



PMIX 3.0: Comprehensive Request Schema

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2 Background

The Prescription Monitoring Information eXchange (PMIX) is a standards organization sponsored by the Bureau of Justice Assistance. Its purpose is to support the sharing of Prescription Drug Monitoring Program data among PDMP organizations and their stakeholders by establishing and maintaining the PMIX National Architecture and related guidelines, policies and standards to minimize the cost and complexity of sharing PDMP data across organizational, vendor, geographic and operational boundaries; enable secure, trusted exchanges of PDMP data and promote consistency among PDMPs.

2.1 PMIX National Architecture

The PMIX National Architecture is a nationwide framework designed to enable standards-based sharing of information between Prescription Drug Monitoring Program (PDMP) organizations and their stakeholders.

2.2 Guiding Principles

The Guiding Principles of the PMIX National Architecture foster prescription drug information sharing across all Federal, State, Tribal and approved third party entities in accordance with the PMIX National Architecture are: ■ Protect state's full rights and control of Data Ownership.

- Promote the adoption of security standards that protects the confidentiality, integrity, and availability of the data, in transit and at rest.
- Promote uniformity in the selection of a limited set of approved common data standards.
- Promote a standard to which IT solution providers are held that ensures the best value products and/or services to PDMP participating states, while maintaining the public's trust and fulfilling public policy objectives.

3 Standards Implementation

3.1 Audience

This document applies to all entities involved in the exchange of prescription data between Prescription Drug Monitoring programs and their stakeholder organizations as well as data sharing hubs, and other exchange partners or intermediaries when utilizing the PMIX Architecture to exchange or map the exchange to another data sharing standard.

3.2 Foundation of the PMIX National Architecture

The PMIX Architecture is based on the National Information Exchange Model (NIEM). The National Information Exchange Model (NIEM) is a common vocabulary that enables efficient information exchange across diverse public and private organizations. NIEM connects communities of people who share a common need to exchange information in order to advance their mission. In addition to NIEM, PMIX also synchronizes its information exchange infrastructure with the American Society for Automation in Pharmacy (ASAP) whose reporting standard is widely used by Prescription Drug Monitoring programs. For more information on these programs, please see their websites: <https://www.niem.gov/> and <https://www.asapnet.org/>.

4 Standards Proposal

4.1 Background

As a part of its 2018 – 2019 organizational goals, the Executive Committee of the PMIX Standards Organization directed its Operations and Technical Architecture subcommittees to review and propose changes to the PMP Prescription Request Schema including but not limited to the following areas:

- Updating the elements to the latest version of NIEM
- Synchronizing where applicable with the latest version of ASAP

The sample below illustrates the proposed new schema. The actual xsd file is available upon request for review. Outlined below is a summary of the changes made to the schema. The latest approved versions of the schema are available on the PMIX website for comparison (<https://www.pdmpassist.org/PMIX/Standards>).

4.2 Proposed Schema Sample

4.2.1 RxCheck Sample

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2011 (x64) (http://www.altova.com)--> <pmix:PMPRequest
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://pmixpmp.org/niem/4.0/
../../schema/information/exchange/PMIX_NIEM_4.0_Request_Schema.xsd"
xmlns:pmix="http://pmixpmp.org/niem/4.0/"
xmlns:s="http://release.niem.gov/niem/structures/4.0/"
xmlns:nc="http://release.niem.gov/niem/niem-core/4.0/"
xmlns:j="http://release.niem.gov/niem/domains/jxdm/6.2/"
xmlns:pmp="http://pmixpmp.org/niem/4.0/extension">
  <pmp:RequestPrescriptionDateRange>
    <pmp:RequestPrescriptionDateRangeBegin>1967-08-13</pmp:RequestPrescriptionDateRangeBegin>
    <pmp:RequestPrescriptionDateRangeEnd>1967-08-13</pmp:RequestPrescriptionDateRangeEnd>
  </pmp:RequestPrescriptionDateRange>
  <pmp:RequestPatient>
    <nc:PersonBirthDate>
      <nc:Date>1967-08-13</nc:Date>
    </nc:PersonBirthDate>
    <nc:PersonName>
      <nc:PersonGivenName>String</nc:PersonGivenName>
      <nc:PersonMiddleName>String</nc:PersonMiddleName>
```

