



Independent, Trend-Focused Pharmacy Benefit Manager™

# Implementation Guide

for the

# CashCard Service

Release 1.24

Document Rev. 1.10

May 30, 2018

**One Source. Lower Cost. Better Care.™**

*Managing Trend Before It Happens™*

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*Table 1 Revision History*

| Date       | Name                          | Reason for Changes  | Release | Doc. Rev. |
|------------|-------------------------------|---|---------|-----------|
| 04/19/2017 | Harry Smith<br>Paul Schmeling | Approved Version  | 1.0     | 1.0       |
| 05/03/2017 | Harry Smith<br>Erik Foley     | Make hoursOfOperation and phone optional in GetPharmacyDrugPricing Response.  | 1.0     | 1.1       |
| 05/20/2017 | Casen Densmore                | Added Integration Testing Definition  | 1.0     | 1.2       |
| 06/01/2017 | Harry Smith                   | Updates to GetPharmacyDrugPricing Response<br>brandName Optional<br>description Optional<br>genericName Optional<br>Add details on hoursOfOperation | 1.0     | 1.3       |
| 06/20/2017 | Casen Densmore                | Added clarity around the certificate  | 1.0     | 1.4       |
| 07/05/2017 | Casen Densmore                | Updated Time Zone format  | 1.0     | 1.5       |
| 7/11/2017  | Casen Densmore                | Update wsdl url, and added op in front of service names   | 1.0     | 1.6       |
| 7/14/2017  | Casen Densmore                | Added clarity around omitting fields that are not used from the request.  | 1.0     | 1.7       |
| 8/15/2017  | Casen Densmore                | Update hours of operation to include explanation on stores that open at the half hour mark.   | 1.1     | 1.8       |
| 8/29/2017  | Casen Densmore                | Add more detail on how to create a certificate  | 1.5     | 1.9       |
| 5/30/2018  | Fatih Dirlikli                | Added new GetPharmacies Operation   | 1.24    | 1.10      |
|            |                               |   |         |           |
|            |                               |   |         |           |

## Overview

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### Document Overview

This document is an Implementation Guide to aid in understanding the proper use of MedImpact's CashCard service. This service is an entity service in MedImpact's inventory of web services. As an entity service, the operations of this service are typically useful for assisting in the automation of multiple business processes.

This Implementation Guide contains information useful to "consumers" of the operations of this service. This information is intended to supplement the detailed WSDL and XML Schema documents associated with this service. For each service operation, this document includes a description of the operation functions, the Request and Response messages, the pre-conditions, the post-conditions, and the error messages. For further information about the contents of the Request and Response messages, see the "Data Dictionary for the Web Service Messages".

### Service Overview

#### Purpose

This Cash Card service is classified as an "Entity" service in that it contains business logic that is associated with a business entity (i.e., a "Cash Card") which can be re-used for a number of different business processes.

#### Service URL Address

UAT/Certification: [https://uatrxsavings-ws.medimpact.com/cashcard-ws-v1\\_0/soap/cashcard](https://uatrxsavings-ws.medimpact.com/cashcard-ws-v1_0/soap/cashcard)

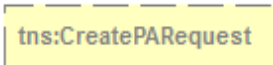

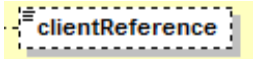
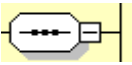
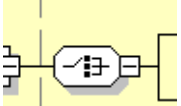
Production: [https://rxsavings-ws.medimpact.com/cashcard-ws-v1\\_0/soap/cashcard](https://rxsavings-ws.medimpact.com/cashcard-ws-v1_0/soap/cashcard)

## Key Concepts and Principles

This section describes some key concepts or principles that may be useful for understanding the functionality performed by the operations of this web service.

### Schema Diagram

The document has lot of schema diagram. The following notes would help in reading these diagrams.

- Each long dotted box represents a type. Example  represents a type CreatePAREquest
- Each rectangle box (solid line/short dotted) represents an element. Example  represents a element “username”.
- The short dotted line represents optional element. Example 
- The symbol  represents a sequence. All elements under a sequence needs to be in the same order.
- The Symbol  represent a choice. Only one element can be selected.
- For any parameters that have no value entered, please omit the entire property from the request.  
I.E. if you are only passing Zip Code only pass:  

```
<v1:locationCriteria>
  <v1:zipcode>12345</v1: zipcode >
</v1:locationCriteria>
```

### Security

The following security patterns will be enforced for CashCard web services:

- IP-White Listing
- Security Token
- Message Time stamping
- Client Signature validation

#### IP-White Listing

As part of the on-boarding process, the Client will supply the external IP(s) that will be presented at the MedImpact Firewall for both UAT and Production request. MedImpact will update their Firewall configuration to allow the specified IP(s) to access the appropriate web services (UAT or Production).

#### MedImpact Supplied Token

As part of the on-boarding process, MedImpact will generate a client specific security Token that will be distributed to the Client. This token can be used with both UAT and Production URLs. It must be included in each Request.

### Message Time stamping

Each request sent must include a time stamp that indicates the time the message was built and sent. Upon receipt of the Request, the CashCard web service will verify that the supplied time stamp is with the acceptable window of five (five) minutes.

### Client Signature validation

As part of the Client on-boarding process, the Client will supply MedImpact with self-signed CA code signing certificate.

For each request, the corresponding Private Key will be used to sign the Timestamp value. Once the Timestamp is signed, it should be base64 encoded and then supplied in the HTTP header, labeled as CC-Timestamp-Signature.

The client signing certificate supplied to MedImpact will be used by the CashCard web service to validate the authenticity of the caller and the Message Timestamp.

In order to create a certificate you must first have a private key and a csr (certificate signing request). If you are unfamiliar with how to create those, please look here (This assumes you are using OpenSSL to generate the certificate): <https://www.digitalocean.com/community/tutorials/openssl-essentials-working-with-ssl-certificates-private-keys-and-csrs>

The certificate should be good for three years, and can be set using the option “–days 1095”. The –sha256 option should also be used to make it more secure.

Once all the private key, csr and certificate have been created, you can validate they all match by executing the following, while replace the file name with the file names you defined for the files:

```
openssl rsa -noout -modulus -in domain.key | openssl md5
openssl x509 -noout -modulus -in domain.crt | openssl md5
openssl req -noout -modulus -in domain.csr | openssl md5
```

If the output of each command is identical, than you should be sure that private key, certificate and CSR are related.

## Operations

The CashCard web service is a collection of operations that can be utilized by a client. The names of the operations and their purposes are listed below.

*Table 2 Cash Card Operations*

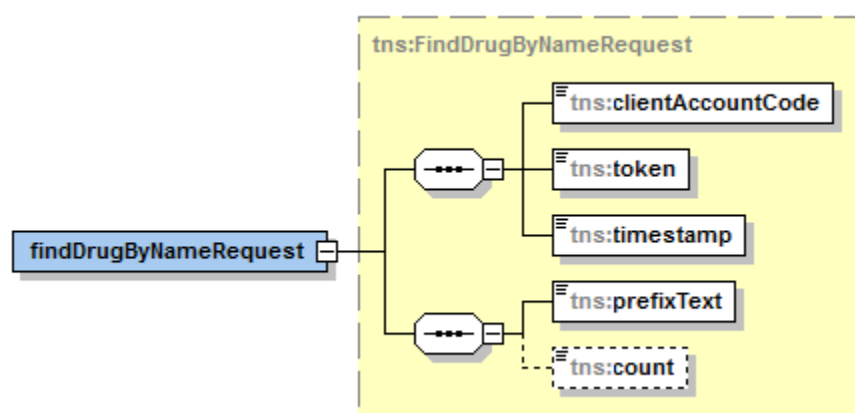
| Operation                | Name  |
|--------------------------|---|
| opFindDrugByName         | To provide the list of drugs that start with the drug/ drug prefix  |
| opGetPharmacyDrugPricing | Find the lowest pricing for the requested drug at the participating pharmacies closest to the requested location                |
| opGetDrugInfo            | Provide detailed information about the requested drug such as drug usage, interactions etc                                      |
| opGetPharmacies          | Enables location or npi based pharmacy searches. Returns a single or a list of pharmacies with detailed information about them. |

The following section provides detail of each of the operation. Please note that the elements are used in a sequence which means it needs to be in the same order on both the request and in the response.

