

Alert Handling Guideline for Medicines Verification System

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1. Introduction

The medicines verification system is based on the requirements of EU legislation (Falsified Medicines Directive (2011/62/EU) and the Commission Delegated Regulation (EU) 2016/161). The aim is to prevent the use of falsified medicines in the legal supply chain for medicinal products.

The medicines verification system applies to almost all prescription medicines. They are equipped with 2D codes that include the unique identifiers for the packs. When dispensing a serialized medicine, the information on the pack is compared to the data in the medicines verification system database. If the information is consistent, we can be assured this is not a falsification. In some cases however, the pack may cause an alert.

This document describes the processes for using the medicines verification system. The aim is that the activities related to medicines verification would be merged as far as possible with existing practices.

The processes and procedures for handling alerts caused by the medicines verification system are presented from the perspective of different user groups. The document can be used to further develop users' IT systems so that the user can quickly and easily see the content of the verification inquiry, the response from the FiMVS system, and can also distinguish whether it is an error message or an alert.

The purpose of this document is to describe the activities in the verification system and to present solutions to the problems. However, each user of the verification system will have to resolve the final process for their part.

This document has been drafted in co-operation with stakeholders in the pharmaceutical supply chain. The document will be updated as necessary.

2. Abbreviations

ABBREVIATION	EXPLANATION
EMVO	European Medicines Verification Organisation
EMVS	European Medicines Verification System
EU Hub	European Hub
Fimea	Finnish Medicines Agency
FiMVO	Finnish Medicines Verification Organisation
FiMVS	Finnish Medicines Verification System
GTIN	Global Trade Item Number
IMT	Inter Market Transaction
MAH	Marketing Authorisation Holder
NMVS	National Medicines Verification System
OBP	On-Boarding Partner
PC	Product Code
SN	Serial Number

3. Alerts caused by the Medicines Verification System

Depending on the malfunction / error situation, different levels of deviations can occur in the FiMVS system. The distribution of deviations in these different levels L1 to L5 (described in more detail below) is based on a general definition of the architecture of the EU medicines verification system. From a technical point of view, the FiMVS system always reverts the actual return / alert code in deviations, not the level.

- L1: A deviation that the system repairs itself. This deviation is not visible to the user in any way.
- L2: The user receives notice of the deviation.
- L3: The System Administrator (EMVO or FiMVO) receives notice of the deviation.
- L4: More than one system administrator receives notice of deviation.
- L5: In addition to the user and system administrators, the OBP and the local competent authority are also notified of the deviation. This may be a falsified pack. L5 deviations are alerts and alerts must be investigated before the pack is dispensed to the patient. All L5 alerts are described in more detail in the table below and following sections.

NOTE! An unknown product number (NMVS_NC_PC_01) no longer causes an alert but a level L3 deviation. In these situations, it is advisable to investigate why this pack is not in the medicines verification scope, but this can be done after dispensing. If in doubt as to whether the pack is in scope, check with the MAH.

From a technical point of view, the medicines verification system uses the same return code as before (NMVS_NC_PC_01).

All L5 level alerts are described in more detail in the table below:

Alert message	Explanation	Alert code (FiMVS)	Alert code (EU Hub)
Failed to find a batch for the given data	The batch ID used for the transaction does not exist in the system for this product number. The product code used for the transaction exists in the system.	NMVS_FE_LOT_03	#A2
Expiry date does not match the date held in the NMVS	The expiry date used for the transaction does not match the expiry date uploaded to the NMVS. The product code, expiry date and serial number can be found in the NMVS but the expiry date differs.	NMVS_FE_LOT_12	#A52
The batch ID does not match the serial number in the NMVS	The serial number used for the transaction was found for the product code, but it does not match with the batch ID uploaded to the NMVS.	NMVS_FE_LOT_13	#A68
Unknown serial number	The serial number used for the transaction does not exist in the system for this product code. Product code and batch ID exist in the system but the serial number is incorrect.	NMVS_NC_PC_02	#A3
Property is already set on pack	Pack is already in requested state. This generates an L5 alert, if pack details have not been uploaded to FiMVS and the system performs an IMT enquiry to the NMVS system of another EU country (e.g. products subject to a special permit).	NMVS_NC_PCK_19	#A7
Pack is already inactive	The pack has already been decommissioned.	NMVS_NC_PCK_22	#A24
Defined timeframe between setting this property and the undo was exceeded	Maximum delay (10 days) between decommissioning and undo was exceeded and undo can not be performed. This generates an L5 alert, if pack details have not been uploaded to FiMVS and the system performs an IMT enquiry to the NMVS system of another EU country (e.g. products subject to a special permit).	NMVS_NC_PCK_20	#A4
Undo can only be executed by the same user who previously set the attribute	Undo can only be executed at the same location (i.e. the same end user) where the original transaction occurred. This generates an L5 alert, if pack details have not been uploaded to FiMVS and the system performs an IMT enquiry to the NMVS system of another EU country (e.g. products subject to a special permit).	NMVS_NC_PCK_21	#A5
Actual pack status doesn't match the undo transaction (set and undo status must be equivalent).	Undo transaction does not match pack status (e.g. <i>Undo Dispense</i> attempted for a pack in the status <i>Sample</i> . <i>Undo Sample</i> should be used).	NMVS_NC_PCK_06	#A24

