

Test of EDI Prescriptions

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Abstract. Test of EDI-prescriptions has been introduced in Denmark as a local test procedure carried out by the vendors. The test procedure is supported by a software programme called the EDI-tutor. The EDI-tutor test is followed by a pilot test. Transcription from the EDI-tutor and tables from the pilot test are sent to the EDI-secretariat for certification. The results have been a lift in the technical quality of the communication systems and a feed-back to the EDI secretariat about several semantic shortcomings.

Drugs are safety critical. This means, that any mistake of the prescription or adverse reactions of the drugs can be fatal for the patient. In the light of this most countries have a set of rules for clinical trials of new drugs and certification procedures for manufacture and distribution of drugs. As a natural development of these rules we have introduced a test procedure for EDI communication of prescriptions in this country.

1. Method

The test procedure is based on a proposal from a committee appointed by the Association of Danish Pharmacies and the Medical Association.

The introduction of the test procedure was placed in the EDI-secretariat in The National Board of Health. The first approach was a central laboratory test controlled by an independent trustee. This approach was refused by the system suppliers, because they found it too expensive and rigid. Instead the parties agreed upon a local test procedure without any participation of an independent trustee. This solution is very untraditional. The prerequisite for this solution is a test tool called the EDI-Tutor, which is developed by the two VANS suppliers in the health service, danNet and Kommunedata. The EDI-Tutor was ready on May 1, 1995 and was from the beginning recognized as the test tool of the future.

The EDI-Tutor is a test tool for the system suppliers, who can test the EDI-function of their own system. The system supplier tests the system against a virtual test partner, for instance a practitioner system against a virtual pharmacy system and conversely, a pharmacy system against a virtual practitioner system, see the figure. In order to obtain a realistic test it is important, that the interface between EDI functions and the VANS supplier and between the EDI functions and the EDI-Tutor is identical.

The test procedure consists of three different parts:

A message test controls, whether the dispatched prescription is similar to the received prescription.

A functionality test controls among other things that a receipt is dispatched for every received prescription, and that a prescription written by the secretary must

not be dispatched until it has been confirmed by the general practitioner.

A failure handling test controls the correct handling of failures, for instance failure of EDIFACT, address, signs and interruption of communication etc.

After every step of the test procedure a transcript from the logfile is made.

The EDI-Tutor test is followed by a pilot test, which is carried out in real life with real messages. During one week the general practitioner sends both EDI-prescriptions and traditional written prescriptions on paper, which are compared after the communication. The general practitioner and the pharmacist fill in tables with all failures and shortcomings.

Especially in a decentralized test without an independent trustee, the National Board of Health finds it important that the user shares the responsibility for the test procedure. For that reason the pilot test is a very important part of the testprocedure.

After the test procedure transcripts from the EDI-Tutor test and tables from the pilot test are sent to the EDI-secretariats.

2. Results

A local test procedure has one shortcoming, it is impossible for the central authorities and other outsiders to follow in detail what is going on during the test. The EDI-Tutor test is carried out by the system supplier alone, and he is supposed to correct currently all shortcomings, which are detected by the EDI-Tutor. The transcript from the EDI-Tutor test is not supposed to be sent to the EDI-secretariat, until it shows correct functioning.

Similarly, neither should the result of the pilot test be sent to the EDI-secretariat.

Nevertheless, we got a lot of information about essential problems and some information about minor problems, because the test procedure started a dialogue between the system suppliers and the EDI-secretariat, and later on during the pilot test between the pharmacists, the general practitioners and the EDI-secretariat.

During the EDI-Tutor test the dialogue revealed the following problems:

The system suppliers could tell the EDI-secretariat about failures in the EDI-Tutor. The test procedure also became a beta-test of the EDI-Tutor, which delayed and complicated the test procedure.

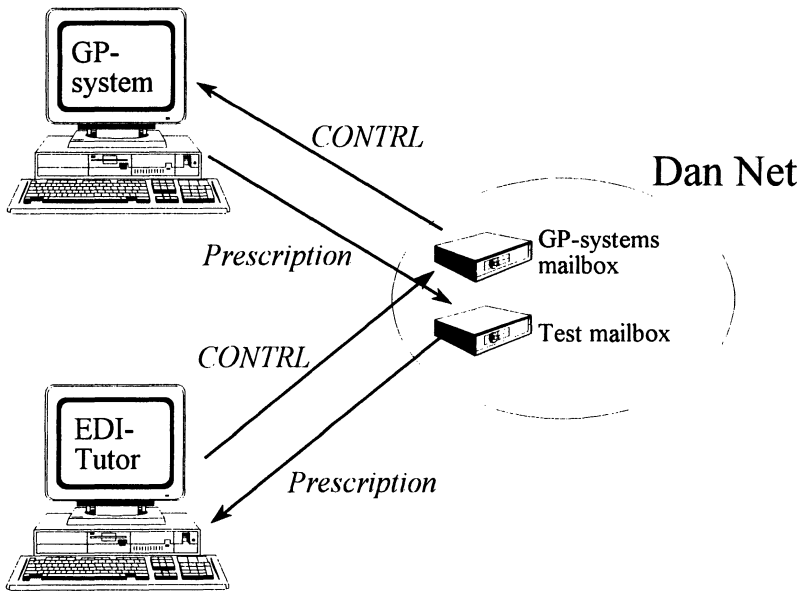
The system suppliers could tell the EDI-secretariat, that the message format and the implementation guides had shortcomings.