### “opFindDrugByName” Operation

The FindDrugByName operation contains parameters to request the return of an array of DrugNameSuggestion values matching the incoming PrefixText criteria.

#### Request Message



*Figure 1 FindDrugByName Request Schema*

Table 3 FindDrugByName Request Elements

| Element Name      | Element Type   | Description  |
|-------------------|--|--|
| clientAccountCode | String 5<br>Pattern [!~]* (no spaces)  | (Required) Client Account Code                           |
| token             | String 344<br>Pattern [!~]* (no spaces)  | (Required) Security token                                |
| timeStamp         | dateTime<br>Format: yyyy-MM-dd'T'HH:mm:ss.SSSXXX (2017-07-05T09:41:45.713-07:00) | (Required) Time Stamp                                    |
| prefixText        | String<br>Min Length: 3  | (Required) Drug search text of at least 3 character      |
| count             | Integer<br>Min Value:1<br>Max Value:20   | (Optional) Number of drug names to return. Default is 10 |

## Response Message

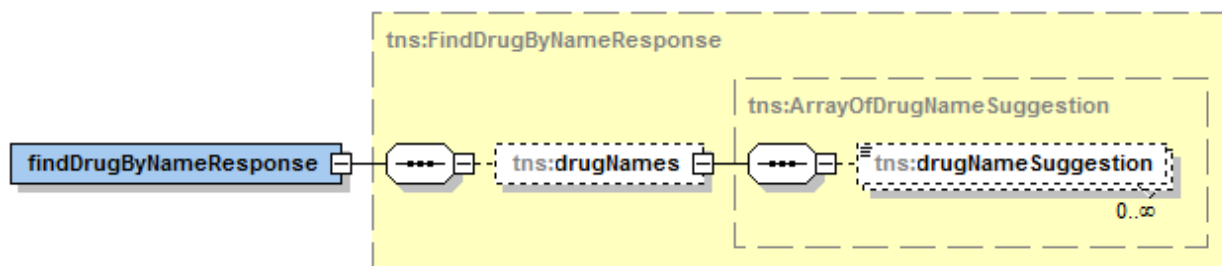


Figure 2 FindDrugByName Response Schema

Table 4 FindDrugByName Response Elements

| Element Name       | Element Type | Description |
|--------------------|--------------|-------------|
| drugNameSuggestion | String 70    | Drug name   |



## “opGetPharmacyDrugPricing” Operation

The GetPharmacyDrugPricing operation contains parameters to request the return of an array of LocatedDrug values. The response includes LocatedDrugForm, LocatedDrugName, LocatedDrugQty, and LocatedDrugStrength that contain values for filtering additional GetPharmacyDrugPricing searches.

The request always requires ClientAccountCode, token values and timestamp. Also, a DrugName, GSN, or NDC value must be requested (note: passing an NDC will return a less accurate price than passing a GSN). A search location must be provided, either by a specific pharmacy identifier with NPI, or a latitude and longitude, or zip, or a city and state. The GetPharmacyDrugPricing Response should return information for Generic Version, if available, of the requested drug unless the request is specified for Brand Drug

### Request Message

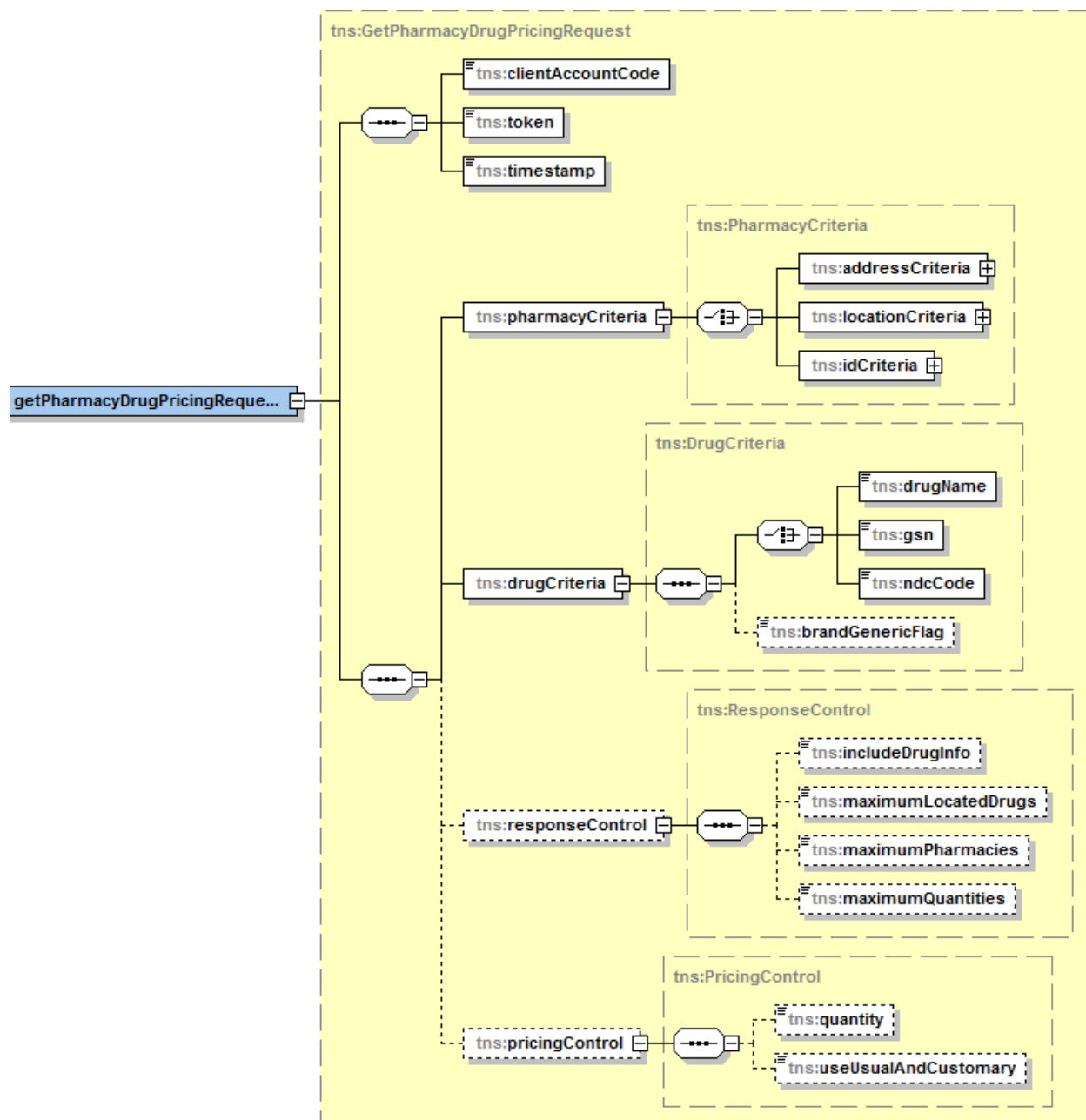


Figure 3 GetPharmacyDrugPricing Request Schema (Main)

