

# SCE White Paper 2.0 – A Modernised Framework for the Next Generation of Data Analysis

Mark Bynens, Johnson & Johnson, Beerse, Belgium

## ABSTRACT

The updated SCE White Paper 2.0 advances the standard for modern analytics platforms in the pharmaceutical industry, emphasizing scalability, technology agnosticism, and comprehensive data integration. Building on previous guidelines this version highlights the importance of a GxP environment that supports multiple programming languages and cutting-edge analytics to accelerate clinical trial reporting and drug approval. It addresses challenges posed by legacy systems and evolving digital technologies, advocating for flexible solutions that leverage cloud, advanced analytics, and real-world evidence. By fostering a multi-faceted eco-system, this update aims to enhance data transparency, regulatory compliance, and analysis efficiency, ultimately transforming traditional clinical data processes into agile, innovation-driven operations. This white paper serves as a strategic framework for industry leaders committed to harnessing digital evolution for faster, better-informed decision-making in clinical research.

## INTRODUCTION

The purpose of this document is to provide an early overview of the emerging concepts and strategic direction informing the development of the SCE White Paper 2.0. While the updated white paper is still in progress and has not yet been formally published, this presentation outlines the current thinking behind the next generation of Statistical Computing Environments and the motivations driving this evolution.

The scope of this introduction is to summarize how industry needs, technology advancements, and regulatory expectations have evolved since the original SCE White Paper, and why a refreshed framework is required. It highlights the key areas where modernization is underway, including cloud enablement, multilingual analytics, real-world evidence integration, and scalable, technology-agnostic architectures.

This document is intended to give readers the foundational context needed to understand the direction of the forthcoming SCE White Paper 2.0. It serves as a preview of in-development concepts, enabling early engagement, shared understanding, and constructive discussion ahead of the paper's release.

## BACKGROUND AND RATIONALE

### WHAT THE ORIGINAL WHITE PAPER<sup>[1]</sup> ESTABLISHED (2019–2021)

The original paper defined the SCE as a multi-faceted, software-agnostic, GxP-controlled environment that enables SDTM and ADaM datasets, TLGs, and submission deliverables, supported by cloud-native or cloud-agnostic infrastructure, multi-language compute, standardized workflows (DEV→VAL→PROD), version control, audit trails, traceability, and automation.

### WHY A 2.0 UPDATE IS NEEDED

The industry now requires credible, auditable use of AI/ML (including LLMs), high-performance computing (e.g., GPUs) for modern statistics, protection of data-in-use, privacy-preserving collaboration across institutions, mesh-based data product governance, and hardened reproducibility and diagnostics to meet heightened regulatory expectations.

### POTENTIAL BENEFITS EXPECTED

In an SCE 2.0 environment, organizations can significantly accelerate the time to submission, as modernized, cloud-enabled workflows, reusable standards, and automated quality controls shorten the overall analysis lifecycle and enable teams to deliver insights far more rapidly. Productivity improves as standardization and automation become embedded into the analytics ecosystem, reducing manual effort and freeing specialists to focus on higher-value scientific work. With unified data flows across the CDR, MDR, and exploratory environments, SCE 2.0 also provides real-time access to trusted data, giving study teams the ability to make faster, higher-quality decisions throughout development.

By consolidating analytical processes and promoting code, metadata, and component reuse, SCE 2.0 materially reduces operational costs and rework, strengthening both efficiency and consistency across studies and submissions. The adoption of modern, flexible tooling, ranging from multi-language compute to secure notebook environments and GPU-accelerated workflows, supports recruitment and retention by giving statisticians, programmers, and data scientists a contemporary technical environment that aligns with current industry expectations. Finally, the platform's strengthened governance model, combining controlled environments, integrated audit trails, role-based access, confidential computing, and AI/ML guardrails, provides enhanced security, data integrity, and regulatory compliance, ensuring that analytical outputs remain credible, traceable, and submission-ready in an increasingly complex regulatory landscape.

## **UPDATED SCE DEFINITION**

The updated draft definition provides the conceptual foundation for understanding how SCE 2.0 expands beyond the original scope. To fully appreciate the implications of this broader framing, it is important to compare it directly with the original definition and identify where the most significant shifts occur.

