



# PharmaNet

Professional and Software Compliance Standards

## Volume 3 – Technical Rules

### Hospital Admitting

Version 3.1

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# 1 GENERAL INFORMATION

The Professional and Software Compliance Standards Document for PharmaNet has been revised into volumes, divided by PharmaNet participant functionality requirements.

The 'library' approach provides more logical formatting while reducing redundancy and repetition.

There are common volumes required by all software developers and both business and technical volumes for the different functions. This enables software developers to download only the necessary volumes. The documentation is available on the *healthnetBC* Products and Services Catalogue web site. <http://healthnet.hnet.bc.ca/catalogu/index.html>

## 1.1 The Volumes

The 6-volume documentation set contains:

### Volume 1 – Introduction

Volume 1 introduces the reader to common development components, such as:

- Document Conventions and Structures
- Related Standard
- Contacts
- Support Responsibilities
- Compliance Evaluation Process
- Mandatory policies and procedures to ensure compliance with all standards.

### Volume 2 – Business Rules

Volume 2 has been further divided into separate documents for the functionality requirements of Hospital Admitting (HA), Emergency Department (ED), Medical Practice (MP), and Pharmacy access.

This volume contains the *implementation requirements* and the *business rules* related to the use of the available transactions and the local system requirements.

## **Volume 3 – Technical Rules**

Volume 3 has been further divided into separate documents for the functionality requirements of Hospital Admitting (HA), Emergency Department (ED), Medical Practice (MP), and Pharmacy access.

This volume contains the *general processing* and the *technical rules* related to the use of the available transactions and the *local system requirements*.

## **Volume 4 – HL7 Message Catalog**

Volume 4 identifies transaction details and message responses, such as:

- Network Transmissions and Responses
- Health Level 7 (HL7) Standards
- Message Formats and Data Definitions
- Input and Output Message Segments and Fields

## **Volume 5 – Security**

Volume 5 provides security objectives, requirements and guidelines and a framework for developing policies and implementing local security controls.

## **Volume 6 – Glossary**

Volume 6 lists a glossary of terms persistent through out *healthnetBC*.

## **1.2 The Audience**

The compliance standards documentation is intended for software developers, health care providers, administrators and other health care professionals who share responsibility for implementing compliant software in their organization.

## **1.3 This Document**

This is Volume 3 – Technical Rules for Hospital Admitting and contains the technical transaction rules for providing access to PharmaNet. Read this volume in conjunction with Volume 2 – Business Rules (Hospital Admitting).

## **1.4 *healthnetBC* / PharmaNet Operator Information**

Basic information regarding practitioners, prescribers and operators, must exist on PharmaNet before any message from a Provider will be accepted for processing. This information may be sent to PharmaNet in an electronic format by authorized individuals. Detailed specifications for this process are described in the document titled '*healthnetBC* / PharmaNet Practitioner and Operator Data Interface Specifications'.

## 2 TRANSACTION DETAILS

### 2.1 General Processing Rules

#### 2.1.1 Interpreting Transaction Responses

There are several ways to determine whether a *healthnetBC* message was successful or not. They are:

1. The ZZZ Segment

Each transaction submitted will include at least one ZZZ segment. The response status field of this segment will contain a value of either 0 or 1 on every response. A value of 0 means the transaction itself was successfully transmitted across the network and a response was received.

Note: Even though the transaction was successful, its intended function might not have been successful (e.g., a record may not have been added because the record already existed).

A value of 1 means the transaction itself was not successful and it did not perform its intended function.

In addition to the response status field, the transaction text field contains a message related to the transaction. If the response status is 0, the transaction text field will contain one of the following:

- a) All blanks (i.e., successful)
- b) '0 – Operation Successful'
- c) A warning message (i.e., '66 – Warning – Last Name and First Name do not match supplied names').

If the response status field is 1, the transaction request was not successful and the transaction text field will contain the application error message.

Examples of these messages are:

108 – No matches found for selection criteria chosen

101 – PRESCRIBER not found

121 – This is a Duplicate Prescription

## 2. The ZCE Segment (Claim Response Elements)

The ZCE segment is used for the transmission of claims information (i.e., TAC transaction). It contains two field which indicate the action taken with the claim:

- a) Response code field. Up to five CPhA response codes could be listed (i.e., 'A3' which translates to 'Identical claim has been processed')
- b) Response status field.

