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# GS1 Healthcare Sustainability Strategy 2023-2027

Working towards a more sustainable healthcare supply chain  
with the support of GS1 standards and services

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# 1 GS1 Healthcare and sustainability

## 1.1 Background

Sustainability is increasingly in focus in healthcare. Rightfully so, because healthcare significantly impacts the global climate crisis and, therefore, has a role to play in resolving it<sup>1</sup>.

At the same time, the global climate crisis in the form of rising temperatures, an increase in flooding, fires, hurricanes, and other natural disasters impacts many people's health across the globe. Most often, the people who struggle to access healthcare are impacted most by the climate crisis. At the same time, people who struggle to access healthcare often have the lowest carbon footprint<sup>2</sup>.

There is more to sustainability than environmental impact. Beyond ensuring the planet is preserved for future generations, medicine and medical devices should be accessible to everyone, people working in supply chains should be treated and paid fairly, and companies should have a sustainable business model. This is also described as the social and economic components of sustainability<sup>3</sup> and in the Sustainable Development Goals (SDGs)<sup>4</sup>.

## 1.2 The importance of the supply chain

According to Health Care Without Harm & Arup (2019), 71% of healthcare's climate footprint is derived from the healthcare supply chain (scope 3). Scope 3 emissions are caused by, for example, production, packaging, transport, waste generation and end-of-life treatment of medical devices and pharmaceuticals.

Because of the significant contribution of the supply chain, many organisations are looking into ways to understand this global landscape better to be able to transform and decarbonise the supply chain.

One of the organisational actions is moving from the traditional linear to a circular supply chain, based on the ability to reuse, recycle, and repair to keep materials in use for as long as possible. This would drastically reduce global emissions and pollution. However, this shift from a linear to a circular supply chain will require much effort and standards to align such complex structures and allow more sustainable activities. This is particularly true in the healthcare sector, as medicines and medical devices are complex goods that can have an enormous environmental impact if not managed properly. Avoiding waste, reusing packages, improving the tracking of medicines, medical devices, and their components, and helping healthcare providers to manage their inventories and orders more efficiently are key challenges of a more sustainable healthcare supply chain<sup>5</sup>.

## 1.3 The importance of the standards

Sustainability drives organisations to critically assess their business models and supply chains. New standards, tools and services are being developed for organisations to comply with the sustainability requirements and needs that regulators, manufacturers, distributors, healthcare providers, patients and other actors in the supply chain have.

GS1 standards for identification, data capture, data sharing and traceability have the potential to support organisations in understanding, measuring, and quantifying the impacts of their supply chains and help organisations meet and exceed their sustainability objectives<sup>6</sup>.

The standards support many 'traditional' processes, such as improved inventory management to prevent waste, more efficient packaging to minimise transportation emissions and gathering data to make informed decisions on which product is the proper one for a specific patient or procedure or to provide evidence on sustainability claims, growing trust in their brands. But when moving from that linear to the circular model, there is an opportunity to explore much more, including upstream actors

<sup>1</sup> Health Care Without Harm & Arup (2019). HEALTH CARE'S CLIMATE FOOTPRINT. Online: [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>2</sup> UNCTAD (2021). Smallest footprints, largest impacts: Least developed countries need a just sustainable transition. Online: <https://unctad.org/topic/least-developed-countries/chart-october-2021>

<sup>3</sup> UN Global Compact. Online: <https://unglobalcompact.org/what-is-gc/our-work/social>

<sup>4</sup> <https://sdgs.un.org/goals>

<sup>5</sup> Health Care Without Harm & Arup (2019). HEALTH CARE'S CLIMATE FOOTPRINT. Online: [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>6</sup> GS1 Sustainability Framework (2023) (internal document).

and processes, the processing of packaging material, ensuring raw materials used in the creation of packaging support sustainability goals, better management of (almost) expired pharmaceuticals, return schemes and reuse or refurbishment of medical devices.

However, there is also a risk of other organisations filling the gaps when GS1 standards are not developed or are ready to be deployed. This could potentially endanger GS1's position as a standards organisation. What if a different identification number and data carrier for sustainability purposes were required? What if data elements for exchanging sustainability information are developed that do not match GS1's master data set and data standards? What if access to online product information is required, but the industry is not ready to deploy the GS1 Digital Link standard? What if traceability data sharing is required for capturing emissions across the supply chain and EPCIS (Electronic Product Code Information Services) is unsuitable?