Alert message	Explanation	Alert code (FiMVS)	Alert code (EU Hub)
Status change could not be performed	Undo transaction does not match pack status (e.g. <i>Undo Dispense</i> attempted for a pack in the status <i>Sample</i>). This generates an L5 alert, if pack details have not been uploaded to FiMVS and the system performs an IMT enquiry to the NMVS system of another EU country (e.g. products subject to a special permit).	NMVS_NC_PCK_27	#A24

4. Processes for handling and investigating alerts

All batches released after February 9, 2019 must be labeled in accordance with the requirements of Delegated Regulation (EU) 2016/161 and any system alerts related to them must be considered suspected falsified medicinal products and resolved in accordance with regulatory guidelines and the users' own approved practices.

The Finnish Medicines Agency Fimea has published information on the safety features of medicines on its [website](#).

The following sections describe alerts, their possible root causes, and procedures for handling alerts. The measures are grouped according to the different actors in the distribution chain. Note that the root cause of the alert is not necessarily connected to the actor that triggers the alert (for example, the root cause of an alert in the pharmacy might be the fact that the batch data has not been uploaded to the system by the pharmaceutical company).

Alert processing and investigations proceed according to the three-tiered EMVO classification:

- possible suspected falsification: an alert to be investigated with the MAH and / or FiMVO
- suspected falsification: an alert for which any technical or process-related reason has been ruled out indicating a suspected falsification or product defect, which is to be handled and reported by the MAH in accordance with the Fimea regulation on reporting of product defects and suspected falsifications
- confirmed falsification, whereby the MAH acts in accordance with a class 1 product defect process.

This guideline is based on the knowledge and experience gathered by FiMVO as well as similar experiences and insights gained through European cooperation.

4.1 Failed to find a batch for the given data (NMVS_FE_LOT_03)

Possible root causes of the alert:

- Batch data has not been uploaded to the EMVS system.
- The information used for the transaction (batch ID AND serial number) is different to the data printed on the pack.
 - Scanner reading error or erroneously changed scanned data
 - Data was incorrectly entered manually

End User	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the transaction data in the pharmacy system (if possible). 2. Compare the data from the transaction (especially batch ID and serial number) to the human readable data on the pack. If the data (both batch ID and serial number) are the same as the human readable data on the pack, the most probable cause is that the batch details have not been uploaded to EMVS. In this case, move directly to point 5. 3. If the transaction data data (batch ID and serial number) does not match the human readable data, scan the 2D code again. If this is successful and does not generate an alert, the pack can be dispensed. 4. If this still fails, try using another scanner or enter the data manually. If the 2D code scanning or manual entry is successful and no alert is generated, the pack can be dispensed. NOTE. If the 2D code cannot be scanned and the human readable data is also illegible, the pack must not be dispensed. The pack must be reported to the MAH as a product defect. 5. If the pack cannot be dispensed, it should be put aside and investigations should continue with the MAH. <u>Alerts should be notified to the MAH through the wholesaler's product defect system or directly to the MAH via email or phone.</u> Notifications must include the pack's human readable data, i.e. product code, serial number, batch ID and expiry date. It is helpful to send a photograph of the pack as an attachment. <p>If needed, FiMVO will respond to inquiries as to whether the batch data has been uploaded to the FiMVS system: nmvs@fimvo.fi.</p>