A complete list of response statuses and response codes may be found in the Canadian Pharmaceutical Association Pharmacy Claim Standard.

The most complicated message is related to the filling of a prescription. In this case, the input message may be TAC/TDU/TRP. This combination would only be deemed successful if: Response status field in ZZZ for TAC was '0'

- a) Transaction text field in ZZZ for TAC was blank
- b) Response status field in ZZZ for TDU was '0'
- c) Transaction text field in ZZZ for TDU was blank or '0 – Operation Successful'
- d) Response status field in ZZZ for TRP was '0'
- e) Transaction text field in ZZZ for TRP was blank or '0 – Operation Successful'
- f) Response status field in ZCE was either 'A (Accepted as transmitted-no adjustments), or 'V' (Reversal Accepted); and,
- g) All five response codes in ZCE are blank.



### **2.1.2 Mandatory Display of Response Message Status**

Warning and error messages must be displayed and must comply with the minimum mandatory display standards for each transaction. These messages must be triggered by any of the following:

1. A response status field not equaling '0' for each ZZZ segment returned
2. A response status field not equaling 'Y' for each ACG segment returned
3. A response status field non equaling 'Z' for each ZCH segment returned
4. A transaction text field not equaling 'blanks' or 0 – Operation Successful' for each ZZZ segment returned
5. A response status field in the ZCE segment (if returned) not equal to 'A' or 'V'; and the response codes field in the ZCE segment (if returned) is not blank.

### **2.1.3 Trace Numbers**

Trace numbers are used on *healthnetBC* for auditing purposes. They are also used to track what happened with a transaction when it was processed by *healthnetBC*. Trace numbers must be unique for the day, and must be in ascending order. A retransmit must be sent with the same trace number as the original message (i.e., the local system must store the trace number for as long as there is a possibility of re-transmitting the message).

### **2.1.4 PharmaNet Participant Messaging**

1. Messages only need to be displayed at one terminal when they are received.
2. Processing of the current transaction at the designated terminal(s) receiving the message may be completed before displaying the message. However, processing must be interrupted, and the message displayed and printed, before the next transaction begins.
3. PharmaNet will not transmit unsolicited messages to the client system. Even the PharmaNet Participant Messaging facility relies on a request to deliver a response.

### 2.1.5 Multiple PHNs

The local system must be capable of recognizing and clearly indicating to the Provider, a response (ZCC segment) which has a different Personal Health Number (PHN) from that submitted in the input message (ZCC Segment). In some cases, a PHN may be assigned to a patient when one already exists for that patient. The multiple PHNs are subsequently merged on CRS to a single PHN record. If a PHN has been merged with another PHN(s), CRS will return the consolidated PHN. If it appears the merge has been done incorrectly, or the Provider is aware of an incorrect PHN, the Provider must contact the PharmaNet Help Desk or the CPBC to request a correction or unmerge.

If the Provider agrees that the PHN merge is appropriate, the local system must have its files updated to reflect the consolidated PHN by choosing one of the following options:

1. The local software can use an 'export log' of PHN merges available from the MoHS to search for PHNs which must be merged on their local system. This option would usually only be considered for large *healthnetBC* participants due to the large number of PHNs on the export log.
2. The local software can recognize a new, merged PHN as part of the *healthnetBC* response and update local records.

### 2.1.6 Truncating

Users should be able to enter the maximum number of characters into every enterable field transmitted to PharmaNet.

The local software should be capable of displaying full field lengths for all fields. Only trailing blanks should be truncated.

No truncating is permitted in the following fields:

1. ZPE: Interaction advisory source
2. ZPE: Interaction advisory code
3. ZPE: Interaction advisory severity
4. ZPE: Interaction advisory text
5. ZPB3: Block 1 (drug information)
6. ZPB#: Block 2 (drug information)

7. ZPD: Generic name / manufacturer
8. ZPD: Dosage form
9. ZPD: Dosage strength description
10. ZPD: Long manufacturer name
11. ZPD: Information text
12. ZPB1: (Rx information)
13. ZPB2: (Rx information) CPBC

### **2.1.7 Network Down**

The local software must maintain any information required to allow business continuation when *healthnetBC* is unavailable.