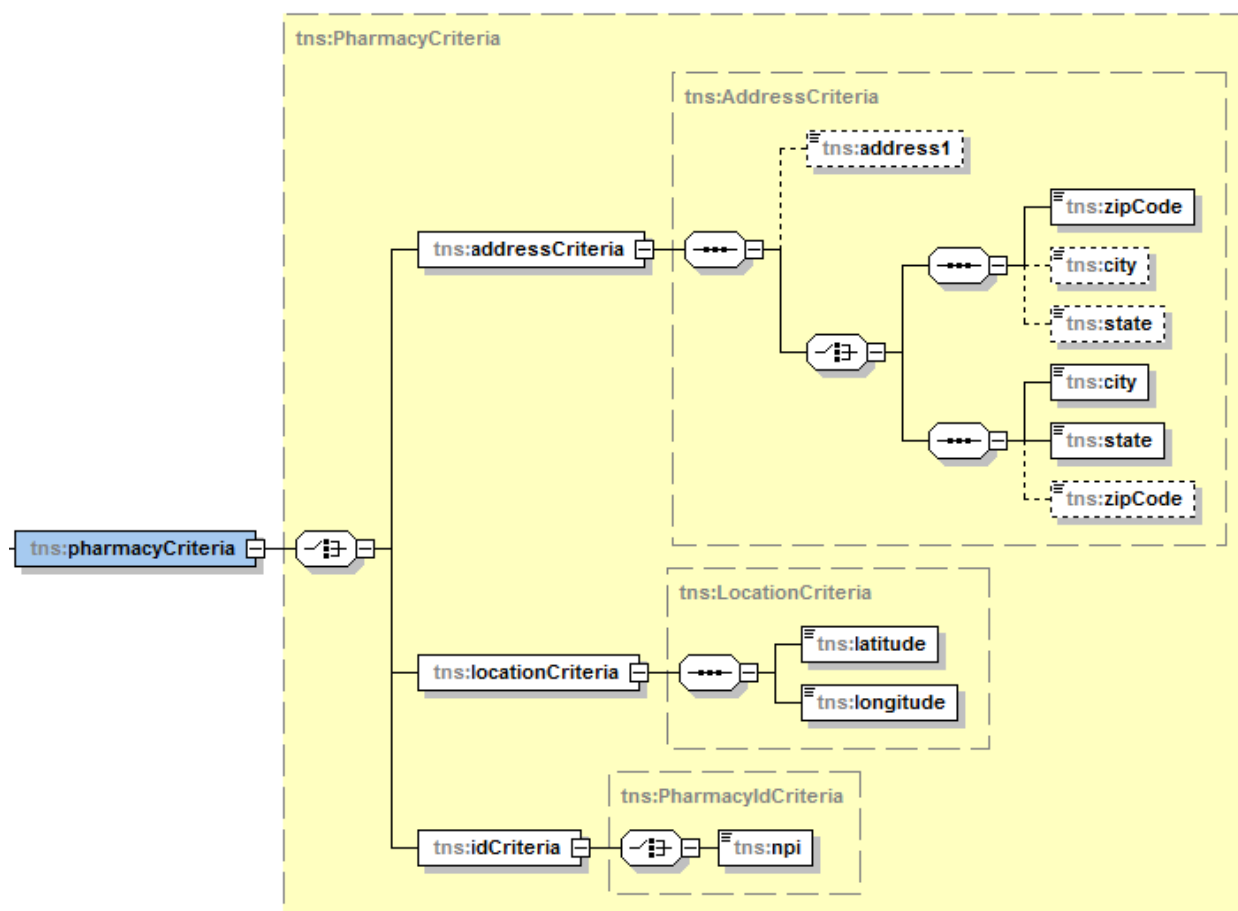


Figure 4 GetPharmacyDrugPricing Request Schema (Pharmacy Criteria)

Table 5 GetPharmacyDrugPricing Request Elements

| Element Name      | Element Type                            | Description  |
|-------------------|---|--|
| clientAccountCode | String 5<br>Pattern [!~]* (no spaces)   | (Required) Client Account Code   |
| token             | String 344<br>Pattern [!~]* (no spaces) | (Required) Security token  |
| timeStamp         | dateTime<br>Format: CCYY-MM-DDThh:mm:ss | (Required) Time Stamp  |
| address1          | String 80                               | (Optional) Address of search location for closest pharmacies   |
| city              | String 80                               | (Conditional) City of search location for closest pharmacies. If addressCriteria is supplied, must supply either City and State or Zip Code. |

| Element Name             | Element Type  | Description  |
|--------------------------|---|--|
| state                    | String 2<br>Length 2<br>Pattern [A-Z]* (upper case characters only) | (Conditional) State of search location for closest pharmacies. If addressCriteria is supplied, must supply either City and State or Zip Code.    |
| zipCode                  | String 5<br>Length 5<br>Pattern [0-9]* (only digits)                | (Conditional) Zip code of search location for closest pharmacies. If addressCriteria is supplied, must supply either City and State or Zip Code. |
| latitude                 | Double<br>Min Value: -90.000<br>Max Value: 90.00                    | (Conditional) Latitude of search location for closest pharmacies. If locationCriteria is supplied, latitude is required.                         |
| longitude                | Double<br>Min Value: -180.000<br>Max Value: 180.00                  | (Conditional) Longitude of search location for closest pharmacies. If locationCriteria is supplied, longitude is required.                       |
| npi                      | Integer<br>Max Digits 10  | (Conditional) National Pharmacy identifier. If idCriteria is supplied, npi is required.  |
| drugName                 | String 70   | (Conditional) Drug name. One and only one of Drug Name, GSN and NDC Code is required.  |
| gsn                      | Integer<br>Max Digits 7<br>Non-negative                             | (Conditional) GCN Sequence Number. One and only one of Drug Name, GSN and NDC Code is required.  |
| ndcCode                  | Integer<br>Max Digits 11<br>Non-negative                            | (Conditional) National Drug Code (NDC) of the drug. One and only one of Drug Name, GSN and NDC Code is required.                                 |
| brandGenericFlag         | String 1<br>Values: B or G  | (Optional) Brand or generic indicator  |
| includeDrugInfo          | Boolean   | (Optional) Include LocatedDrugInfo in response   |
| maximumLocatedDrugs      | Integer<br>Min Value: 1<br>Max Value: 100                           | (Optional) Number of LocatedDrug items to return. Default is 5   |
| maximumLocatedPharmacies | Integer<br>Min Value: 1<br>Max Value: 100                           | (Optional) Number of pharmacies to return. Default is 10   |
| maximumlocatedQuantities | Integer<br>Min Value: 1<br>Max Value: 100                           | (Optional) Number of most commonly used LocatedDrug quantities to return. Default is 5   |

| Element Name         | Element Type               | Description                              |
|----------------------|----------------------------|--|
| quantity             | Double<br>Min Value: 0.000 | (Optional) Quantity of LocatedDrugQty    |
| useUsualAndCustomary | boolean                    | (Optional) Use Usual and Customary value |

