SACS MDS Batch Processing Guidelines

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Background

In this implementation of the SACS MDS, HL7 Batch is being used to transmit files. This is due to the use of the Health Collect Portal and asynchronous message processing, combined with the Department's need to analyze data monthly.

In a true realtime HL7 messaging system, messages would be sent as they happened, processed and the result returned to the calling application. If there is a problem with the message, the sending system is notified through the use of an acknowledgement message.

With batch processing, all messages are 'queued up' into a file and transmitted simultaneously. As a consequence, one or more of the messages in the file may fail. This is of major inconvenience when dealing with event-based messages; each message often relies on the successful transmission of a previous message in order to be accepted. For example, if a Register Client (A04) message is sent and fails, a subsequent Case open (PCB) message will fail if it refers to the patient in the A04 message – the A04 was never accepted, and the patient does not exist in the system.

So it is important to understand the scenarios where business rules may affect the way the batch is processed.

System standards

The SACS system uses HL7 batches (BHS/BTS) to create transaction sets of records. By default, if any message in a batch is fatally rejected, it is assumed that the integrity of the batch is compromised, and none of the records in that batch are accepted. Given that a file may contain many batches, it is likely that one batch may fail while another may be accepted. Note that each message will always be processed against the business rules even if preceding messages failed; only the data will not be committed to the database in this case.

Messages and batches in files are processed sequentially. The file should reflect the natural order from which events flowed from the system.

Referential integrity is enforced without exception in the SACS MDS. Identifier fields are used on most messages, and dictate the relationship between records.

Suggested practice

If the sending system allows, it is often good practice to decrease the amount of messages in each batch to ensure that the transaction size is small. Logically grouping messages is the best way to achieve this; each batch could contain messages relating to only one patient – if a message fails, it will only affect that patient and related messages. Another common batch grouping is by date,

although batch sizes can become larger. Patient level batches commonly see between 1 and 3 messages per batch, and are more manageable for the SACS MDS system.

Processing Modes

By default, the SACS system will fail a batch if any messages trigger business rule edits. This is known as Strict Mode. Certain non-integrity business rules can be downgraded to warnings using Loose Mode. This mode will ignore edits such as mandatory fields, code domain edits and other business logic checks in order to ensure the message is accepted and subsequent messages can refer to record. Rejection messages are still fed back in the same fashion, and must be rectified, but there is less chance of triggering referential integrity errors in Loose Mode.

Loose Mode can be used by included the following directive in the FHS.10 segment of the file header: ProcessingMode=[Strict/Loose];

If omitted, the file will be processed strictly.

Testing/Debugging options

Often while testing HL7 submissions, certain business rules can be onerous when doing many submissions - rules that enforce uniqueness of batch and message control ids for example. These rules can be turned off by included the following directive in the FHS.10 segment of the file header: PurgeAfterLoad=True;

This option is only available in the test system and will be ignored by the live system. File names must still be unique to each submission.

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