SSOs must ensure that their local systems can recover from unexpected loss of *healthnetBC* connections or power failures (e.g., the local system may send a transaction to *healthnetBC* and prior to receiving a response from the network there may be a power failure at the local site). The transaction will have been processed by *healthnetBC*.

One possibility for handling this situation would be for the local system to write a copy of the messages being sent to *healthnetBC*, to disk prior to transmitting them. After successfully processing the response, this information would be erased. If the power fails prior to completion of the local transaction then the transaction would be available on disk and the local system can take appropriate action on power-up (e.g., alerting the Provider, reversing the transaction, retransmitting the transaction, etc.).

A transaction may fail within the DIS module, PCIS module, Router or within *healthnetBC*. The only way for the Provider to verify the result of the transaction is to inquire on the transaction once the system is back on-line, or phone the Help Desk for verification of the transaction, or retransmit the original transaction.

### **2.1.8 Backup**

The local system must provide the ability to backup and recover all relevant data files. The backup process will utilize either diskette or tape based media. Simple backup to hard disk is not acceptable.

A recovery process of appropriate files must be available. Examples of a suitable backup and recovery process is utilizing the MSBACKUP facility to backup the directories on a workstation which contain the actual data files. Another process could be built into the application code which will prompt the provider to backup certain data files and / or recover certain data files from external media.

A set of complete backup tapes or diskettes should be stored at a different physical location at all times.

The SSO training package must include the steps necessary to backup and recover data files.

## 2.2 Transaction Permissions by Provider

The following matrix indicates which *healthnetBC* et/BC transactions are permitted by each Provider type. Each row lists all existing *healthnetBC* transactions (functions) and each column represents current Provider types. The intersection indicates approved transactions for the Provider type.

LEGEND	
X	NOT PERMITTED. Compliance evaluations will ensure the local software does not allow this function.
M	MANDATORY- This function must be provided for use by the Provider type
O	OPTIONAL. This function may be provided for use by the Provider type; Approvals are in place; MoHS will manage roll out and priorities

The PharmaNet Client Registry transactions described in this document may be replaced with their corresponding Health Registry transactions as follows:

PHARMANET TRANSACTION	HEALTH REGISTRY TRANSACTION
TID – Patient Identification	R03 – Get Person Demographics
TPA – Patient Address Update	R07 – Update Person Address
TPH – PHN Assignment	R02 – Record New Person
TPN – Patient Name Search	R09 – Search for Person

Use of the Health Registry transactions is mandatory in software installed at new agency sites where the use of HNSecure was permitted six months prior to the new installation.

Health Registry transactions are documented in the current version of the Application Services Professional and Software Compliance Standards, Health Registry Standard.

<b>TRANSACTION ACCESS PERMISSIONS</b>	
Transaction	Provider
	Hospital Admitting <sup>1</sup>
TAC/TDU - Adjudicate Claims and Drug Utilization Evaluation (DUE) Update	X
TCP Patient Keyword	X
TDR Drug Monograph Information	X
TDT Daily Totals Inquiry	X
TDU DUE Inquiry	X
TDU DUE Update	X
TDU DUE Reversal	X
TDU/TRP,TRR,TRS Combination	X
TID Patient Identification	M
TIP Prescriber Identification	O
TMU Medication Update	X
TMU Medication Update Reversal	X
TPA Patient Address Update	M
TPE Patient Eligibility	X
TPH PHN Assignment	M
TPI Patient Clinical Information Update	X
TPM Profile Mailing Request	X
TPN Patient Name Search	M
TRP Patient Profile Request	X
TRR Patient Profile Request (Most Recent Only)	X
TRS Patient Profile Request (Filled Elsewhere)	X

<sup>1</sup> This section also applies to those organizations which only require access to patient demographic information (e.g., BC Transplant Society).

## 3 PROCESSING RULES & MANDATORY SCREEN DISPLAYS

### 3.1 Patient Identification – TID

This transaction will return a patient record using the patient's PHN.