## Response Message

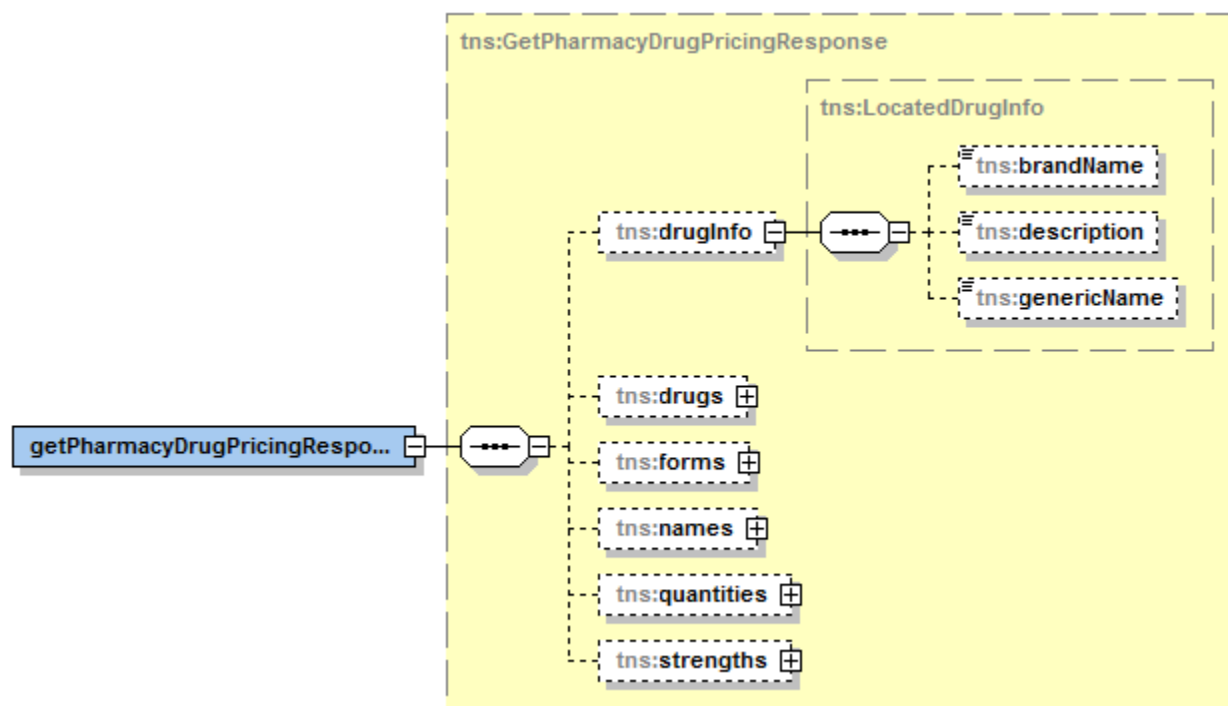


Figure 5 GetPharmacyDrugPricing Response Schema (Main)

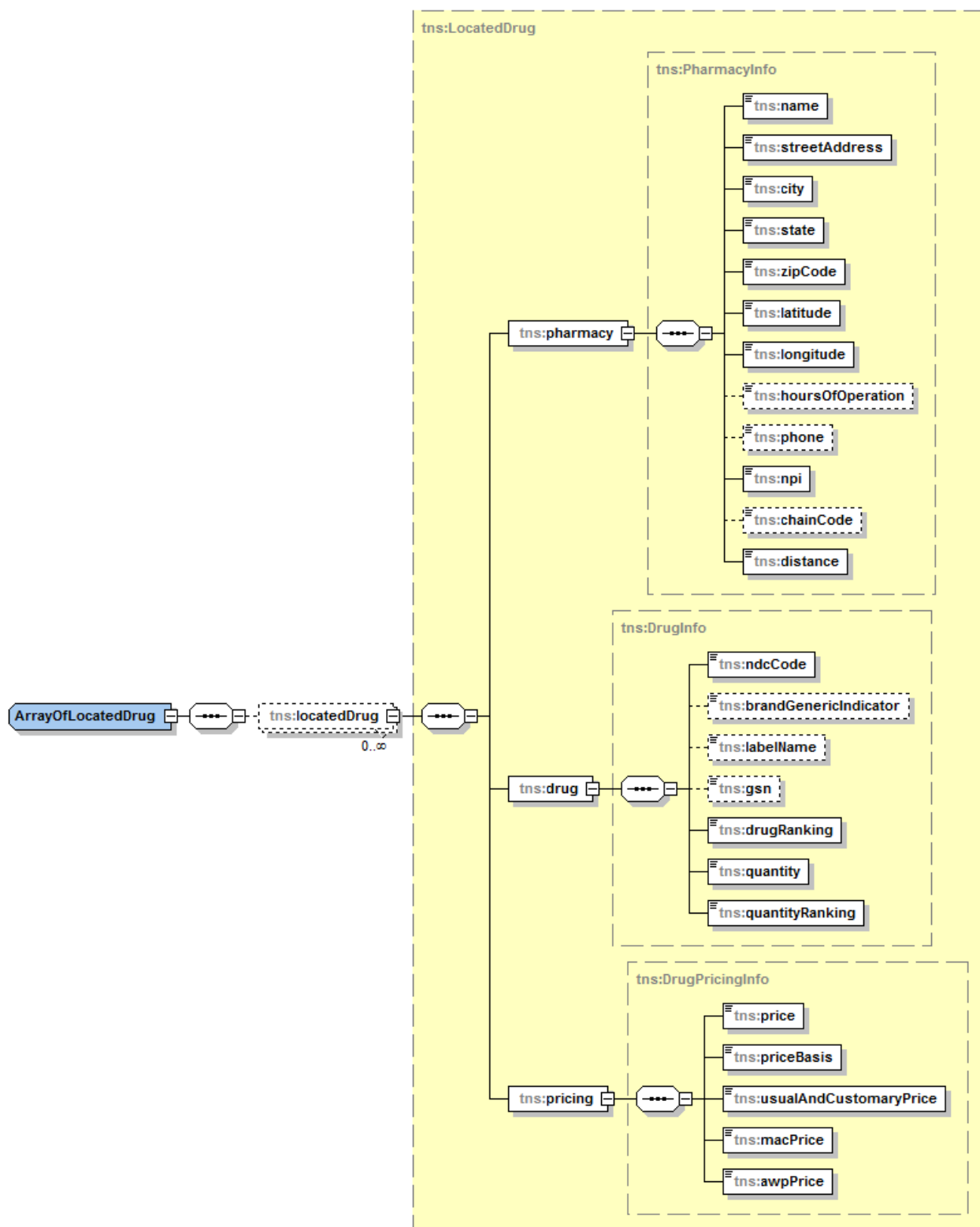


Figure 6 GetPharmacyDrugPricing Response Schema (Drugs)

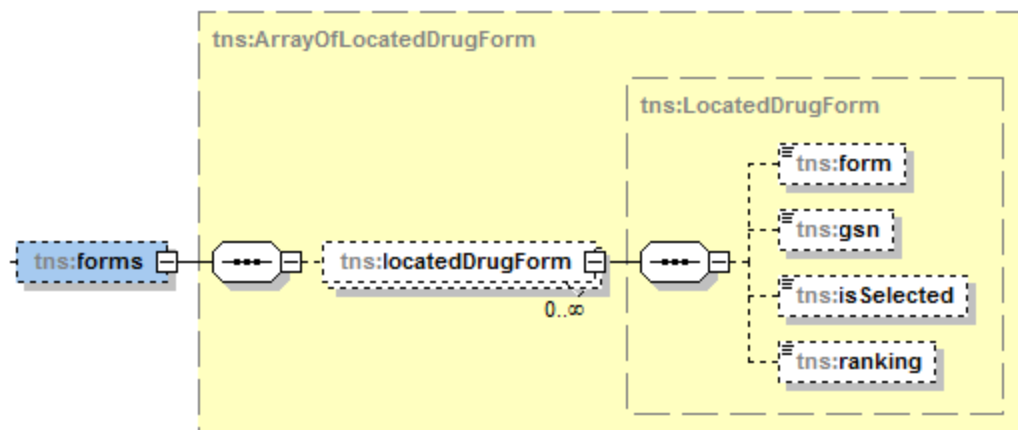


Figure 7 GetPharmacyDrugPricing Response Schema (Forms)

