Efficient Batch Record Review for Cell and Gene Therapies

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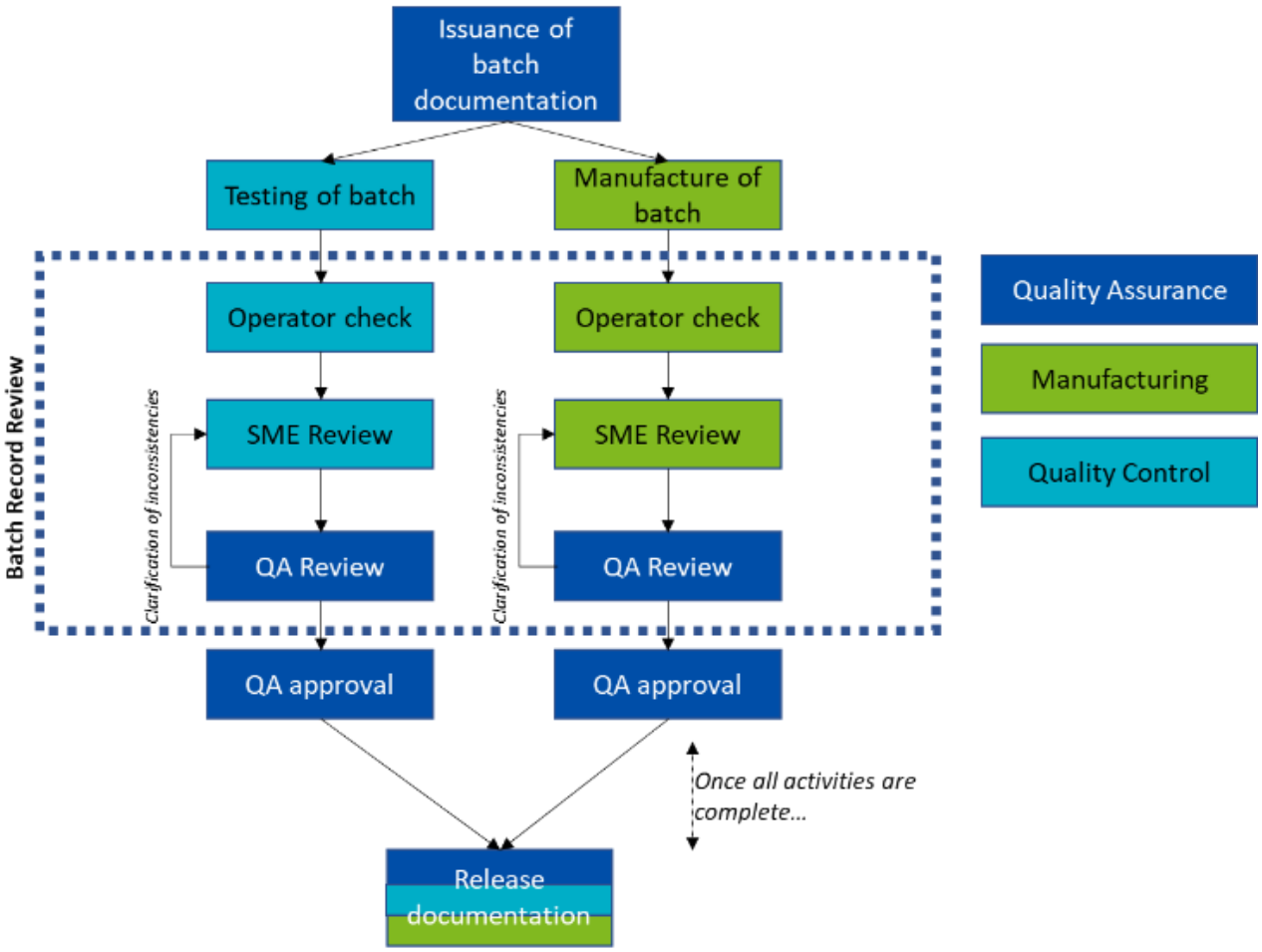
This article explains how Minaris Regenerative Medicine ensures efficient batch record review for cell and gene therapies in a timely and cost-effective manner.

Efficient Batch Record Review

The manufacture of cell and gene therapies is complex and oftentimes lengthy, and requiring extensive QC (quality control) testing. A batch of final product or a cell bank is only useable with the associated batch and release documentation. In GMP (Good Manufacturing Practice) terminology: "What wasn't documented, did not happen." Each page of the batch documentation therefore requires review. This is a regulatory requirement enshrined in law, to ensure that the manufacturing and testing of the batch was undertaken as per GMP, the regulatory submission and any other legal prerequisites. The very nature of cell and gene therapies can in some cases mean that delays to the release and shipment of the medication could have grievous consequences for the patient.

Herein lies the conundrum: how do you perform a full review of a batch record, comprising of several hundreds of pages, in the most efficient way, whilst ensuring that all regulatory requirements have been met? Furthermore, how does a CDMO (Contract Development and Manufacturing Organization) ensure that this is done in a systematic, meaningful way for all types of products and different customers, whilst ensuring that timelines are met?



How do you eat an elephant?

As per the adage: How do you eat an elephant? The answer in this case is: one *standardised* bite at a time. You begin at the basics and define what checks are needed and their respective timepoints. Then you determine who is responsible for which check and when the check is to be performed.

If you do not perform such an exercise, you will most likely end up with a batch record review that is

patchy in some areas and duplicated in others; it is neither robust nor efficient. Worse still, reviewers may wrongly assume that their checks have already been completed elsewhere. Moreover, if the review process is not well-defined, it can also be hard to make resource estimates for ongoing and future projects.

Based on our experience as a CDMO, Minaris Regenerative Medicine has developed a review SOP (standard operating procedure) which is underpinned by a cross-functional roles and responsibilities matrix. This consists of a table comprising of: reviewer role, document type, timepoint of review, scope of review, location of the confirmatory signature and any applicable references to regulations.

Review activities by the operator and by the subject matter expert of the department take place to resolve any documentation errors and ensure that comments are clear and unambiguous, before passing the paperwork on. To this effect the cleanroom documentation has been designed such that completed sections can be transferred out in regular intervals during processing to permit timely review. The QA review that follows is documented on standardised templates that permit common errors to be trended, as part of a Right First-Time metric. The aim of this metric is to drive continuous improvement of the batch documentation design, identify any potential GDP deficits and target these with discussion/training before these translate into errors. With consistent batch throughput, time savings of approximately 20% have been achieved. The future of batch documentation is ultimately to become fully electronic wherever possible. Electronic batch records (EBRs) via Manufacturing Execution Systems (MES) present a possibility to eliminate GDP issues and automate a high proportion of review steps, via the review by exception concept. Minaris has implemented a suitable MES system to take advantage of this concept and drastically expedite review and release times for ATMPs. However, despite the typical avalanche of paperwork no longer being applicable in such cases, the underlying principles of the roles and responsibilities matrix remain the same. As such, clear delineation of roles and responsibilities remains an essential foundation of efficient batch record review.

Learn More

Minaris Regenerative Medicine is a global contract development and manufacturing organization (CDMO) for cell and gene therapies. We offer our clients high value clinical and commercial manufacturing services, development solutions, and technologies. We are pioneers in the field with more than 20 years' experience providing outstanding quality and reliability. Our facilities in North America, Europe, and Asia allow us to supply patients globally with life-changing therapies.

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