End User	Alert handling procedures
MAH / OBP	<p data-bbox="488 331 2141 363">Check the transaction data in the alert message: Is this the correct batch number for this product?</p> <p data-bbox="488 432 2141 592">a) If no: it could be a scanning error by the end user or incorrect manual data entry by the end user. If you have received a photograph of the pack, ensure that the 2D code data on the pack is correct. Also, make sure that the 2D code data is identical to the data uploaded to EMVS. If the end user has not made contact, FiMVO (nmvs@fimvo.fi) can check the audit trail in the FiMVS system. Often the alerting pack is successfully verified after the alert due to a data entry error. If needed FiMVO can also contact the end user.</p> <p data-bbox="533 628 2141 852">NOTE! If incorrect batch data has been printed on the pack, this is a product defect or a possible suspected falsification. The responsible MAH will request the wholesaler, if necessary, to place a sales ban on the batch during investigation and work with the OBP to solve the investigation. <u>The MAH should pay particular attention to informing pharmacies, wholesalers and Fimea</u> in order to keep them up to date with the situation and to ensure uninterrupted treatment and patient safety. If the investigations confirm that this is a falsified medicine, the product defect process should be followed (Class 1 product defect). The MAH is responsible for the design and implementation of this process. Fimea oversees that the measures are adequate and appropriate. (https://www.fimea.fi/valvonta/laaketurvatoiminta/tuotevirheet).</p> <p data-bbox="488 888 2141 1048">b) If yes: it is likely that the data for this batch has not been uploaded to the EMVS. The MAH should, if appropriate, ask the distributor to place a sales ban on the batch for the period of the investigation. If the reason for the alert is that the OBP has not uploaded the batch data to FiMVS or if the data uploaded was unsuccessful, the data should be uploaded without delay, and the MAH should inform all actors in the supply chain and FiMVO of the situation, and when the data has been uploaded successfully.</p> <p data-bbox="488 1091 2141 1155">If needed, FiMVO will respond to inquiries as to whether the batch data has been uploaded to the FiMVS system: (nmvs@fimvo.fi).</p>

4.2 Expiry date does not match the date held in the NMVS (NMVS_FE_LOT_12)

Possible root causes of the alert:

- The information printed on the pack differs to the data uploaded to EMVS.
- The transaction data differs from the information on the pack.
 - The manually entered expiry date is in the wrong format (DDMMYY) and should be in the correct format YYMMDD.
 - The expiry date in the 2D code is an exact date which is not the last day of the month, and on the human readable data on the pack the date is YYMM → if the end user can't scan the 2D code and manually enters the last day of the month (i.e. different to the data uploaded), this will generate an alert.
 - A typing error made whilst manually entering.
 - The end users IT system changes the expiry date, which is coded in the format YYMM00 (meaning the last day of the month) to YYMMDD → this only generates an alert if the data has not been uploaded into FiMVS and the system performs an IMT enquiry to other EU counties NMVS systems (e.g. special permit products).

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the data from the transaction in the pharmacy system (if possible). 2. Compare the data from the transaction (especially expiry date) to the human readable data on the pack. If the data are the same, the most probable cause is that the expiry date data in the system differs from the one printed on the pack. In this case, move directly to point 5. 3. If the transaction data (expiry date) does not match the data on the pack, scan the 2D code again. If this is successful and does not generate an alert, the pack can be dispensed. 4. If this still fails, enter the information manually in the correct format, YYMMDD. If the manual entry is successful and no alert is generated, the pack can be dispensed. NOTE. If the 2D code cannot be scanned and the human readable data is also illegible, the pack must not be dispensed. The pack must be reported to the MAH as a product defect. 5. If the transaction is not successful, the pack should be put aside and investigations should continue with the MAH. <u>Alerts should be notified to the MAH through the wholesaler's product defect system or directly to the MAH via email or phone.</u> Notifications must include the pack's human readable data, i.e. product code, serial number, batch ID and expiry date. It is helpful to send a photograph of the pack as an attachment. <p>If needed, FiMVO will respond to inquiries as to what expiry date had been uploaded to the FiMVS system: nmvs@fimvo.fi.</p>