```

        <nc:PersonSurName>String</nc:PersonSurName>
        <nc:PersonNameSuffixText>String</nc:PersonNameSuffixText>
    </nc:PersonName>
    <j:PersonSexCode>U</j:PersonSexCode>
    <nc:PersonSSNIentification>
        <nc:IdentificationID>String</nc:IdentificationID>
        <nc:IdentificationJurisdiction>
            <nc:JurisdictionText>String</nc:JurisdictionText>
        </nc:IdentificationJurisdiction>
    </nc:PersonSSNIentification>
    <pmp:PersonPrimaryContactInformation>
        <nc:ContactTelephoneNumber>
            <nc:FullTelephoneNumber>
                <nc:TelephoneNumberFullID>String</nc:TelephoneNumberFullID>
            </nc:FullTelephoneNumber>
        </nc:ContactTelephoneNumber>
        <nc:ContactMailingAddress>
            <nc:LocationStreet>
                <nc:StreetFullText>String</nc:StreetFullText>
            </nc:LocationStreet>
            <nc:LocationCityName>String</nc:LocationCityName>
            <nc:LocationState>
                <nc:LocationStateUSPostalServiceCode>NV</nc:LocationStateUSPostalServiceCode>
            </nc:LocationState>
            <nc:LocationPostalCode>String</nc:LocationPostalCode>
            <nc:LocationPostalExtensionCode>String</nc:LocationPostalExtensionCode>
        </nc:ContactMailingAddress>
    </pmp:PersonPrimaryContactInformation>
    <pmp:PersonStateIssuedIdentifier>
        <nc:IdentificationID>String</nc:IdentificationID>
        <nc:IdentificationJurisdiction>
            <nc:JurisdictionText>String</nc:JurisdictionText>
        </nc:IdentificationJurisdiction>
    </pmp:PersonStateIssuedIdentifier>
    <pmp:SpeciesCode>01</pmp:SpeciesCode>
    <pmp:PatientLocationCode>01</pmp:PatientLocationCode>
    <pmp:PatientNameOfAnimalText>String</pmp:PatientNameOfAnimalText>
</pmp:RequestPatient>
</pmix:PMPRequest>

```

4.2.2 PMPi Sample

The illustration below is based on current request schema. Appriss will provide an xml schema rendering when complete.