At a global level, the GS1 Sustainability Framework outlines the framework that will enable GS1 to capitalise on new opportunities and drive the relevance of GS1 standards and services across entire value chains. GS1's unique position as a not-for-profit standards organisation enables the organisation to play a critical role. In addition to this framework, GS1 Healthcare<sup>7</sup> needs to support the healthcare sector in reaching its sustainability goals and ensure that its standards continue to remain relevant at the speed of change, and therefore critically assess the role the GS1 Healthcare community and the standards should play.

## 1.4 GS1 Healthcare and sustainability

Because of the importance of the topic, GS1 Healthcare believes that sustainability should not be handled in a silo but embedded as part of the overall [GS1 Healthcare Strategy 2023-2027](#). This document describes the sustainability objectives that will be integrated into each of the seven focus areas of the GS1 Healthcare Strategy and is approved by the GS1 Healthcare Leadership Team 2022-2023.

## 1.5 Scope

Sustainability is a very broad topic. Within this Sustainability Strategy, GS1 Healthcare focuses on the processes in the healthcare supply chain that (could) benefit from using GS1 standards to be more sustainable and all relevant actors involved. Being more sustainable does not only relate to maintaining natural resources for future generations; this could also mean social equity and economic development.

Besides this, the GS1 Healthcare Strategy provided the starting framework. Beyond the focus areas of the current healthcare strategy, two additional work efforts were identified by the sub-working group that needs exploration. These include identifying packaging composition and data reporting about packaging material and moving beyond the traditional linear supply chain to include circularity and raw materials processes.

Although developments in other sectors are important to understand because they might impact the healthcare sector, this document is only relevant to the work GS1 does within the healthcare sector. It, however, is important to ensure that the broader GS1 Sustainability Framework is considered.

# 2 Sustainability drivers

While there are many drivers for organisations to become more sustainable, the working group identified the most important ones described below.

## 2.1 The right thing to do

A growing number of organisations believe that having a sustainable business, whether limiting the impact on the environment or ensuring its employees and suppliers are paid a fair wage, is the right thing to do. Sometimes, this is driven by a dedicated CEO or other executives, but often by a new generation of employees challenging the way business has always run.

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<sup>7</sup> For more about GS1 Healthcare: <https://www.gs1.org/industries/healthcare>

## 2.2 Business opportunity

Companies realise there are benefits for their business when striving to have more sustainable operations. This could be in terms of happy and engaged employees, trust from clients, consumers or patients and profits through innovation, strategic differentiation, and value creation. A company might reduce its transportation emissions by more efficient packaging of its shipments and save money because of the reduction of transport.

Unfortunately, whether the organisation is genuine in its sustainability goals is often difficult to determine. The GS1 standards can potentially support organisations providing evidence for their sustainability claims.

## 2.3 Local and regional regulations and requirements

Regulatory compliance will be an important driver for many sustainability-related actions in the healthcare supply chain. However, GS1 Healthcare believes the sector should not wait for these before critically assessing the opportunities the GS1 standards and services bring.

Sometimes specific regulated healthcare products are excluded from sustainability-driven requirements or are not in the first scope. But in many, pharmaceuticals and medical devices become increasingly important. These include for example, regulations related to the revision of the Packaging and Packaging Waste Directive<sup>8</sup> and Extended Producer Responsibility schemes, which extend the producer's responsibility for a product to its entire life cycle<sup>9</sup>.

## 2.4 Customer demands

As with many developments, customer demand is often a strong driver for change. Healthcare providers are implementing strategies to become carbon neutral. These include the NHS in the UK, which is working on delivering a net zero NHS<sup>10</sup>. The International Hospital Federation (IHF) is supporting its members with developing net zero, climate resilient and sustainable healthcare<sup>11</sup>. Many hospitals worldwide align to work towards more sustainable healthcare<sup>12</sup>.

These developments, including green purchasing policies, result in a growing need for suppliers to provide sustainability-related information about products.