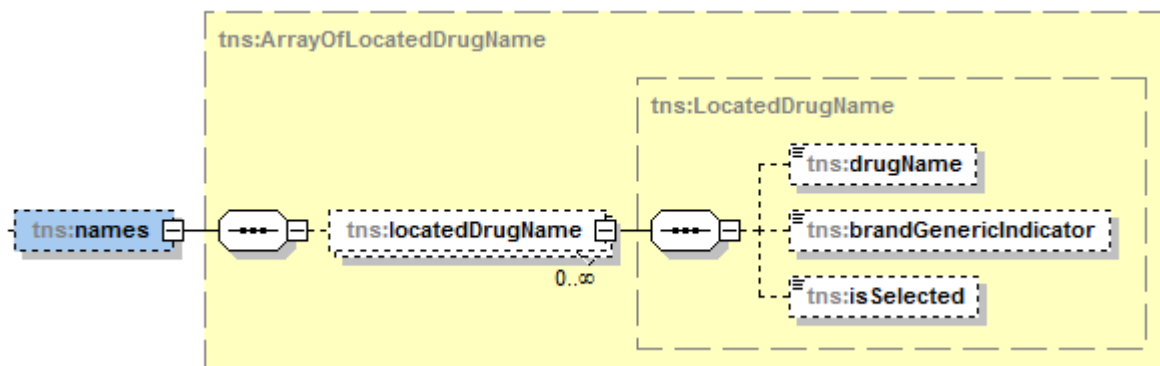


Figure 8 GetPharmacyDrugPricing Response Schema (Names)

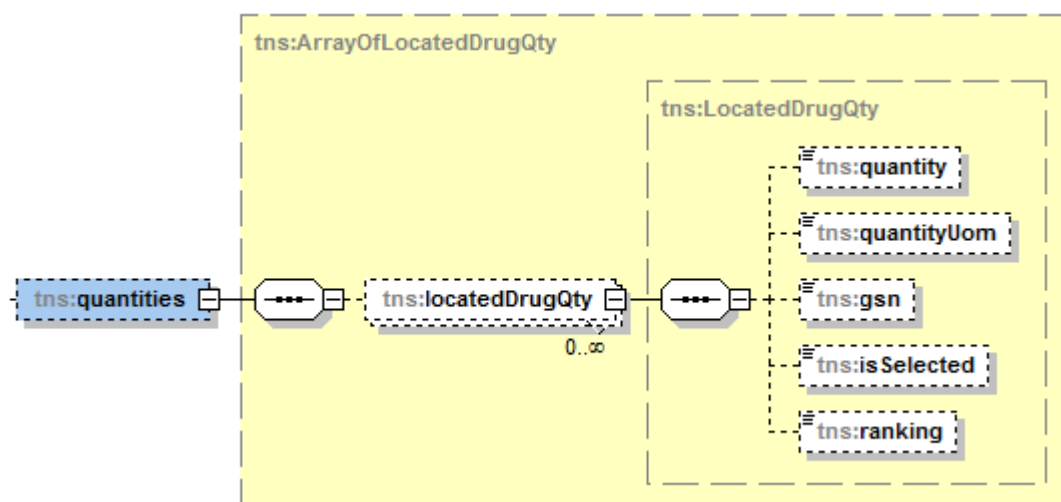


Figure 9 GetPharmacyDrugPricing Response Schema (Quantities)

Response – Schema (Strengths)

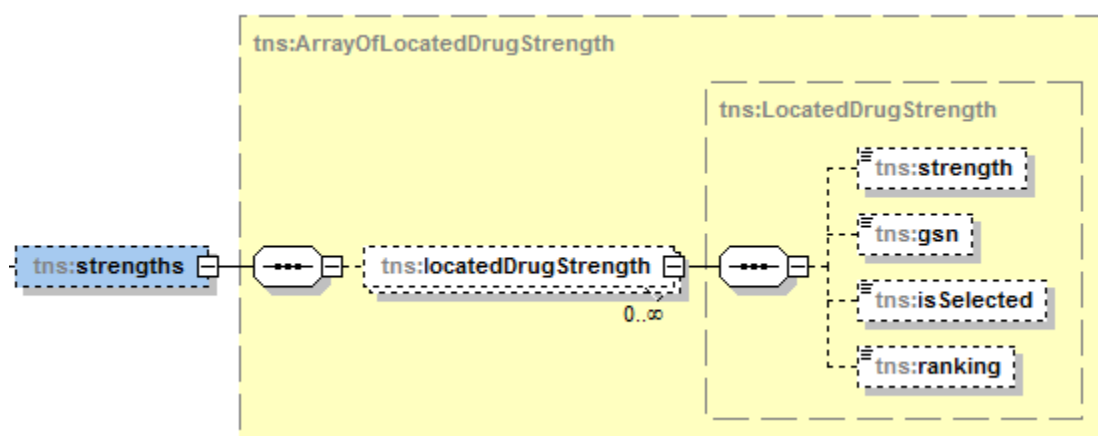


Figure 10 GetPharmacyDrugPricing Response Schema (Strengths)

Table 6 GetPharmacyDrugPricing Response Elements

| Element Name     | Element Type                                       | Description   |
|------------------|--|---|
| brandName        | String 70  | Drug brand name   |
| description      | String 4000  | Drug description  |
| genericName      | String 70  | Drug generic name   |
| name             | String 100   | Pharmacy name   |
| streetAddress    | String 80  | Pharmacy address  |
| city             | String 80  | Pharmacy city   |
| state            | String 2   | Pharmacy state  |
| zipCode          | String 5   | Pharmacy zip code   |
| latitude         | Double<br>Min Value: -90.000<br>Max Value: 90.00   | Pharmacy latitude   |
| longitude        | Double<br>Min Value: -180.000<br>Max Value: 180.00 | Pharmacy longitude  |
| hoursOfOperation | String 35  | Pharmacy hours of operation<br><br>The format is a fixed length, following a repeating pattern of Day #, 2-digit opening hour, 2-digit closing hour. If the store opens at the half hour (i.e. 8:30AM) mark, the 24 sequence begins again at 25 (25 = 12:30am, 26 = 1:30am, 27 = 2:30am...) |