A clear and consistent definition of the Statistical Computing Environment is essential, as it establishes the conceptual and operational boundaries of the entire platform. The definition not only determines what the SCE includes and controls, but also shapes expectations for compliance, integration, scalability, and the types of analytical activities the environment should support. As technology, regulatory expectations, and analytical methods continue to evolve, refining the SCE definition becomes critical to ensuring that its scope remains aligned with modern needs. The following section contrasts the original definition with the updated 2026 perspective, highlighting how expanded capabilities, new data sources, and emerging computational approaches influence the future scope and design principles of SCE 2.0.

## **ORIGINAL DEFINITION**

The Statistical Computing Environment (SCE) starts with the receipt of or access to clinical trial data from different sources<sup>[a]</sup> at different stages of the drug development process. It should enable the development of SDTM or tabulation datasets, ADaM or analysis datasets, tables listings and graphs (TLGs), and submission components for all clinical trial related deliverables in line with regulatory requirements<sup>[b]</sup>. The SCE takes these deliverables to the point at which they are made available to the customer<sup>[c]</sup>.

There could be tools within or integrated with the SCE to help develop, manage and maintain programs, documentation, metadata, codelists, etc. and provide workflows, metrics, an audit trail, versioning, project management functionalities, visualizations and many more.

The SCE is a multi-faceted platform primarily consistent of a highly GxP controlled environment that provides a foundation for documenting rigor in the analysis and reporting of clinical trial results. Rigor requires transparency, traceability, reproducibility, and adequate documentation. It is software agnostic, can support multiple statistical programming languages and could allow statistical modelling and simulations to be run.

<sup>[a]</sup> CDMS/RDC/EDC system, MDR, CROs, or external data vendors, data warehouse, etc. ...

<sup>[b]</sup> CSRs, ad hoc analysis or other regulatory requirements such as annual reports, PSUR, DSUR, CT.GOV, EUDRA.CT, IB, etc.

<sup>[c]</sup> Medical Writing, Data Safety Monitoring Committee, Drug Safety, publishing teams etc.

Note that the SCE definition or scope of the SCE should not limit readers of this white paper to broaden the scope with real world data, IoT data, data science, non GxP work, ...

## **UPDATED DEFINITION (DRAFT)**

The Statistical Computing Environment (SCE) is a cloud-enabled, secure, and scalable platform that provides governed access to clinical and related data throughout the drug development lifecycle. It integrates seamlessly with upstream data sources such as EDC/CDMS systems, CRO data transfers, external vendor feeds, enterprise data platforms, and a Clinical Data Repository (CDR) or Clinical Data Hub that centralizes, harmonizes, and standardizes clinical study data.

The SCE enables the end-to-end development of SDTM/tabulation datasets, ADaM/analysis datasets, and the creation of tables, listings, and graphs (TLGs). It also supports the production of all required submission components for global health authorities. These deliverables are made readily available to key stakeholders, including Medical Writing, Data Monitoring Committees, Drug Safety, and regulatory publishing teams.

An integral part of the modern SCE ecosystem is its tight integration with a Metadata Repository (MDR), which governs standards, controlled terminology, study configurations, data models, dataset specifications, and reusable

components. This ensures consistency, standardization, and automation across the full analytics and reporting workflow.

The SCE also includes or interfaces with an Exploratory Analytics Environment, providing a flexible, non-GxP space for data science, visualization, prototyping, statistical modeling, simulation, and advanced analytics. This environment may support AI/ML workflows, real-world data, IoT-derived datasets, and other emerging data sources, while remaining logically connected to the governed SCE.

The platform incorporates features to manage code, programs, documentation, metadata, and workflows. It provides version control, audit trails, reproducibility frameworks, pipeline automation, metrics dashboards, collaboration capabilities, and modern visualization tools. These features strengthen operational efficiency and analytical quality. At its core, the SCE is a highly controlled, GxP-compliant environment designed to ensure rigor in the analysis and reporting of clinical trial results. This rigor is built on transparency, traceability, reproducibility, auditability, and strong documentation practices. The SCE is software-agnostic, supporting multiple statistical programming languages and open-source ecosystems.

Data Sources may include EDC/CDMS platforms, CRO environments, external vendor feeds, CDR/Clinical Data Hubs, MDRs, real-world data streams, and enterprise data platforms.

Regulatory Deliverables may include CSRs, ad-hoc analyses, annual and periodic reports (e.g., PSURs, DSURs), CT.gov/EudraCT postings, and Investigator's Brochures.