```
<?xml version="1.0" encoding="UTF-8"?>
- <pmpr:SearchRequest xmlns:nc="http://niem.gov/niem/niem-core/2.0" xmlns:pmix="http://xml.ijsi.org/niem/2.0/" xmlns:pmp="http://xml.ijsi.org/niem/2.0/extension" xmlns:pmpr="http://pmpr.nabp.org/">
  <!-- The essential information that a PMP provides about itself. These are the ID that Interconnect knows the PMP by, the role of the user of the PMP system that made the request, and the ID by which the search is known in the request. -->
  - <pmpr:SearchingPmp>
    <pmpr:InterconnectPmpId>123456</pmpr:InterconnectPmpId>
    <pmpr:PmpUserRole>Pharmacist</pmpr:PmpUserRole>
    <pmpr:PmpSearchId>ABC-123-xyz-1@#</pmpr:PmpSearchId>
    <!-- optional -->
  - <pmpr:Requestor>
    <!-- optional v4.1 -->
    <pmpr:ProviderName>Dr. Smith</pmpr:ProviderName>
    <pmpr:DEANumber>AB1234567</pmpr:DEANumber>
    <pmpr:NPINumber>1234567890</pmpr:NPINumber>
  - <pmpr:LicenseNumber>
    <pmpr:Number>12346</pmpr:Number>
    <pmpr>Type>RPH</pmpr>Type>
    <pmpr:Jurisdiction>KY</pmpr:Jurisdiction>
  </pmpr:LicenseNumber>
  </pmpr:Requestor>
</pmpr:SearchingPmp>
<!-- The DisclosingPmps element is a list of one or more PMPs from which disclosure is desired. A DisclosingPMP element contains data that pertains to a single PMP from which disclosure is sought. At least one DisclosingPMP in the list is bounded by the number of PMPs active within PMP Interconnect. The InterconnectPmpId child element of DisclosingPmp indicates the PMP from which disclosure is desired. The RsaEncryptedAesKey child element of DisclosingPmp was used to encrypt the search parameters using the AES algorithm. Since each PMP has their own private/public RSA key pair the one time key used in the AES encryption must be RSA encrypted and base 64 encoded. However, this element ultimately relays the same one time password. The difference in content is an artifact of the fact that each PMP has its own RSA key pair which results in a different output. -->
- <pmpr:DisclosingPmps>
  - <pmpr:DisclosingPmp>
    <!-- Disclosing PMP #1 -->
    <pmpr:InterconnectPmpId>234567</pmpr:InterconnectPmpId>
    <pmpr:RsaEncryptedAesKey>JGWNtXBpaUuVfeg8tWiMETzgtPCj0pM5fCIgJsVnApLmIUzuAlUmHsbt3UAX y0sUkudySVUSWU5UMHQPnLUyNoaslrhNiYNI47rYGMQICdL1jBLRaHrplCLSSH YBvRENZn+yrCLK/N7ojsm14hd0jsOwDOYyBns2cJHw=</pmpr:RsaEncryptedAesKey>
  </pmpr:DisclosingPmp>
  - <pmpr:DisclosingPmp>
    <!-- Disclosing PMP #2 -->
    <pmpr:InterconnectPmpId>345678</pmpr:InterconnectPmpId>
    <pmpr:RsaEncryptedAesKey>TRivWarkIC018yIrv0v5AF+dLD5XN0PwOx05f0xMkaqar3MrJThpQWgQ9C5UVP9 zPX9kfbT1ei24TAR0zbt/6DwG9jI8mqyc52MK7BWfCXFLaKdoA09A+aIXgTXr p20v7Iwv3QI49+CvTPI/rG37gpORIRueTeKxEaVK8E=</pmpr:RsaEncryptedAesKey>
  </pmpr:DisclosingPmp>
  - <pmpr:DisclosingPmp>
    <!-- Disclosing PMP #3 -->
    <pmpr:InterconnectPmpId>456789</pmpr:InterconnectPmpId>
    <pmpr:RsaEncryptedAesKey>Y4PaV9A1DX/OeAhyXpzg0sUyG6KbZ0RjvnROdOUQNVuhmpy9WW2KCGEAXJ X0XBELda34toC61n8/Q1b47t1VPUnW5/o7D/AUTBIV3gg0kSqbqhmzUpzgzKEI 92yd9IYYjQIFAPYwtq138IDekIO5VskUp+AbKVhcxQ=</pmpr:RsaEncryptedAesKey>
  </pmpr:DisclosingPmp>
</pmpr:DisclosingPmps>
<!-- The SearchParameters element encapsulates the "data elements description" and the AES encrypted search parameter data. First, PMP Interconnect builds off of the PMIX projects NIEM IEPO. The actual search request that is tunneled across PMP Interconnect from a searching PMP to a disclosing PMP must validate against the PMIX_NIEM_2.0_Request_Schema.xml file. Searching PMPs are expected to validate the XML that they generate prior to sending to ensure that their requests are correct. Disclosing PMPs should also validate the XML document that they receive as an independent check. If the XML does not validate the disclosing PMP should return a DisclosureResponse of type PMP and provide what information they can as to the nature of the validation errors in the PlaintextData element. BEGIN SAMPLE XML <?xml version="1.0" encoding="UTF-8"?