| Element Name           | Element Type                             | Description   |
|------------------------|--|---|
|                        |  | <p>For example, this value:<br/>1 20817308174081750817608177</p> <p>equates to the following store schedule:</p> <p>Sunday = Day 1, Closed<br/>Monday = Day 2, 8AM – 5PM<br/>Tuesday = Day 3, 8AM – 5PM<br/>Wednesday = Day 4, 8AM – 5PM<br/>Thursday = Day 5, 8AM – 5PM<br/>Friday = Day 6, 8AM – 5PM<br/>Saturday = Day 7, Closed</p> |
| phone                  | String 15                                | Pharmacy phone number   |
| npi                    | Integer<br>Max Digits 10<br>Non-negative | National Pharmacy identifier  |
| chainCode              | String 3                                 | Pharmacy chain code   |
| distance               | Double                                   | Pharmacy distance from search location  |
| ndcCode                | Integer<br>Max Digits 11<br>Non-negative | Drug identifier   |
| brandGenericIndicator  | String 1                                 | "B" = Brand; "G" = Generic; "A" = Brand or Generic  |
| labelName              | String 70                                | Drug label name   |
| gsn                    | Integer<br>Max Digits 7<br>Non-negative  | GCN Sequence Number   |
| drugRanking            | Integer                                  | Most commonly used drug label ranking (with searches by DrugName)   |
| quantity               | Double                                   | Drug quantity   |
| quantityRanking        | Integer                                  | Ranking of most commonly used quantity per Label Name   |
| price                  | Decimal                                  | Drug price  |
| priceBasis             | String                                   | Price determination (AWP, Usual and Customary, or MAC)  |
| usualAndCustomaryPrice | Decimal                                  | Drug Usual and Customary price  |

| Element Name | Element Type            | Description  |
|--------------|-------------------------|--|
| macPrice     | Decimal                 | Drug MAC price   |
| awpPrice     | Decimal                 | Drug AWP price   |
| form         | String 30               | Drug Form  |
| isSelected   | Boolean                 | Value is current filter for return datasets                |
| ranking      | Integer<br>Non-negative | Most commonly used drug form, quantity or strength ranking |
| drugName     | String 70               | Drug Medication name                                       |
| quantityUom  | String                  | Quantity Unit-of-measure                                   |
| strength     | String 15               | Strength Description                                       |

## “opGetDrugInfo” Operation

### Request Message

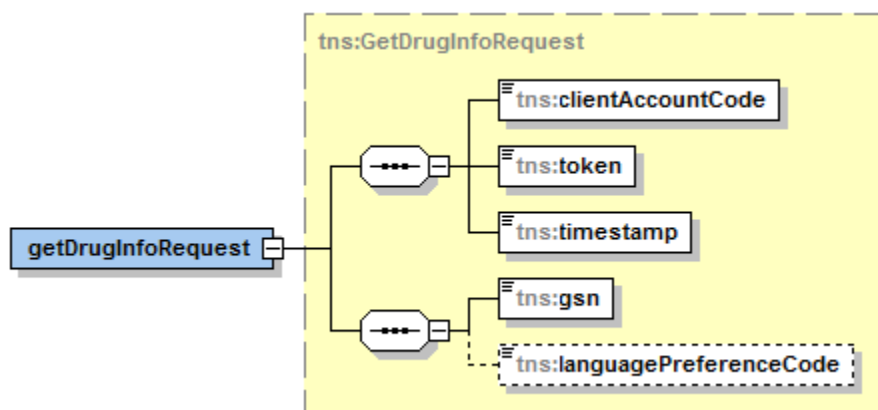


Figure 11 GetDrugInfo Request Schema

Table 7 GetDrugInfo Request Elements

| Element Name           | Element Type                                       | Description   |
|------------------------|--|---|
| clientAccountCode      | String 5<br>Pattern [!~]* (no spaces)              | (Required) Client Account Code                              |
| token                  | String 344<br>Pattern [!~]* (no spaces)            | (Required) Security token                                   |
| timeStamp              | dateTime<br>Format: CCYY-MM-DDThh:mm:ss            | (Required) Time Stamp                                       |
| gsn                    | Integer<br>Max Digits 7<br>Non-negative            | (Required) GCN Sequence Number                              |
| languagePreferenceCode | String 2<br>Length: 2<br>Pattern [!~]* (no spaces) | (Optional) language preference code for the drug info text. |

## Response Message

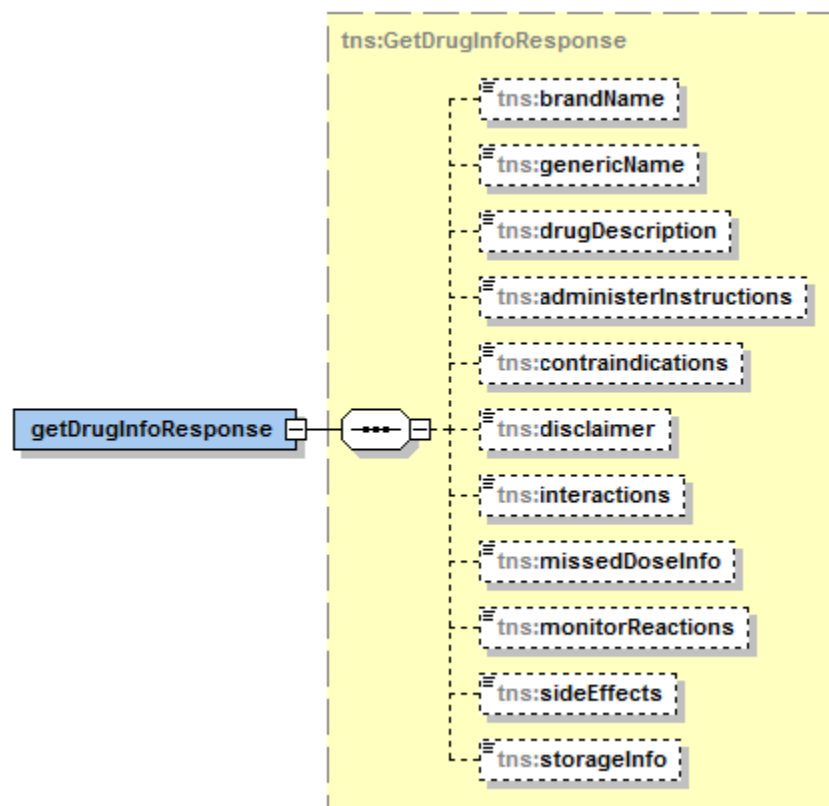


Figure 12 GetDrugInfo Response Schema

Table 8 GetDrugInfo Response Elements

| Element Name           | Element Type | Description                            |
|------------------------|--------------|--|
| brandName              | String 70    | Drug brand name                        |
| genericName            | String 70    | Drug generic name                      |
| drugDescription        | String 4000  | Drug description                       |
| administerInstructions | String 4000  | How patient should administer drug     |
| contraindications      | String 4000  | Patient contraindications              |
| disclaimer             | String 4000  | Drug information disclaimer            |
| interactions           | String 4000  | Drugs or medications that may interact |
| missedDoseInfo         | String 4000  | Missed dose information                |
| monitorReactions       | String 4000  | Patient reactions to monitor           |
| sideEffects            | String 4000  | Drug side effects                      |
| storageInfo            | String 4000  | Drug storage information               |

## “opGetPharmacies” operation

The GetPharmacies operation contains parameters to request the return of an array of pharmacies. The response includes a list of pharmacies with detail information. The response message details can be found in the Response Message section below.

The request always requires ClientAccountCode , Token values and timestamp. A search location must be provided, either by a specific pharmacy identifier with NPI, or a Latitude and Longitude, or Zip, or a City and State. Details of the addressCriteria, locationCriteria and idCriteria exactly matches with the GetPharmacyDrugPricing operation and can be found in that section.