End user	Alert handling procedures
MAH / OBP	<ol style="list-style-type: none"> 1. Check the alert message: Is this the same expiry date as in the system? 2. If the data is different, it could be that the expiry date printed on the pack differs to the expiry date uploaded to the system, or there is an error with the scanner or an error in manual data entry. 3. If the end user is in contact and has provided a photograph of the pack, check that the 2D code on the pack has the correct information. Check that the 2D code data is the same as data uploaded to EMVS. 4. If the data on the pack differs to the data uploaded, the MAH should, if necessary, request the distributor to place a sales ban on the batch during an investigation and work with the OBP to solve the investigation. <u>The MAH should pay particular attention to informing pharmacies, wholesalers and Fimea</u> in order to keep them up to date with the situation and to ensure uninterrupted treatment and patient safety. 5. If the investigation confirms that this is a genuine falsified medicine, the product default process should be followed (Class 1 product defect). The MAH is responsible for the design and implementation of this process. Fimea oversees that the measures are adequate and appropriate. (https://www.fimea.fi/valvonta/laaketurvatoiminta/tuotevirheet). 6. If the end user is not in contact with the MAH, FiMVO (nmvs@fimvo.fi) can help check the pack's audit trail. Often after an alert the end user is able to successfully verify the pack. FiMVO can also contact the end user in question if necessary.

4.3 The batch ID does not match the serial number in the NMVS (NMVS_FE_LOT_13)

Possible root causes of the alert:

- The information printed on the pack differs from the data uploaded to EMVS.
- The data of the transaction differs from the information printed on the pack.
 - Scanner configuration error (batch ID contains capital and small letters which interchange or special characters change).
 - Scanning errors or erroneous data change after the barcode has been scanned (batch ID is missing one or more characters, or extra characters have appeared after the batch ID, often the EAN code or the beginning of it).
 - Manual data entry error.

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the data of the transaction in the pharmacy system (if possible). 2. Compare the data of the transaction (especially the batch data) to the human readable data on the pack. If the data matches the most probable cause is that the batch data is different from what has been uploaded to the EMVS. In this case, move directly to point 6. 3. If the transaction data (batch data) does not match the data on the pack, scan the 2D code again. If this is successful and does not generate an alert, the pack can be dispensed. 4. If this still fails, try using another scanner or enter the information manually. If the 2D code scanning or manual entry is successful and no alert is generated, the pack can be dispensed. NOTE. If the 2D code cannot be scanned and the human readable data is also illegible, the pack must not be dispensed. The pack must be reported to the MAH as a product defect. 5. If scanning is successful with one scanner but not another, the problem could stem from the scanner's configuration. Check that the scanner has been correctly configured. Contact your IT supplier to solve this. The scanner should read and transact data without changing it in any way. 6. If the pack can not be dispensed, it should be put aside and investigations should continue with the MAH. <u>Alerts should be notified to the MAH through the wholesaler's product defect system or directly to the MAH via email or phone.</u> Notifications must include the pack's human readable data, i.e. product code, serial number, batch ID and expiry date. It is helpful to send a photograph of the pack as an attachment.

End user	Alert handling procedures
MAH / OBP	<ol style="list-style-type: none"> 1. Check the batch ID and serial number in the alert message, is the serial number linked to the batch and does the data match the one uploaded on EMVS? 2. If the data differs, it could be that the batch data printed on the pack differs to the batch data uploaded to the system, or there is an error with the scanner or an error in manual data entry. 3. If the end user is in contact and has provided a photograph of the pack, check that the 2D code on the pack has the correct information. Check that the 2D code data is the same as data uploaded to EMVS. 4. If the data on the pack differs to the data uploaded to FiMVS, the MAH should, if necessary, request the distributor to place a sales ban on the batch during an investigation and work with the OBP to solve the situation. <u>The MAH should pay particular attention to informing pharmacies, wholesalers and Fimea</u> in order to keep them up to date of the situation and to ensure uninterrupted treatment and patient safety. 5. If the investigations confirm that this is a genuine falsified medicine, the product defect process should be followed (Class 1 product defect). The MAH is responsible for the design and implementation of the process. Fimea oversees that the measures are adequate and appropriate. (https://www.fimea.fi/valvonta/laaketurvatoiminta/tuotevirheet). 6. If the end user is not in contact with the MAH, FiMVO (nmvs@fimvo.fi) can help check the pack's audit trail. Often after an alert the end user is able to successfully verify the pack. FiMVO can also contact the end user in question if necessary.