Although there is not much information on patient demands for more sustainable healthcare treatment, it will benefit patient care. Eventually, the most sustainable care is the one that is not necessary.

<sup>8</sup> European Parliament (2023) Online:

[https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/745707/EPRS\\_BRI\(2023\)745707\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/745707/EPRS_BRI(2023)745707_EN.pdf)

<sup>9</sup> OECD. Online <https://www.oecd.org/environment/extended-producer-responsibility.htm>

<sup>10</sup> NHS (2022) Delivering a 'Net Zero' National Health Service. Online: <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2022/07/B1728-delivering-a-net-zero-nhs-july-2022.pdf>

<sup>11</sup> IHF. Online: <https://ihf-fih.org/what-we-do/geneva-sustainability-centre/>

<sup>12</sup> Health Care Without Harm. Online: <https://noharm-asia.org/issues/asia/global-green-and-healthy-hospitals-asia>

### 3 Objectives

While developing this sustainability strategy, the [GS1 Healthcare Strategy](#) is taken as a framework. Therefore, this section consists of seven focus areas described in the overall healthcare strategy. These seven focus areas are sorted per three themes: GS1 standards as the foundation, GS1 Healthcare community and Addressing new needs.

This chapter describes the objectives and activities at a high level. GS1 Global Office also works on developing a detailed plan. It is understood that at the time of initiation of the sustainability strategy, the detailed planning is subject to change as the programme, developments, and priorities in the healthcare sector related to sustainability evolve. All key objectives, however, are described in this section.

The execution of this strategy will be undertaken with the support and supervision of the GS1 Healthcare Leadership Team and with support from the GS1 Member Organisations active in the healthcare sector. In some instances, engagement with the broader GS1 community, including other sectors at GS1 Global Office and GS1 Healthcare Members, is relevant. This is the case, for example, when the work relates to regulatory developments.

<b>CONSIDERATION, IMPLEMENTATION &amp; DEVELOPMENT</b>		
The sustainability objectives identified for each of the seven focus areas support GS1 Healthcare's work towards the overall aim: GS1 standards are considered, implemented, and, if needed, further developed for a more sustainable supply chain in the healthcare sector. Developing value propositions and creating a working group with interested stakeholders will benefit each of the seven focus areas described.		
<b>GS1 STANDARDS AS THE FOUNDATION</b>	<b>GS1 HEALTHCARE COMMUNITY</b>	<b>ADDRESSING NEW NEEDS</b>
<p><b>STANDARDS DEPLOYMENT</b></p> <p>GS1 Healthcare will ensure the healthcare perspective is considered when standards are developed and deployed. Important processes will be identified, and a special focus will be given to circularity and packaging composition to support recycling and data reporting.</p>	<p><b>INTEROPERABLE IMPLEMENTATION</b></p> <p>Work with the healthcare community to understand and exchange about regulatory requirements for sustainability and educate regulators about the potential of the standards.</p> <p><b>INTERNATIONAL STAKEHOLDERS</b></p> <p>Understand strategic international stakeholders' sustainability goals, educate, and collaborate to drive adoption of GS1 standards.</p> <p><b>SOLUTION PROVIDERS</b></p> <p>Understand solution providers' sustainability goals, educate, collaborate and equip to drive adoption of GS1 standards.</p>	<p><b>SINGLE BARCODE</b></p> <p>The path to achieve the GS1 Healthcare single barcode objective must consider and support the needs of the healthcare community to implement sustainability requirements. At the same time, sustainability requirements will need to be considered and managed so that they do not negatively impact the single barcode objective.</p> <p><b>PRIMARY PACKAGING IDENTIFICATION</b></p> <p>Ensure the potential sustainability improvements that primary package identification brings can support implementation of the primary package in the healthcare sector, beyond bedside scanning.</p> <p><b>EMERGING TECHNOLOGIES</b></p> <p>Ensure the sustainability impact is considered when GS1 Healthcare assesses engagement with a specific emerging technology.</p>

Table 1. Summary of GS1 Healthcare Sustainability Strategy

### 3.1 The overarching objective

The sustainability objectives identified for each of the seven focus areas all support GS1 Healthcare's work towards the overall goal:

#### **GS1 standards are considered, implemented, and, if needed, further developed for a more sustainable supply chain in the healthcare sector**

- Sub-objectives
  - Have a clear understanding of the value proposition of GS1 standards for a more sustainable healthcare supply chain and important processes where GS1 standards support sustainability improvements within that supply chain.
  - Form a working group with stakeholders (potentially HCLT, HC members and MO colleagues) to provide a platform for exchanging information about sustainability-related developments in the healthcare sector within the scope of this strategy and to inform participants about the strategy's progress.