#### 3.1.1 Processing Rules

1. When the PHN returned is different from the PHN that was submitted, the local software must clearly indicate to the Pharmacist that a consolidated PHN has been returned. The message displayed should advise the Pharmacist to perform a patient identification (TID) transaction prior to updating the local system with the new PHN in order to confirm the PHN has been correctly consolidated.
2. The requested MoHS patient address record on PharmaNet must cause a comparison between the latest mailing address on the local software and the MoHS patient address record. This comparison can be done automatically by the software or manually by the pharmacist. If these records do not match, the Pharmacist must update the incorrect or out of date record(s) on both systems. CPBC

### 3.1.2 Mandatory Screen Display Standards

The following table defines the minimum mandatory display standards for a successful TID transaction, as well as those fields that must be displayed on the first screen of information presented. CPBC

INFORMATION RETURNED BY PharmaNet	OUTPUT	MANDATORY DISPLAY	DISPLAY ON FIRST SCREEN PRESENTED
PHN	ZCC	Y	Y
Patient First Name	ZPA	Y	Y
Patient Initials	ZPA	Y	Y
Patient Last Name	ZPA	Y	Y
Patient Date of Birth	ZCC	Y	Y
Patient Gender	ZCC	Y	Y
Patient Address (line 1)	ZPA	Y	Y
Patient Address (line 2)	ZPA	Y	Y
City	ZPA	Y	Y
Postal Code	ZPA	Y	N
Province Code	ZPA	Y	N
healthnetBC t/BC Participant Message	ZPI	Y	N
Mandatory Display of Response Message Status.	ZZZ	Y	Y

### 3.2 Prescriber Identification – TIP

This function may be used to obtain information on a Provider (e.g., physician, pharmacist, podiatrist, dentist, veterinarian, etc.) or a pharmacist by either searching a name or by the unique identification number assigned by the appropriate regulatory body.

Please note that MSP billing numbers are not used to identify prescribers anywhere on PharmaNet.



### 3.2.1 Processing Rules

1. Practitioner demographics and practice information is retrieved by either a combination of Practitioner ID number and Reference ID or by using Family Name and optionally, any or all characters of the First Name.
2. If more than 100 matches are found, none will be returned. The transaction Segment Count will be 100, and the following message will be returned '106 Selection criteria chosen resulted in too many matches'. If less than or equal to 100 matches are found, the number of matches will be returned in the Transaction Segment Count of the ZZZ.
3. If a unique match is found, the response will be the prescriber record. If a unique match is not found, a list (maximum of 100) in alphabetical order by first name of practitioners matching the search criteria will be returned. Where there is more than one record matching on the first name, these records will be displayed in ascending practitioner ID order.

### 3.2.2 Mandatory Screen Display Standards

The following table defines the minimum mandatory display standards for a successful TIP transaction, as well as those fields which must be displayed on the first screen of information presented. CPBC

INFORMATION RETURNED BY PharmaNet	OUTPUT	MANDATORY DISPLAY	DISPLAY ON FIRST SCREEN PRESENTED
Practitioner Id	ZPH	Y	Y
Practitioner Id Ref	ZPH	Y	Y
Practitioner First Name	ZPH	Y	Y
Practitioner Initials	ZPH	Y	N
Practitioner Last Name	ZPH	Y	Y
Type of Address	ZPH	N	N
Address (line 1)	ZPH	Y	N
Address (line 2)	ZPH	Y	N
City	ZPH	Y	Y
Province Code	ZPH	Y	N
Postal Code	ZPH	Y	N
Country	ZPH	N	N
Effective Date	ZPH	N	N
Area Code	ZPH	Y	N
Phone Number	ZPH	Y	N
healthnetBC Participant Message	ZPI	Y	N
Mandatory Display of Response Message Status.	ZZZ	Y	Y

### 3.3 Patient Address Update – TPA

This transaction is used by the Pharmacist to update a patient's address on *healthnetBC*. It uses the PHN of the patient to find the existing address.