4.4 Unknown serial number (NMVS_NC_PC_02)

Possible root causes of the alert:

- Not all serial numbers in the batch have been uploaded to EMVS.
- The data in the transaction differs from the data printed on the pack.
 - Scanner configuration error (serial number contains capital and small letters which interchange).
 - Scanning errors or erroneous data change after the barcode has been scanned (serial number is missing one or more characters, or extra characters have appeared after the batch ID, often the beginning of the EAN code).
 - Manual data entry error.

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the data of the transaction in the pharmacy system (if possible). 2. Compare the data of the transaction (especially the serial number) to the human readable data on the pack. If the data is the same as the human readable data on the pack, the most probable cause is that not all serial numbers in the batch have been uploaded to EMVS. In this case, move directly to point 6. 3. If the data of the transaction (serial number) does not match the human readable data, scan the 2D code again. If this is successful and does not generate an alert, the pack can be dispensed. 4. If this still fails, try using another scanner or enter the information manually. If the 2D code scanning or manual entry is successful and no alert is generated, the pack can be dispensed. NOTE. If the 2D code cannot be scanned and the human readable data is also illegible, the pack must not be dispensed. The pack must be reported to the MAH as a product defect. 5. If scanning is successful with one scanner but not another, the problem could stem from the scanner's configuration. Check that the scanner has been correctly configured. Contact your IT supplier to solve this. The scanner should read and transact data without changing it in any way. 6. If the pack can not be dispensed, it should be put aside and investigations should continue with the MAH. <u>Alerts should be notified to the MAH through the wholesaler's product default system or directly to the MAH via email or phone.</u> The notification must include the pack's human readable data, i.e. product code, serial number, batch ID and expiry date. It is helpful to send a photograph of the pack as an attachment. <p>If needed, FiMVO will respond to inquiries as to what expiry date had been uploaded to the FiMVS system: nmvs@fimvo.fi.</p>

End user	Alert handling procedures
MAH / OBP	<p data-bbox="488 296 1608 323">Check the serial number in the alert message, does it match the data uploaded on EMVS?</p> <p data-bbox="488 395 2130 587">c) If no: it could be a scanning error by the end user or incorrect manual data entry by the end user, or a <u>genuine falsification</u>. If you have received a photograph of the pack from the end user, ensure that the data in the 2D code on the pack is correct. Also, make sure that the 2D code data is identical to the data uploaded to EMVS. If the end user has not made contact, FiMVO (nmys@fimvo.fi) can check the audit trail of the pack in the FiMVS system if the MAH/OBP can find in the batch data the serial number that differs only to a small extent from the erroneous serial number. Often the alerting pack is successfully verified after the alert due to a data entry error. If needed FiMVO can contact the user.</p> <p data-bbox="533 624 2130 783">NOTE! If the investigations confirm that this is a genuine falsified medicine, the product defect process should be followed (Class 1 product defect). <u>The MAH should pay particular attention to informing pharmacies, wholesalers and Fimea</u> in order to keep them up to date of the situation and to ensure uninterrupted treatment and patient safety. The MAH is responsible for the design and implementation this process. Fimea oversees that the measures are adequate and appropriate. (https://www.fimea.fi/valvonta/laaketurvatoiminta/tuotevirheet).</p> <p data-bbox="488 850 2123 1010">d) If yes: it is likely that the all serial numbers in this batch have not been uploaded to the EMVS. The MAH should, if appropriate, ask the distributor to place a sales ban on the batch for the period of the investigation. If the reason for the alert is that the OBP has not uploaded the serial numbers to FiMVS or if the data uploaded was unsuccessful, the data should be uploaded without delay, and the MAH should inform all actors in the supply chain and FiMVO of the situation, and when the data has been uploaded successfully.</p> <p data-bbox="488 1050 1906 1114">If needed, FiMVO will respond to inquiries as to whether the batch data has been uploaded to the FiMVS system: (nmys@fimvo.fi).</p>

4.5 Property is already set on pack (NMVS_NC_PCK_19)

Possible root causes of the alert:

- The same end user has already decommissioned the pack.
- Another end user has already decommissioned the pack.