Before working towards this objective and the additional ones described in the sections below, it is critical to understand the value proposition of GS1 standards for a more sustainable healthcare supply chain. As part of this, the most important processes where GS1 standards fully support sustainability improvements in this supply chain need to be identified. The working group has already identified many processes that need to be further prioritised and detailed.

The value propositions that are the output of this work effort will support achieving many of the goals described in the next sections.

The working group that will be formed enables the exchange of sustainability-related information between interested stakeholders within the GS1 Healthcare community. As sustainability is a relatively new topic for GS1 Healthcare, it is a valuable tool to keep parties informed and engaged and get input on our activities related to the seven focus areas.

### 3.2 GS1 standards as the foundation

As described in the new GS1 Healthcare Strategy, GS1 Healthcare will continue to focus on driving the development and deployment of GS1 standards to provide consistent and solid foundations to the healthcare sector.

#### 3.2.1 Standards deployment

Within Standards deployment, GS1 Healthcare will champion and support the deployment of GS1 standards across healthcare for the identification and sharing of data related to products, locations, subjects of care and individual providers. Beyond improving patient safety and efficiency, there is the opportunity for improved sustainability in healthcare supply chains.

An important part of that sustainable supply chain, and currently not described as such in the GS1 Healthcare Strategy, is the circularity component of the supply chain. Therefore, the workstream 'circularity' will be considered in addition to the four major work streams.

- 'From production to supply chain',
- 'at point of care',
- 'product availability, recall and post-market surveillance' and
- 'clinical trials'.

This will enable GS1 Healthcare to move from the traditional linear approach to a circular supply chain model. This will enable us to include processes like waste management, extended producer responsibility, remanufacturing and recycling.



**GS1 standards are considered, implemented, and further developed, if needed, to identify products and data sharing related to products, locations, subjects of care and individual providers for a more sustainable supply chain**

- Sub-objectives
  - Understand the important processes for stakeholders in the supply chain where there is an opportunity for GS1 standards to support sustainability improvements.
  - If needed, engage the healthcare community, and act in developing the standards to support sustainability improvements.
  - Ensure the healthcare perspective is considered in GS1 standards development related to sustainability.

For many important processes in the healthcare supply chain, it is unclear if the standards fully support sustainability improvements. Additional research and potential standards development are needed.

The output of this objective is the identification of three important processes for stakeholders in the supply chain where there is an opportunity for GS1 standards to support sustainability improvements. This will potentially result in a recommendation for the healthcare community for further standard development.

That these processes are identified does not necessarily mean that there is sufficient support from the broader GS1 community and resources available to start working on these developments in the future.

Developments in other sectors must be considered, and the work in the different Global Standards Management Process Mission-specific Working Groups (GSMP MSWG) needs to be monitored. These include the GSMP MSWGs GS1 Circularity and Modernisation of GTIN Management to ensure the healthcare perspective is considered.

**Exhibit and explore the potential of GS1 standards to understand packaging composition to support recycling and data reporting in the healthcare sector**

- Sub-objectives
  - Understand the healthcare community and regulatory needs for understanding packaging composition to support recycling and data reporting.
  - Ensure the healthcare perspective is considered in the development of GS1 standards to support understanding of packaging composition and data reporting.
  - Ensure the healthcare members and the MO community are informed about important developments.

The working group identified the need to explore the potential of GS1 standards for understanding packaging composition to support recycling and data reporting in the healthcare sector as increasingly local and regional regulatory requirements for reporting details about packaging composition and recycling are being implemented. At the same time, initiatives are underway to develop identifiers for packaging material.

### 3.3 GS1 Healthcare community

The GS1 Healthcare community brings together healthcare stakeholders from around the world, including regulators and government agencies, healthcare providers and local GS1 Member Organisations, to enable a globally consistent implementation of our standards.