Stakeholders may include Medical Writing, Pharmacovigilance, Data Monitoring Committees, Clinical Teams, and regulatory publishing groups.

Note: The SCE is not limited to traditional clinical trial activities. Modern SCE implementations increasingly support real-world evidence generation, exploratory data science, advanced modeling and simulation, AI applications, and non-GxP research, enabling organizations to unify analytics capabilities in a scalable, future-ready ecosystem.

#### **KEY DIFFERENCES**

Having established both the original and updated definitions, the following section highlights the key differences that illustrate how the SCE has evolved from a traditional reporting environment to a modern, scalable analytics ecosystem. These distinctions set the stage for exploring the specific enhancements required for SCE 2.0.

The original SCE definition focused primarily on enabling the development of SDTM, ADaM, and TLGs within a highly controlled GxP environment, beginning only once clinical trial data had been received. Its scope was centered on supporting the core regulatory reporting pipeline: producing analysis datasets, generating outputs, maintaining traceability, and ensuring compliance. Tools, workflows, version control, and audit trails were described as supportive capabilities, but largely in service of a traditional, submission-oriented analytics process. The environment was mainly defined by its function within clinical trial reporting, rather than by its role within the broader data and technology ecosystem.

In contrast, the updated draft definition vastly broadens both the conceptual and operational scope of the SCE. Rather than starting with data receipt, the new definition positions the SCE as a cloud-enabled, scalable platform that provides governed access to all clinical and related data across the entire drug development lifecycle, integrating deeply with enterprise data platforms, external vendor feeds, CRO operations, and a centralized Clinical Data Repository/Hub (CDR). The addition of a tightly integrated Metadata Repository (MDR) elevates the SCE from a procedural environment to a standards-driven automation engine, ensuring consistency, reuse, and lineage awareness across the analytics workflow.

A defining expansion in the updated scope is the introduction of a dedicated, non-GxP Exploratory Analytics Environment, a capability absent from the original definition. This extension reflects modern analytical needs: AI/ML development, real-world data (RWD) integration, simulation, prototyping, and IoT-enabled datasets. It acknowledges that today's statistical computing workflows extend beyond regulated pipelines and require collaboration across data science, engineering, and exploratory research teams. Yet, these activities remain connected to the validated SCE, ensuring promotability, reproducibility, and controlled transitions from exploration to production.

the updated definition reframes the SCE as a dynamic, enterprise-scale platform, designed to support both regulated and innovative analytics at speed and at scale.

Finally, although both definitions maintain the core principles of transparency, traceability, reproducibility, auditability, and software agnosticism, the updated definition expands these principles into a future-ready analytics ecosystem

that explicitly incorporates AI/ML, reusable standards, real-time integrations, multi-language compute, and enterprise-wide data strategies.

## **POTENTIAL FURTHER ENHANCEMENTS/UPDATES**

Having identified the key differences between the original and updated definitions, we now shift toward the future-facing capabilities needed to operationalize SCE 2.0. These enhancements illustrate how the conceptual changes translate into concrete requirements for a modern, scalable, and regulatory-aligned platform.

As the Statistical Computing Environment continues to evolve, it is essential to reassess the capabilities required to support modern analytics, advanced computation, and increasingly complex regulatory expectations. The following areas reflect potential updates that we believe are important to consider for SCE White Paper 2.0. These represent collective learnings, emerging industry trends, and forward-looking needs identified across domains such as AI governance, reproducibility, high-performance compute, exploratory analytics, and cross-organizational collaboration. While these topics are not intended to restrict or predetermine the final scope of SCE 2.0, they highlight key opportunities to strengthen the framework and ensure that the next iteration remains relevant, scalable, and aligned to the future of clinical development.

### **AI GOVERNANCE & COMPLIANCE**

Modern SCE platforms should strengthen their approach to AI governance and compliance, as current environments lack the rigorous handling of AI model credibility, bias assessment, documentation, and lifecycle controls required for regulated use. With regulatory bodies increasingly emphasizing risk-based credibility and transparency in AI applications, the absence of standardized governance creates potential gaps in both audit readiness and scientific reliability. Establishing clear processes for validating AI outputs, documenting assumptions, and ensuring consistent oversight is therefore essential for the SCE 2.0 landscape.