### Request Message

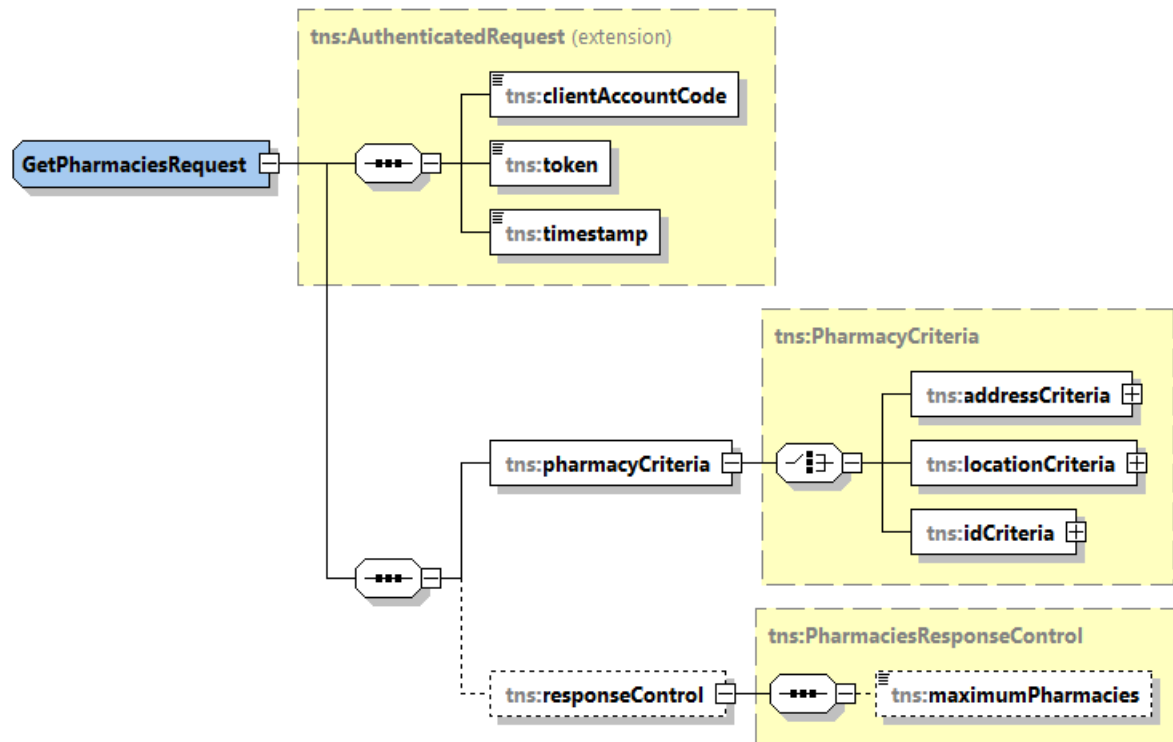


Figure 13 GetPharmacies Request Schema

Table 9 GetPharmacies Request Elements

| Element Name      | Element Type                            | Description                    |
|-------------------|---|--------------------------------|
| clientAccountCode | String 5<br>Pattern [!~]* (no spaces)   | (Required) Client Account Code |
| token             | String 344<br>Pattern [!~]* (no spaces) | (Required) Security token      |

| Element Name             | Element Type  | Description  |
|--------------------------|---|--|
| timeStamp                | dateTime<br>Format: CCYY-MM-DDThh:mm:ss                             | (Required) Time Stamp  |
| address1                 | String 80   | (Optional) Address of search location for closest pharmacies   |
| city                     | String 80   | (Conditional) City of search location for closest pharmacies. If addressCriteria is supplied, must supply either City and State or Zip Code.     |
| state                    | String 2<br>Length 2<br>Pattern [A-Z]* (upper case characters only) | (Conditional) State of search location for closest pharmacies. If addressCriteria is supplied, must supply either City and State or Zip Code.    |
| zipCode                  | String 5<br>Length 5<br>Pattern [0-9]* (only digits)                | (Conditional) Zip code of search location for closest pharmacies. If addressCriteria is supplied, must supply either City and State or Zip Code. |
| latitude                 | Double<br>Min Value: -90.000<br>Max Value: 90.00                    | (Conditional) Latitude of search location for closest pharmacies. If locationCriteria is supplied, latitude is required.                         |
| longitude                | Double<br>Min Value: -180.000<br>Max Value: 180.00                  | (Conditional) Longitude of search location for closest pharmacies. If locationCriteria is supplied, longitude is required.                       |
| npi                      | Integer<br>Max Digits 10  | (Conditional) National Pharmacy identifier. If idCriteria is supplied, npi is required.  |
| maximumLocatedPharmacies | Integer<br>Min Value: 1<br>Max Value: 100                           | (Optional) Number of pharmacies to return. Default is 10   |

## Response Message

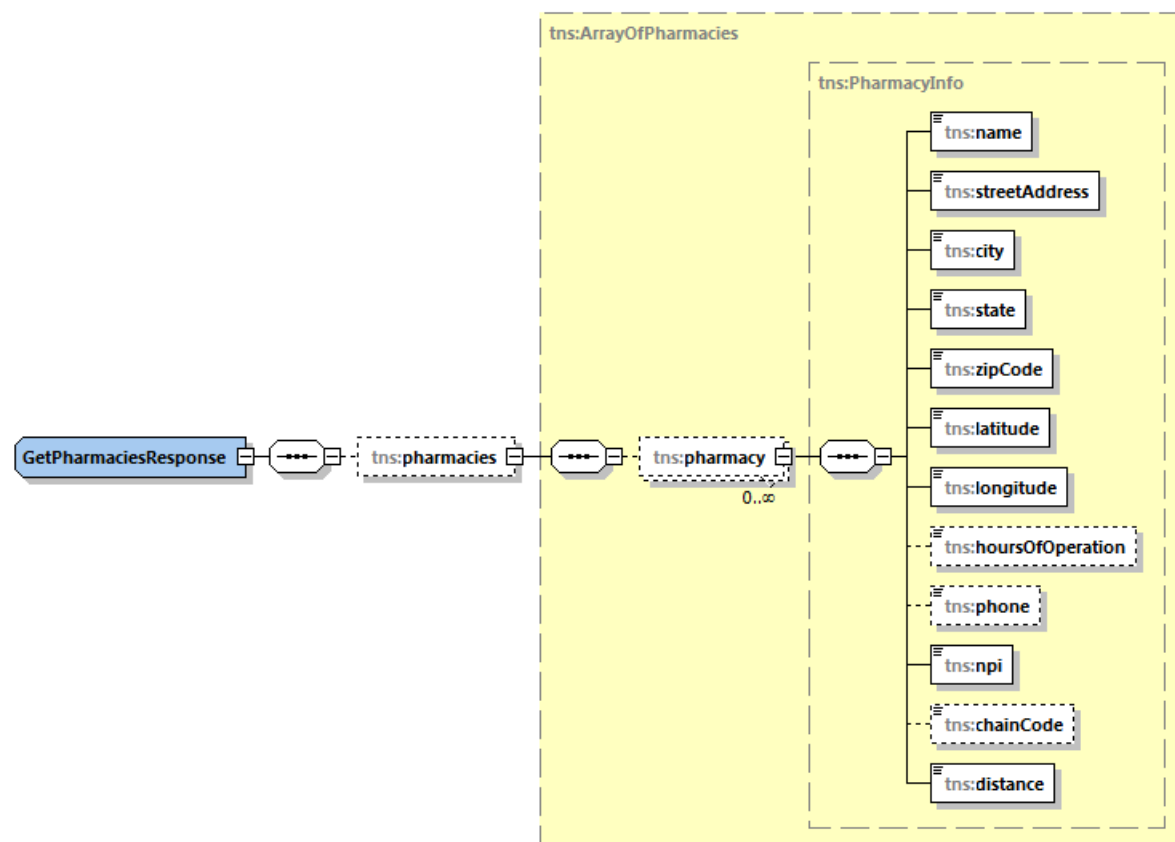


Figure 14 GetPharmacies Response Schema

Table 10 GetPharmacies Response Elements

| Element Name     | Element Type                                       | Description                 |
|------------------|--|-----------------------------|
| name             | String 100   | Pharmacy name               |
| streetAddress    | String 80  | Pharmacy address            |
| city             | String 80  | Pharmacy city               |
| state            | String 2   | Pharmacy state              |
| zipCode          | String 5   | Pharmacy zip code           |
| latitude         | Double<br>Min Value: -90.000<br>Max Value: 90.00   | Pharmacy latitude           |
| longitude        | Double<br>Min Value: -180.000<br>Max Value: 180.00 | Pharmacy longitude          |
| hoursOfOperation | String 35  | Pharmacy hours of operation |