#### 3.3.1 Interoperable implementation

Within Interoperable implementation, GS1 will work with regulators and government agencies to raise awareness of the importance of local implementation of globally harmonised standards. The activities of this focus area currently relate to Unique Device Identification for medical devices and the identification and traceability of pharmaceutical products. However, there are growing sustainability-related regulatory requirements for product identification, accessing online product information, recycling, etc., for healthcare products where GS1 standards (could) play a role.

It is critical that the GS1 Healthcare Community is informed and regulators are educated about the potential of the standards to support sustainability initiatives and prevent proprietary solutions.

The current GS1 Healthcare Public Policy effort and working group provides the platform to undertake the activities within this focus area and enables the exchange of relevant information between GS1 Global Office, GS1 Member Organisations and healthcare members about local and regional developments. This work will also be undertaken in close collaboration with the GS1 Public Policy colleagues across the globe.

#### **The GS1 Healthcare community is informed about relevant regulatory requirements related to the use of GS1 standards for a more sustainable supply chain.**

- Sub-objectives
  - Understand regulatory requirements for more sustainable healthcare supply chains where GS1 standards (could) play a role.
  - Ensure the healthcare members and the GS1 Member Organisation community are informed about important regulatory requirements.

#### **Regulators are educated about the potential of GS1 standards for a more sustainable supply chain to further drive implementation of the standards and prevent proprietary solutions.**

- Sub-objectives
  - Identify potential new local and regional regulatory requirements.
  - Understand the link between current pharmaceutical and medical device (UDI) regulations and sustainability.
  - Ensure healthcare members and the MO community have the communication material to support conversations with regulators.
  - Ensure regulators are educated about the potential use of GS1 standards to support their sustainability objective and prevent proprietary solutions.

#### 3.3.2 International stakeholders

Different organisations GS1 Healthcare works with, including international intergovernmental organisations, professional healthcare organisations and IT standards development organisations,

have sustainability goals. It is important that these organisations know how the standards could support their sustainability objectives and prevent the development of proprietary solutions.

For example, there are standards development organisations developing standards to do sustainability reporting, and professional healthcare organisations like IHF and EAHP support members to reach sustainability objectives, including reaching a net zero state by a certain date. Many international intergovernmental organisations are working to ensure equity in access to healthcare.

The current stakeholder relationships are the basis of the engagement within this focus area, but there is also the opportunity of building new relationships.

Organisations like the Sustainable Medicines Partnership (SMP) are working on a more sustainable healthcare sector. Projects include determining sustainability product data metrics, accessing online medicine information and preventing medicine wastage. The standards have a role to play in supporting their different objectives and initiatives.

**International stakeholders, including governmental organisations, professional healthcare organisations, standards development organisations and other relevant organisations, are educated about the potential of GS1 standards for a more sustainable supply chain to further drive implementation of the standards and prevent proprietary solutions.**

- Sub-objectives

- Understand the sustainability objectives of current stakeholders (intergovernmental organisations, professional healthcare organisations, standards development organisations) and where the GS1 standards could support sustainability objectives.
- Identify and engage potential new stakeholders that are developing standards and solutions.

Ensure stakeholders are educated about the potential use of GS1 standards to support their sustainability objectives and prevent proprietary solutions.

### 3.3.3 Solution providers

GS1 Healthcare engages with solution providers to support the implementation of GS1 standards in supply chain and clinical systems to allow automated data capture and data exchange.

Solution partners currently supporting organisations implementing the GS1 standards could have a role in supporting stakeholders in achieving their sustainability targets and complying with sustainability regulations and requirements. Several (consultancy) companies are also shifting their focus to healthcare to enable, for example, carbon footprint measurement.

It is important that solution providers are educated about how the GS1 standards could support an organisation's sustainability goals and are provided with the relevant GS1 standards and tools to support their customers.

This work will be integrated into and driven by the current [Solution Provider work effort](#) led by GS1 Global Office Healthcare team.