#### 3.3.1 Processing Rules

1. A TPA request coming through *healthnetBC* will be processed by CRS. If CRS is not available, the TPA update will be processed via PharmaNet's 'Stand-in' function.
2. To ensure that the address is updated correctly on *healthnetBC*, the complete address must be entered. All required fields and the Address Prefix 2 field (if it contains data), must be filled in. If the Address Prefix 2 field is left blank, it will be updated as blank on the CRS. CRS currently combines the Address Prefix 2, City, Province and Postal Code into unstructured field.
3. All changes to the patient's mailing address maintained on the local system should be transmitted to *healthnetBC*.
4. The local software must provide the ability to capture a local phone number for a patient.
5. Canada post mailing standards must be used for Canadian address. Format for postal code six (6) alphanumeric characters with no spaces (e.g., V9V9V9). Out-of-country zip codes are stored in the postal code field, since the entry of a country code other than Canada eliminates the format checking.
6. The requirements for address verification are:
  - a) If the country is Canada, then the province code must be a legitimate province code
  - b) If the province code is legitimate, then the first position of the postal code must be a legitimate entry for the province; and,
  - c) If the country is something other than Canada, then the postal code is not required.

Please note this is presently not working correctly. PharmaNet returns an error if the postal code is left blank. Pharmacists should be instructed to enter their facility's postal code if the patient's zip code or equivalent code is not available.

7. Postal codes must be edited on the local system based on the following:

PROVINCE	PROVINCE CODE	POSTAL CODE FIRST CHARACTER
Alberta	AB	T
British Columbia	BC	V
Manitoba	MB	R
New Brunswick	NB	E
Newfoundland	NF	A
Nova Scotia	NS	B
Northwest Territories / Nunavut	NT	X
Ontario	ON	K,L,M,N,P
Prince Edward Island	PE	C
Quebec	PQ	G,H,J
Saskatchewan	SK	S
Yukon Territories	YT	Y

**3.3.2 Mandatory Screen Display Standards**

This table defines the minimum mandatory display standards for a successful TPA transaction, as well as those field which must be displayed on the first screen of information presented. CPBC

INFORMATION RETURNED BY <i>healthnetBC</i>	OUTPUT	MANDATORY DISPLAY	DISPLAY ON FIRST SCREEN PRESENTED
Mandatory Display of Response Message Status.	ZZZ	Y	Y

### 3.4 PHN Assignment – TPH

This transaction will create a new patient record and assign a PHN.

#### 3.4.1 Processing Rules

1. The local system must enforce a TPN transaction prior to a TPH transaction (assigning a PHN).
2. Prior to assigning a PHN, the local system software must prompt the Pharmacist with the following statement 'This transaction will cause a new PHN to be assigned. Are you certain this patient does not have a PHN – Y/N?'
3. The default condition must be set to 'N' to cancel the transaction. The Pharmacist must enter 'Y' to cause the transaction to proceed.
4. Names must begin with A – Z.
5. Date of birth must not be greater than current date and must be in valid date format.
6. Postal codes must be edited on the local system based on the following:

PROVINCE	PROVINCE CODE	POSTAL CODE FIRST CHARACTER
Alberta	AB	T
British Columbia	BC	V
Manitoba	MB	R
New Brunswick	NB	E
Newfoundland	NF	A
Nova Scotia	NS	B
Northwest Territories / Nunavut	NT	X
Ontario	ON	K,L,M,N,P
Prince Edward Island	PE	C
Quebec	PQ	G,H,J
Saskatchewan	SK	S
Yukon Territories	YT	Y

7. The software must prevent the provider from exiting without writing this information to the local system.

### 3.4.2 Mandatory Screen Display Standards

This table defines the minimum mandatory display standards for a successful TPH transaction, as well as those field which must be displayed on the first screen of information presented. CPBC

INFORMATION RETURNED BY <i>healthnetBC</i>	OUTPUT	MANDATORY DISPLAY	DISPLAY ON FIRST SCREEN PRESENTED
Personal Health Number	ZCC	Y	Y
Mandatory Display of Response Message Status.	ZZZ	Y	Y

### 3.5 Patient Name Search – TPN

The Patient Name Search uses the name, date of birth and gender to find the patient's record and PHN on *healthnetBC*.