### **LLMOPS & AI-ASSISTED PROGRAMMING**

As large language models begin contributing to SAP development, specifications, code generation, and interpretation tasks, SCE 2.0 should include robust LLMOps capabilities. The current lack of governance for LLM-generated content, such as missing prompt logging, evaluation frameworks, and guardrails for supervised use, creates compliance and reproducibility risks. Since LLMs will inevitably play a role in programming and QC workflows, platforms should embed mechanisms to track, audit, and validate all AI-assisted contributions, ensuring that generated code and text remain trustworthy, reviewable, and controllable.

### **GPU / ADVANCED COMPUTE FOR STATISTICS**

The increasing reliance on computationally intensive methods such as Bayesian analysis, MCMC simulation, and machine learning exposes a major gap in current environments, which typically lack standardized GPU-enabled compute. Without consistent GPU infrastructure, including reproducible environments, appropriate scheduling, and performance-optimized execution, organizations struggle to operationalize advanced analytics at scale. SCE 2.0 should therefore incorporate modern, high-performance compute capabilities to ensure efficiency, reproducibility, and scientific rigor for contemporary statistical workloads.

### **CONFIDENTIAL COMPUTING**

SCE 2.0 should address the need for secure execution sensitive analytics by introducing confidential computing capabilities. Current environments do not adequately protect data-in-use, leaving gaps when collaborating with external partners or operating in shared cloud infrastructures. Confidential computing ensures that sensitive data remains encrypted and protected even during processing, strengthening privacy controls and enabling broader, safer multi-party research collaborations.

### **SYNTHETIC DATA SUPPORT**

Synthetic data is becoming a critical enabler for safe development, onboarding, testing, and external collaboration, yet most SCEs do not provide built-in capabilities for its generation or assessment. Missing components include pipelines for producing synthetic datasets, utility scoring to evaluate representativeness, and privacy-risk metrics to ensure no sensitive information can be inferred. Integrating synthetic data support into SCE 2.0 will allow teams to accelerate development cycles and collaborate more freely without compromising confidentiality.

### **DATA MESH & DOMAIN DATA PRODUCTS**

The transition toward lakehouse and data-mesh architectures exposes a need for clearer definitions of “analysis data products” within the SCE. Today’s environments lack structured governance for lineage, ownership, and versioning of these products, and organizations often rely on unnecessary data replication that undermines standardization. SCE 2.0 should introduce a model where SDTM, ADaM, and TLG outputs are treated as governed, reusable, lineage-tracked data products, enabling scalable analytics, minimizing redundancy, and preserving a single version of truth across the ecosystem.

### **ENHANCED REPRODUCIBILITY FRAMEWORK**

To meet the increasingly stringent expectations of regulators such as FDA and EMA regarding AI/ML-enabled analytics, SCE 2.0 should incorporate a more robust reproducibility framework. Current systems typically lack complete execution metadata, including environment hashes, package and container digests, and underlying hardware profiles. Without this level of detail, reproducibility claims remain difficult to substantiate, particularly when analyses rely on dynamic environments or advanced computation. Strengthening reproducibility mechanisms not only ensures scientific defensibility but also directly supports regulatory confidence in results generated within the SCE.

### **AUTOMATED STATISTICAL DIAGNOSTICS**

High-quality statistical outputs increasingly depend on the ability to automatically detect anomalies, yet most SCE platforms still rely on manual or inconsistent diagnostic checks. SCE 2.0 should integrate automated statistical diagnostics capable of identifying outliers, monitoring data drift, verifying statistical assumptions, and delivering model-level diagnostics. This automation reduces the risk of overlooked data issues, enhances methodological rigor, and frees statistical programmers and biostatisticians to concentrate on interpretation rather than mechanical review tasks.

### **INTERACTIVE & EXPLORATORY STATISTICS**

Modern analytical workflows rely heavily on iterative, interactive exploration, but many SCE implementations still do not provide secure and well-governed notebook environments for this purpose. SCE 2.0 should support controlled access to open-source and emerging technologies, enabling exploratory data analysis, modeling, and visualization while maintaining auditability, lineage tracking, and promotion pathways into validated production workflows. These environments enhance creativity, agility, and methodological precision, all while remaining anchored to regulated standards.

