by *healthnetBC* is sent as a 13 digit number. There is a common Mod 11 check that can be applied to the last 10 digits of the PHN.

Input to this routine is PHN with no leading zeroes. The number is broken down into single digits and each digit is weighted. The weights are:

Digit (by position)	1	2	3	4	5	6	7	8	9	10
Weight		2	4	8	5	10	9	7	3	

The check digit process should ignore the first digit that is always a 9 and any leading zeroes. Each digit (2-9) is multiplied by it's weight and divided by 11. The remainder is loaded into an array. The array values are added to obtain a total. The total is divided by 11, and the remainder is subtracted from 11 to yield a check digit value. This value is compared to the 10th digit and if equal, the PHN is valid, otherwise the PHN is invalid.

The PHN used in the example would be represented as 0009123947241 when submitted to PharmaNet.

Example:

PHN	9	1	2	3	9	4	7	2	4	1
Weights		2	4	8	5	10	9	7	3	

Product		2	8	24	45	40	63	14	12	
(Divide each by 11) Remainder is -		2	8	2	1	7	8	3	1	

Sum of remainder values is 32. Divide 32 by 11 to yield a remainder of 10. Subtract remainder from 11 (11-10) =1 which is the check digit (10th digit)

If the result is 10 or 11, the PHN is not valid.



Document History

DOCUMENT MODIFICATION HISTORY		
Version	Release Date	Description
2.0	September 1999	Original single document
2.1	<version date>	<ul style="list-style-type: none">Revised format.

Corrections and Update Notes

ⁱ 02/Nov/27 – example of correction