| Element Name | Element Type                             | Description  |
|--------------|--|--|
|              |  | <p>The format is a fixed length, following a repeating pattern of Day #, 2-digit opening hour, 2-digit closing hour. If the store opens at the half hour (i.e. 8:30AM) mark, the 24 sequence begins again at 25 (25 = 12:30am, 26 = 1:30am, 27 = 2:30am...)</p> <p>For example, this value:<br/>1 20817308174081750817608177</p> <p>equates to the following store schedule:</p> <p>Sunday = Day 1, Closed<br/>Monday = Day 2, 8AM – 5PM<br/>Tuesday = Day 3, 8AM – 5PM<br/>Wednesday = Day 4, 8AM – 5PM<br/>Thursday= Day 5, 8AM – 5PM<br/>Friday = Day 6, 8AM – 5PM<br/>Saturday = Day 7, Closed</p> |
| phone        | String 15                                | Pharmacy phone number  |
| npi          | Integer<br>Max Digits 10<br>Non-negative | National Pharmacy identifier   |
| distance     | Double                                   | Pharmacy distance from search location   |



## Error Handling

Each of the operation can throw two types of errors, a “server” error or “client” error.

The **server error** represents failure of run time software components, hardware, database, and network communication protocols that are part of the service implementation. These errors represent failures that are not related to business logic or data that is being executed. MedImpact should be contacted when these errors occur.

The **client error** represents violations of business logic or data validation triggered by a wrong call by the client application.

Client applications typically need to respond differently to server errors and client errors. With a server error, the client application can resubmit the request with the original data. In the case of a client error, the application needs to resolve the errors (send a message back to the end user requesting that the input errors be corrected) before resubmitting the request. In either case, the receiving application should base processing on the error type (Server vs. Client) and the Error Code Type. The Error Code Value should not be used to drive the process.

## Server Error

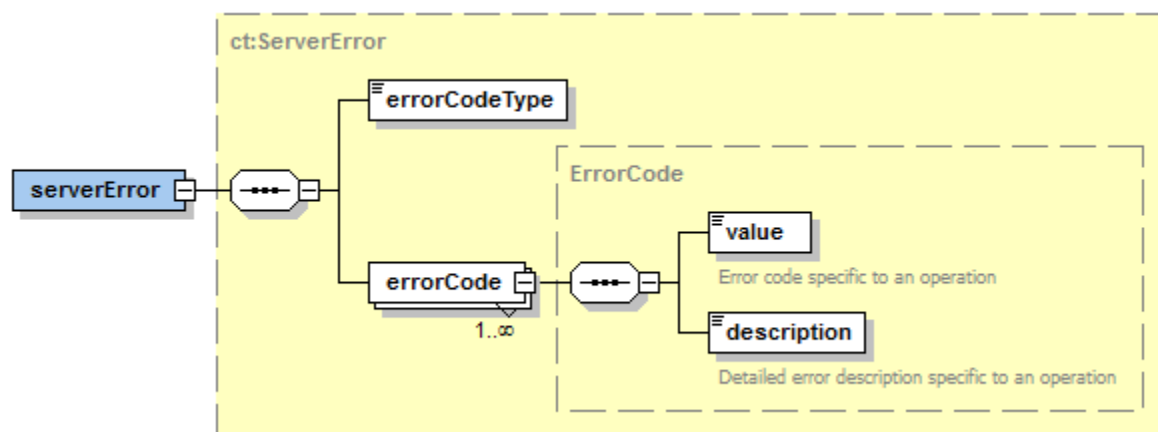


Figure 15 Server Error Schema

Table 11 Server Error Elements

| Element Name  | Element Type      | Description  |
|---------------|-------------------|--|
| errorCodeType | Enumerated String | Values: INTERNAL_SERVER_ERROR, DATABASE_SERVER_ERROR, COMMUNICATION_ERROR, CONFIGURATION_ERROR |
| value         | String            | Error code   |
| description   | String            | Error Description  |

## Client Error

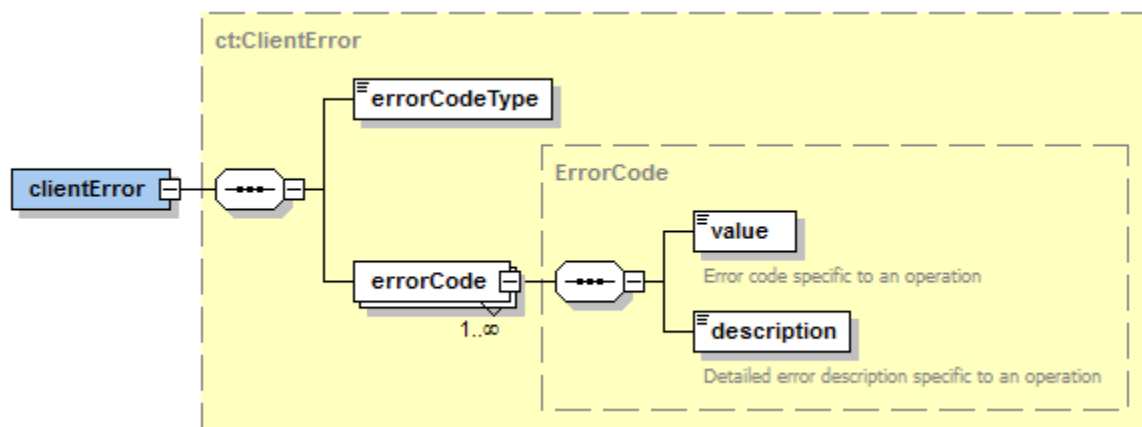


Figure 16 Client Error Schema

Table 13 Client Error Elements

| Element Name  | Element Type      | Description                          |
|---------------|-------------------|--------------------------------------|
| errorCodeType | Enumerated String | Values: INVALID_INPUT, MISSING_INPUT |
| value         | String            | Error code                           |
| description   | String            | Error Description                    |

### Client Error Code List

The table below lists the most relevant error codes returned for the operations.

Table 14 Client Error Code List

| Error Code | Description   |
|------------|---|
| 1          | Failed to authenticate request. Token invalid.  |
| 97         | Timestamp signature is invalid  |
| 98         | The Timestamp is out of range   |
| 99         | The format of the request does not pass schema validation. The <description> will contain the validation message. |

## Integration Testing

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As part of onboarding process, the client should test and verify that the connection to the API is working correctly and that they are able to get results back from the requests. Pricing and data validation has already been done by MedImpact so there is no requirement on the clients end to have support that testing as well.



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