> <pmpr:PMPRequest xsi:schemaLocation="http://xml.ijsi.org/niem/2.0/ PMIX_NIEM_2.0_Request_Schema.xml" xmlns:nc="http://niem.gov/niem/niem-core/2.0" xmlns:pmix="http://niem.gov/niem/niem-core/2.0" xmlns:pmp="http://www.w3.org/2001/XMLSchema-instance" xmlns:pmix="http://xml.ijsi.org/niem/2.0/" xmlns:pmp="http://xml.ijsi.org/niem/2.0/extension" --> <pmpr:RequestPrescriptionDateRangeBegin>1967-08-13</pmpr:RequestPrescriptionDateRangeBegin> <pmpr:RequestPrescriptionDateRangeEnd>1967-08-13</pmpr:RequestPrescriptionDateRangeEnd> </pmpr:RequestPrescriptionDateRange> <pmpr:RequestPatient> <nc:PersonBirthDate> <nc:Date>1967-08-13</nc:Date> </nc:PersonBirthDate> <nc:PersonName> <nc:PersonGivenName>String </nc:PersonGivenName> </nc:PersonName> </pmpr:RequestPatient> </pmix:PMPRequest> END SAMPLE XML The DataElements element is a listing of the data elements found within this particular search request. Each data element found in the document are contained in individual DataElement fields. The values allowed here are constrained by the RequiredFieldTypeEnumeration. In this sample instance XML the DataElements seen below describe the sample XML seen above. The content of the AesEncryptedDataElement is the result of using AES to encrypt the document you see above and base 64 encoding the output. As discussed above, the one time password used during the AES encryption process is encrypted using RSA for each PMP from which disclosure is sought and wrapped in the RsaEncryptedAesKey elements seen above. -->
<pmpr:SearchParameters>
  - <pmpr:DataElements>
    <pmpr:DataElement>/pmix:PMPRequest</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestDateRange</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestDateRangeBegin</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestDateRangeEnd</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestPatient</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestPatient/nc:PersonName</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestPatient/nc:PersonName/nc:PersonGivenName</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestPatient/nc:PersonName/nc:PersonSurName</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestPatient/nc:PersonSSNIdentification</pmpr:DataElement>
    <pmpr:DataElement>/pmix:PMPRequest/pmp:RequestPatient/nc:PersonSSNIdentification/nc:IdentificationID</pmpr:DataElement>
    <pmpr:DataElement>
    <pmpr:AesEncryptedData> U2FsdGVkX19AXGkDqxmS6NPCK/g5UL0teNr27xeHcnZM3ESL2vYP4Mhszc2WRT KHhbyqiAMTzbRhZwAnRTJqfTuHhFz96tnKfGHGQm8JfW+9numVcKwK2GDvd0EuM EFLNij65reawhT1WvptTCkx40v/QqPvtt4Fh1W0mxxa7vTNB66FI0u94gZbQL +Vkh4SDE3F1mjt20r1XlIX0UFU5eYbATPawTBYF8En00jY3fSkNzuDd/lusF+9 Q03EqU1UB9JR9YH91vR1DToSMU4IAsRzA0JWUAWzC1Nxo017QmoPvK+AMBT MJDk9va2Zw/4idIqybKHbyV+RO+8wWJodeRyggGoIBvL3v57WU0RC9GDARpa0D nI/HSyZq0D61DnUDDFGHD+smh0ChpQ+PRLZc/RMjZp3C6IME5hVFM+gIn 8nbnk27YMH11aD3YfCAJde3J0gCvUes4/z9I2Y8JsmR518YBYWzL7Mq9XSE/ B8KUCWTLBqhyvV2bb16veXmN1Jc1WdBoqK+UxYHacIEIA+gavWwmlL6z/LfZf5TomZ9TbsB39bd30xvQ0ZBk3dR0x+fuwLz14BADM315u118T0EYUxID fhFK6TslCPuS8D7F0PImYBxzo8+ +CwVGRfXhIGDpxs2Y5RfK1U1Udufufum6 Z2w6aWCBChF03kL0v4ZLmjv6CAOUduCf7n3ebA2F8j+qg6R9g3EBH+SNP6HW u+1IOJAIngr8T2ErrunmwTDYpfb0yZUEKpWv1OKhtA4AoxQev6F4pNM1ea/Kg7I/RkATHZAAH+PEI5hdLnf/Q+UjdXXJC9QISM5mTJFawifXHX81y1XLq6v1zJ zFnMG4739Td7FLUasZRISEHJduOd2fR0IC3jw82sCuHTR2d8M/DMz9DA2Iq 82+txDZHkYCHNsiQZ5c6jnw8Gdyrg9s/96RdbXzWwy96QNZXYVNej/mI7FM wxXG1JO+66wStD09gW7s4ZISFR4moX9104Fcg9e5hdhQXcBialdFK5gtyrn07au zFnN1Z2CB+6EBEteXbY2xVjzK1Q10aG06/6yz2Mvnr6fct4tYvJkwmar4zTm YSoHk/+wvE/8XZzEo0PERRyoTHe/cza4B2P0Pj/Cu9J2XR1YIYU2eY7191cn iGK9W9K9p0rPubYF5YDEU7E3nU8tdksU4NY9JvhAPGK3qA6Vutgr9RmkrQ26ZXB w5KNCPlqSaZDKC+HnwrUAB8uXn1LBZg5TYJx+fhH69IVugpuUp0V5IX86bzWuWHS </pmpr:AesEncryptedData>
  </pmpr:DataElement>
</pmpr:SearchParameters>
pmpr:SearchRequest>

```

The new request xml would be embedded and encrypted in the same manner as it is today.

4.3 Summary of Changes

4.3.1 Summary to NIEM 4.0

The definition of any field prefaced by nc: comes from the field definition now supported in NIEM 4.0. In addition, the following fields were removed from the schemas:

- nc:PersonNamePrefixText
- nc:PersonFullName

5 Implementation

This standard will replace the existing Comprehensive Request schema. The proposed implementation timeline is:

- Available for use: 5/1/2022
- Adoption by all states: 11/1/2022