**Solution providers are educated about the potential of GS1 standards for a more sustainable supply chain to further drive implementation of the standards and prevent proprietary solutions.**

- Sub-objectives
  - Understand the importance of sustainability for GS1 solution providers and the services offered to support their customers with sustainability improvements.
  - Identify new solution providers active in the healthcare supply chain offering sustainability standards and solutions to support sustainability improvements.
  - Educate known and new solution partners on using the GS1 standards to support customers' sustainability objectives.

**Solution partners are equipped with the relevant GS1 standards and tools to support their customers with sustainability objectives.**

- Sub-objectives
  - Understand the GS1 standards needs from solution providers to support their customers with sustainability improvements.
  - Ensure solution providers are engaged or their needs are represented in standard development efforts related to sustainability.

### 3.4 Addressing new needs

Within 'Addressing new needs', GS1 Healthcare will leverage the learnings from the past and ensure that the current needs of the GS1 Healthcare community are effectively addressed to support the acceleration of digitalisation, the call for simple and clear access to product data, and the emergence of new types of treatments.

One of the important lessons of the pandemic is that environmental degradation could increase the risk of global pandemics.

#### 3.4.1 Single barcode

Within the 'Single barcode' focus area, GS1 Healthcare champions and supports the drive to eliminate multiple barcodes on healthcare product packs at the point of care and work with the industry to move towards a single GS1 barcode.

There is the risk that sustainability requirements might impact the GS1 Healthcare single barcode objectives by, for example, requiring an additional barcode on the product's package for healthcare providers and patients to access online sustainability-related product information. At the same time, there is the opportunity for leveraging GS1 standards (including the GS1 Digital Link) to access this information about products through a single barcode. Regulators and other stakeholders need to be aware of this.

It is important to note that this sustainability objective related to the single barcode will greatly depend on the overall objectives of GS1 Healthcare. As this is a work in progress, activities will be adjusted accordingly.

**The path to achieve the GS1 Healthcare single barcode objective must consider and support the needs of the healthcare community to access relevant sustainability-related online information. At the same time, sustainability requirements will need to be considered and managed so that they do not impact the single barcode objective.**

- Sub-objectives
  - Identify sustainability-related regulatory requirements potentially impacting single barcode objectives.
  - Ensure regulators are educated about the opportunity of standards to provide access to sustainability-related information through the single barcode.
  - Ensure the GS1 identification standards support access to sustainability-related information through the single barcode.

### 3.4.2 Primary package identification

Within 'Primary package identification', GS1 Healthcare champions and supports the implementation of GS1 identifiers on primary packaging to enable point-of-care scanning and improve patient safety and traceability.

Primary packaging identification also supports a more sustainable supply chain because exchanging information about and reporting on the primary package use will be possible. For example, it enables inventory management based on the primary package, which will prevent waste. Gathering and sharing master data about the primary package packaging could allow proper handling of the packaging waste (package material could differ from the secondary packaging level). Primary packaging identification also reduces the healthcare provider's need for repackaging and relabelling, further minimising the amount of packaging material and waste generated.

There is the opportunity to leverage these sustainability benefits to further drive primary package identification.

Important to note is that application identifiers in scope for the primary package identification related to sustainability follow the general GS1 Healthcare Strategy primary package workstream guidance.

**Ensure the potential sustainability improvements that primary package identification brings can support implementation of the primary package in the healthcare sector, beyond bedside scanning (e.g., prevent waste of the primary package and enable access to digital/ sustainability-related information).**

- Sub-objectives
  - Understand the benefits of primary package identification for sustainability improvements.
  - Ensure these benefits are considered when GS1 Healthcare works to build a communication plan for awareness of the importance of primary package identification.

### 3.4.3 Emerging technologies

Within 'Emerging technologies', GS1 Healthcare determines if and how GS1 standards would apply to emerging technologies and healthcare treatments, including personalised and precision medicine, gene therapy and complex cold chain products.

Different emerging technologies have different sustainability impacts. GS1 Healthcare believes it is important to consider this impact when assessing its engagement in this area.

**The sustainability impact is considered when GS1 Healthcare assesses engagement with a specific emerging technology.**

- Sub-objectives
  - Support the emerging technologies work effort in assessing the sustainability impact of an identified new emerging technology.
  - Develop requirements determining the sustainability impact of a new emerging technology identified by GS1 Healthcare.