### **RWD-READY STATISTICAL PIPELINES**

The increased use of real-world data (RWD) and digital health technologies creates demand for SCE capabilities that can operationalize modern causal inference and RWD-specific methodologies. To support contemporary regulatory expectations, SCE 2.0 should provide built-in pipelines for propensity scoring, causal inference, population adjustment, and RWD quality-control frameworks. These standardized tools ensure consistent, defensible application of RWD methods while enabling faster decision-making in both exploratory and regulatory contexts.

### **CRO COLLABORATION ENHANCEMENTS**

As global development increasingly depends on CROs and external partners, the need for frictionless and compliant collaboration has grown. SCE 2.0 should support trust-zone environments, partial-pipeline execution, federated QC, and other mechanisms that allow sponsors and CROs to jointly contribute without risking data leakage or breaking compliance boundaries. These enhancements improve scalability, strengthen governance, and ensure consistent analytical quality across distributed teams.

### **COST FRAMEWORK & RESOURCING STRATEGY**

A comprehensive cost and resourcing strategy is essential to ensure the long-term sustainability of SCE 2.0. Beyond software and infrastructure expenses, organizations must account for cloud compute usage (including GPU consumption), storage lifecycles, validation burdens, automation maintenance, training, and data governance operations. Without a holistic view of these components, cost management becomes reactive rather than strategic. A mature SCE 2.0 should therefore include financial transparency mechanisms, such as, consumption dashboards, and resource-allocation planning, to ensure investments align with business value and scientific needs.

### **SHARED STATISTICAL & DATA-SCIENCE CAPABILITIES**

The boundary between traditional biostatistics and data science continues to blur, making it critical for SCE 2.0 to support shared capabilities across disciplines. Today, analytic teams often work in separate ecosystems, leading to duplicated effort, inconsistent methodology, and siloed innovation. By enabling shared compute environments, standardized tooling, common governance, and cross-functional workflows, the SCE can serve as a unifying platform that accelerates discovery, promotes methodological consistency, and enhances interdisciplinary collaboration.

#### **AUTOMATION OF SDTM, ADAM, AND TFL OUTPUTS**

Automation represents one of the most significant opportunities for efficiency in clinical reporting. While many organizations automate fragments of the SDTM, ADaM, or TFL workflow, few have built fully integrated, metadata-driven automation frameworks that span all three. SCE 2.0 should incorporate standardized pipelines, anchored by MDR metadata, that automatically generate derivations, analyses, and outputs while still allowing controlled flexibility for study-specific nuances. This not only reduces cycle times and manual error but also strengthens reproducibility, traceability, and regulatory assurance.

#### **LONG-TERM STRATEGY: USER EXPERIENCE VS. INVESTMENT PRIORITIZATION**

As SCE capabilities expand, organizations must balance investment in long-term infrastructure with the need to deliver an intuitive, efficient user experience. A visually cohesive interface, consistent workflows, and high-quality user interactions are essential for adoption, but these should be supported by sustained investment in foundational architecture, governance, security, and automation. SCE 2.0 therefore requires a strategic roadmap that harmonizes front-end usability improvements with backend modernization efforts, ensuring that enhancements are both impactful and sustainable over time.

#### **ADDITIONAL POTENTIAL ENHANCEMENTS AND UPDATES**

Beyond the areas already identified, several additional enhancements could be considered to strengthen the SCE White Paper 2.0 and ensure its alignment with industry expectations. First, the paper would benefit from explicit reference to relevant regulatory guidances, including those emerging around AI/ML in drug development, to reinforce compliance credibility and contextualize the increasing scrutiny placed on model governance and analytical transparency. Furthermore, the operating model implications of SCE 2.0 merit deeper discussion, particularly the need for new governance forums, expanded collaboration structures, and future-focused roles. The validation strategy also deserves elaboration, especially how continuous validation adapts to cloud environments, how regression packs are maintained, and how documentation expectations evolve in an automated, containerized ecosystem. Similarly, scalability and performance considerations should go beyond GPU enablement to address horizontal and vertical scaling patterns, workload orchestration, and cost-optimization practices that underpin sustainable cloud adoption. Cybersecurity, while touched on in the context of confidential computing, requires a broader framing that includes identity lifecycle management, zero-trust principles, LLM auditability, and mitigation of data-leakage risks inherent to modern analytic architectures. To ensure balance, the paper should also acknowledge potential risks and pitfalls, such as cost overruns, MDR/CDR integration complexity, skill-set gaps and cloud-service volatility, and offer mitigation approaches. Finally, incorporating practical examples or small case studies (e.g., automated SDTM generation, reproducibility validation, or GPU-accelerated simulation workflows) would ground the proposed updates in real-world application and help readers better understand how SCE 2.0 capabilities materialize in practice.