#### 3.5.1 Processing Rules

1. The local system's patient record must include the PHN.
2. All patients must be identified and profiled by a PHN.
3. A TPN transaction coming through PharmaNet will be processed by CRS. If CRS is not available, the search will be processed by *healthnetBC* via its 'Stand-in' function.
4. SSOs must provide both name search options as follows:
  - a) A CRS search using full surname, complete or partial given name, gender and full date of birth (CCYYMMDD) to return all exact matches, as well as matches where the day (DD) is equal to 01. Note the 'Stand-in' search on PharmaNet will return only the exact matches.
  - b) A CRS search using full surname, complete or partial given name, gender and partial date of birth (CCYY only) to return all exact matches, as well as matches for patients whose date of birth falls within a +/- five (5) year window of the year provided. Note the 'Stand-in' search on PharmaNet will return only exact matches.

5. The following options must be presented to the Provider for each search:
  - a) Change search criteria; and,
  - b) Select a PHN from the list displayed.
6. Regardless of patient gender entered ('M' or 'F'), the search will return exact matches on the gender provided and any records with a gender of 'U' (unknown). Note the 'Stand-in' search on PharmaNet will return only exact matches.
7. All matches that are returned will be in alphabetic order and where the surname and given names are the same, in ascending order by name and PHN.
8. If no matches are found, the transaction will be completed successfully, the Transaction Segment Count will be zeros and either of the following messages will be returned:

If CRS is available:

'CRNS002 Nothing found matching search parameters'

For Stand-in Processing:

'108 No matches found for selection criteria chosen'
9. Both the CRS and 'Stand-in' searches will return up to 25 matches. If the number of matches exceeds 25, the Transaction Segment Count will be zeros and the following message will be returned '106 Selection criteria chosen resulted in too many matches'. In this case, the criteria must be narrowed and the search repeated.
10. The name search will first attempt to find exact matches using all the characters of the given name provided. If no matches are found, then a re-search is automatically done using only the first letter of the given name. This re-search does not function during 'Stand-in' processing.
11. Names must begin with A – Z.
12. Date of birth must not be greater than current date and must be in valid date format.

### 3.5.2 Mandatory Screen Display Standards

This table defines the minimum mandatory display standards for a successful TPN transaction, as well as those fields that must be displayed on the first screen of information presented. CPBC

INFORMATION RETURNED BY <i>healthnetBC</i>	OUTPUT	MANDATORY DISPLAY	DISPLAY ON FIRST SCREEN PRESENTED
PHN	ZCC	Y	Y
Patient Date of Birth	ZCC	Y	Y
Patient Gender	ZCC	Y	N
Patient First Name	ZPA	Y	Y
Patient Initials	ZPA	Y	Y
Patient Last Name	ZPA	Y	Y
Patient Phone Number	ZPA	Y	N
Patient Address Type	ZPA	N	N
Patient Address (line 1)	ZPA	Y	Y
Patient Address (line 2)	ZPA	Y	Y
City	ZPA	Y	Y
Country	ZPA	N	N
Postal Code	ZPA	Y	N
Province Code	ZPA	Y	N
Mandatory Display of Response Message Status.	ZZZ	Y	Y

## 4 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 the last ten digits of the PHN with no leading zeroes. The number is broken down into single digits and each digit is weighted. The weights are as follows:

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 its weight and divided by 11. The remainder is loaded into an array. The array values are added to obtain a total. Divide the total by 11, and subtract the remainder from 11 to yield a check digit value. Compare this value to the 10<sup>th</sup> digit and if equal then the PHN is valid, otherwise the PHN is invalid.

Example:

The PHN in the example is '0009123947241':

PHN	9	1	2	3	9	4	7	2	4	1
Weights		2	4	8	5	10	9	7	3	
Multiply		1x2	2x4	3x8	9x5	4x10	7x9	2x7	4x3	
Product		2	8	24	45	40	63	14	12	
Divide by 11		2 ÷ 11	8 ÷ 11	24 ÷ 11	45 ÷ 11	49 ÷ 11	63 ÷ 11	14 ÷ 11	12 ÷ 11	
Remainder		2	8	2	1	7	8	3	1	

Sum of remainder values is 32.

Divide 32 by 11. The result is a remainder of 10.

Take the remainder (10) from 11. This should match the check digit (tenth place digit) (11-10=1).

If equal then the PHN is valid, otherwise the PHN is invalid.

If the result is 10 or 11, the PHN is not valid, considering the tenth digit is a single number.