NOTE. This only generates an alert if the pack data is not found in FiMVS and an IMT is performed (e.g. a special license product brought to Finland from another EU country) and FiMVS performs a transaction to another EU country's medicine verification system, which generates the alert.

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the pack status in FiMVS (Verify). 2. Undo the previous action on the pack (e.g. if the pack has been Dispensed, perform Undo dispense). 3. If the undo is successful, the original transaction was done by the same end user less than 10 days ago, which suggests that the original transaction was cancelled but the end user forgot to return the pack to the system. The pack state is now active and the pack can be dispensed from the system. The end user must investigate and record the error (e.g. a shared pack which has been opened earlier and decommissioned, or a pack which was not returned to the system after not being dispensed) and take preventive action not to repeat the error. 4. If undo is not possible, and the system alerts, <i>Defined timeframe between setting this property and the undo was exceeded (NMVS_NC_PCK_20)</i> or <i>Undo can only be executed by the same user who previously set the attribute (NMVS_NC_PCK_21)</i> the original transaction was performed over 10 days ago or by a different end user. In this case <u>the pack can not be dispensed until the reason behind the alert is investigated</u>. The pack should be set aside and clearly marked that it can not be dispensed. 5. <u>Alerts should be notified to the MAH through the wholesaler's product defect system or directly to the MAH via email or phone</u>. Notifications must include the pack's human readable data, i.e. product code, serial number, batch ID and expiry date. It is helpful to send a photograph of the pack as an attachment. <p>NOTE! Since in this case the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail. The end user should be in contact with the MAH so they can enquire after the audit trail in the EU country the data is in.</p>
MAH / OBP	In this case as the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail. The MAH / OBP should investigate the audit trail with the NMVO from the country the data alerted in.

4.6 Pack is already inactive (NMVS_NC_PCK_22)

Possible root causes of the alert:

- The same end user has already decommissioned the pack from the system. (NOTE. before the alert is generated the end user will receive the error message *NMVS_NC_PCK_23 double scan three times*).
- Another end user has already decommissioned the pack from the system.

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the pack's state in FiMVS (Verify). 2. Undo the previous action on the pack (e.g. if the pack has been <i>Dispensed</i>, perform <i>Undo dispense</i>). 3. If the undo is successful, the original transaction was done by the same end user under 10 days ago, which suggests that the original transaction was cancelled but the end user forgot to return the pack to the system. The pack state is now active and the pack can be dispensed from the system. The end user must investigate and record the error (e.g. a shared pack which has been opened earlier and decommissioned, or a pack which was not returned to the system after not being dispensed) and take preventive action not to repeat the error. 4. If undo is not possible, and the system alerts, <i>Defined timeframe between setting this property and the undo was exceeded (NMVS_NC_PCK_20)</i> or <i>Undo can only be executed by the same user who previously set the attribute (NMVS_NC_PCK_21)</i> the original transaction was performed over 10 days ago or by a different end user. In this case <u>the pack can not be dispensed until the reason behind the alert is investigated</u>. The pack should be set aside and clearly marked that it can not be dispensed. 5. Contact FiMVO for the audit trail of the pack (nmvs@fimvo.fi) 6. <u>If the audit trail implies a product defect or falsification, this must be notified to the MAH either through the wholesaler's product defect system or directly to the MAH via email or phone</u>. Notifications must include the pack's human readable data, i.e. product code, serial number, batch ID and expiry date. It is helpful to send a photograph of the pack as an attachment.
MAH / OBP	If the pharmacy / wholesaler contacts the MAH/OBP, FiMVO can be asked to provide the audit trail. (nmvs@fimvo.fi).

4.7 Defined timeframe between setting this property and the undo was exceeded (NMVS_NC_PCK_20)

Possible root causes of the alert:

- The pack was decommissioned over 10 days ago so the action can not be undone.

NOTE. This only generates an L5 alert if the pack data is not found in FiMVS and an IMT is performed (e.g. a special license products brought to Finland from another EU country). and FiMVS performs a transaction to another EU country's medicine verification system, which generates the alert.