#### **CONCLUSION**

Although the SCE White Paper 2.0 remains under development, the direction established so far already signals a meaningful evolution in how analytical platforms should operate to support the next generation of clinical trial development. Both the opportunities and the challenges that arise from increasing analytical complexity, rapidly expanding data ecosystems, and the fast-moving emergence of AI-enabled methods should now be thoughtfully addressed.

In shaping the direction of SCE 2.0, we have revisited the foundational principles established in the 2019–2021 paper, transparency, traceability, reproducibility, auditability, and strong documentation, and considered how these principles should be preserved for now even as the scope of the SCE broadens significantly.

SCE 2.0 preserves these foundational attributes while addressing AI-era realities with stronger governance, performance, privacy, and collaboration constructs. By centring on MDR-driven automation, a governed Clinical Data Repository/Hub, and a safe but connected exploratory environment, the emerging framework enables organizations to deliver faster, higher-quality submissions and analytics at scale while maintaining regulatory confidence. This direction reflects a clear industry need: to unify exploratory and regulated work, to support modern computational methods including LLM-assisted programming and GPU-enabled statistics, and to create a flexible architecture capable of integrating RWD, federated analysis, and evolving data modalities.

As this paper continues to develop, the concepts presented should be viewed as a working foundation rather than final guidance. Additional refinement, external input, and alignment across companies, consortia, and regulatory perspectives will be essential to ensure the final white paper is both implementable and forward-looking.

Ultimately, the ongoing drafting of SCE 2.0 reflects a shared ambition to build a modern, trustworthy, and extensible analytics ecosystem that accelerates insight generation, improves reproducibility, and enables scientific excellence at scale. While the work is not yet complete, the direction is clear: SCE 2.0 will serve as an integrated, future-ready platform capable of supporting both the regulatory rigor and innovative analytical capabilities required for the next era of clinical trial development.

## **LIST OF ABBREVIATIONS**

ADaM: Analysis Data Model  
CDMS: Clinical Data Management System  
CDR: Clinical Data Repository / Clinical Data Hub  
CRO: Clinical Research Organization  
CSR: Clinical Study Report  
CT.gov/EudraCT: ClinicalTrials.gov / EU Clinical Trials Registry  
DSUR/PSUR: Development / Periodic Safety Update Report  
EDC: Electronic Data Capture  
GxP: Good (Clinical, Lab or Manufacturing) Practices  
LLM: Large Language Model  
LLMOps: Large Language Model Operations  
MCMC: Markov Chain Monte Carlo  
MDR: Metadata Repository  
RWD/RWE: Real-World Data / Real-World Evidence  
SCE: Statistical Computing Environment  
SDTM: Study Data Tabulation Model  
TLG: Tables, Listings and Graphs

## **REFERENCES**

[1] PHUSE, "SCE White Paper: Final (15 Dec 2021)," 2021. [Online]. Available: [https://phuse.s3.eu-central-1.amazonaws.com/Events/2021/US+Connect+2021/SCE\\_White\\_Paper\\_Final\\_15Dec2021.pdf](https://phuse.s3.eu-central-1.amazonaws.com/Events/2021/US+Connect+2021/SCE_White_Paper_Final_15Dec2021.pdf)

## **ACKNOWLEDGMENTS**

We would like to thank all members of the SCE White Paper 2.0 Working Group and their respective companies for their time, input, and ongoing collaboration throughout this effort. Their contributions continue to shape the direction and content of this work.

We also wish to express our gratitude to the Programming Head Council for their sponsorship and guidance, which have helped make this initiative possible.

## **CONTACT INFORMATION**

Your comments and questions are valued and encouraged.  
Contact the author at:

Author Name: Mark Bynens  
Company: Johnson & Johnson  
Work Phone: +32 494 95 56 88  
Email: [mbynens@its.jnj.com](mailto:mbynens@its.jnj.com)

Brand and product names are trademarks of their respective companies.