The EDI-secretariat could inform the system suppliers about legal regulations of prescriptions, which is relevant for all kind of prescriptions including EDI-prescriptions. Especially the rules for prescription of narcotics caused some troubles.

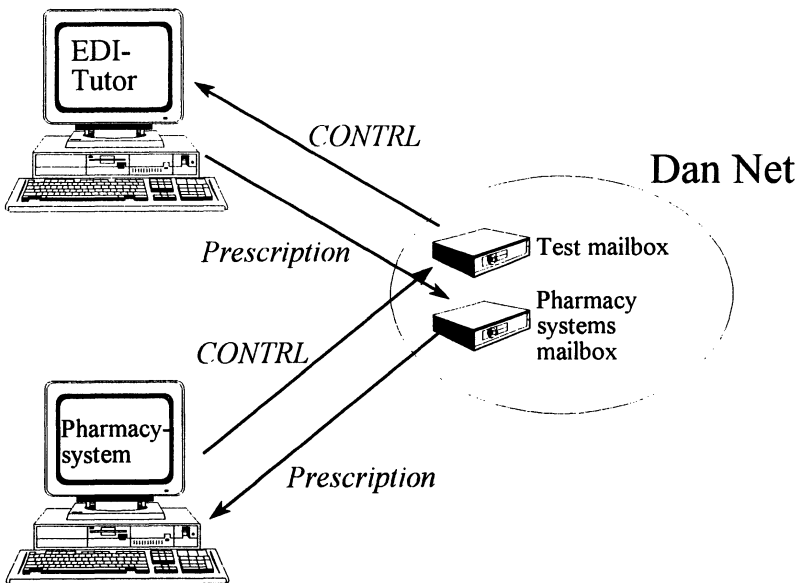
Furthermore, the EDI-secretariat had to give further information about the testprocedure, because some system suppliers had not read the guide properly.

During the pilot test the dialogue revealed mainly semantic problems - that is problems with the coding systems and abbreviations - to an extent that surprised the EDI-secretariat. It is one of the most important results of the testprocedure.

The EDI-Tutor simulates a Pharmacy system for the GP-system



The EDI-Tutor simulates a GP-system for the Pharmacy-system



Most of the problems which turned up during the test procedure, were problems for which the EDI-secretariat has the responsibility such as message format, guides and semantic problems.

Besides this the EDI-secretariat have reason to believe, that the test procedure implied a lot of technical corrections. We do not know exactly how many, but the system suppliers released many new versions during the test period.

For the EDI-secretariat the implication of the test procedure has been, that the parties involved in the EDI-communication of prescriptions have started a close cooperation about introduction of the European message standard for prescriptions in stead of the former Danish message format. Furthermore we are preparing a standard for dosing in prescriptions and streamlining of the updating procedure for the coding systems.

3. Certification

It is still discussed whether the test procedure should end up with a certification of results by the EDI-secretariat. As a local procedure it can work without certification, but the experience from the test procedure is in favour of certification.

By requiring certification we got an intense dialogue with the system suppliers. Maybe we would have got this dialogue without the requirement of certification, but it would have been a more incomplete dialogue and it would have taken much longer time. Meanwhile, it would be a real risk, that the system suppliers would give up the EDI-Tutor because of the shortcomings. In any case, the EDI- secretariat did not receive any report from two suppliers about serious defects in the EDI-Tutor, until we sent the very last reminder just before the end of the test period. Another supplier did not start the test procedure until the pharmacies refused the prescription from this system after the other suppliers had got their certification.

The test procedure has meant a remarkable lift in the quality of EDI-prescriptions. According to an enquiry among the pharmacists, the quality of EDI-prescriptions has constantly been better than the quality of other forms of prescriptions. The implication of the EDI-Tutor test is, that the discrepancy of quality between the EDI-prescription and other forms of prescriptions has increased.

The test procedure with the EDI-Tutor test, pilot test and certification of the results has proved its value, which is recognized by all users, system suppliers and authorities.

References:

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