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	If the end user can not see when and by whom the original transaction took place, they should be in contact with the MAH who can check the audit trail in the national verification system in which this. NOTE! Since in this case the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail.
MAH / OBP	In this case as the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail. The MAH / OBP should investigate the audit trail with the NMVO from the country the data alerted in.

4.8 Undo can only be executed by the same user who previously set the attribute (NMVS_NC_PCK_21)

Possible root causes of this alert:

- Undo can only be performed by the same user who previously performed the transaction (e.g. the same pharmacy).

NOTE. This only generates an alert if the pack data is not found in FiMVS and an IMT is performed (e.g. a special license product brought to Finland from another EU country).

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<p>If the end user can not see when and by whom the original transaction took place, they should be in contact with the MAH who can see when the transaction took place in.</p> <p>NOTE! Since in this case the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail.</p>
MAH / OBP	<p>In this case as the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail. The MAH / OBP should investigate in the country the data alerted in.</p>

4.9 The pack state does not match the undo transaction (NMVS_NC_PCK_06)

Possible root causes of this alert:

- The undo transaction does not correspond with the pack's active state (e.g. *Undo dispense* is performed on a pack which has the active status *Sample*. *Undo Sample* should be used in this case)

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the pack's state in FiMVS (Verify). 2. Undo the previous transaction on the pack (e.g. if the pack has been dispensed, perform undo dispense). 3. The end user should investigate why the original incorrect undo transaction was performed and work to take corrective action so as not to repeat the mistake.. <p>If needed, FiMVO can provide answers regarding the audit trail (nmvs@fimvo.fi).</p>
MAH / OBP	If the end user contacts you, FiMVO can help you by checking the audit trail (nmvs@fimvo.fi).

4.10 Status change could not be performed (NMVS_NC_PCK_27)

Possible root causes of this alert:

- The undo transaction does not correspond with the pack's active state (e.g. *Undo dispense* is performed on a pack which has active status *Sample*. *Undo Sample* should be used in this case)
- . This only generates an alert if the pack data is not found in FiMVS and an IMT is performed (e.g. a special license product is brought to Finland from another EU country).

End user	Alert handling procedures
Pharmacy / Hospital pharmacy / Dispensary / Wholesaler	<ol style="list-style-type: none"> 1. Check the pack's state in FiMVS (Verify). 2. Undo the previous action on the pack (e.g. if the pack has been dispensed, perform Undo Dispense). 3. The end user should investigate why the original incorrect undo transaction was performed and work to take corrective action so as not to repeat the mistake.. <p>NOTE! Since in this case the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail. The end user should be in contact with the MAH so they can enquire after the audit trail in the EU country the data is in.</p>
MAH / OBP	In this case as the pack data was not uploaded to FiMVS, FiMVO is incapable of following the audit trail. The MAH / OBP should investigate the audit trail with the NMVO from the country the data alerted in.

5. Contact details

Alert, product and batch data download and any system-related support and clarification requests should be made via email: nmvs@fimvo.fi. We kindly ask primarily for contact via email. Our hotline should be used only in urgent matters: 09 6150 4949.

Support and clarification requests must include the following unique identifiers associated with the product and / or pack to which the request for clarification applies:

1. Product Code (PC / GTIN)
2. Batch number (LOT / Batch)
3. Serial number (SN)
4. Expiry date (EXP)

NOTE. The Nordic product number (Vnr) is not maintained in the medicines verification system.

6. Legislation

Falsified Medicines Directive (2011/62/EU)

https://ec.europa.eu/health/sites/health/files/files/eudralex/vol-1/dir_2011_62/dir_2011_62_en.pdf (EN)

https://ec.europa.eu/health/sites/health/files/files/eudralex/vol-1/dir_2011_62/dir_2011_62_fi.pdf (FI)

Commission Delegated Regulation (EU) 2016/161

https://ec.europa.eu/health/sites/health/files/files/eudralex/vol-1/reg_2016_161/reg_2016_161_en.pdf (EN)

https://ec.europa.eu/health/sites/health/files/files/eudralex/vol-1/reg_2016_161/reg_2016_161_fi.pdf (FI)

Commission Questions & Answers - document

https://ec.europa.eu/health/sites/health/files/files/falsified_medicines/qa_safetyfeature_en.pdf