

SUSTAINABLE FOOD CONTACT MATERIALS

IN THE EUROPEAN
HEALTHCARE SECTOR



THE RISKS OF FOOD CONTACT MATERIALS	03
ENVIRONMENTAL AND HEALTH ISSUES ASSOCIATED WITH FCMs	05
THE CHALLENGE OF REMOVING HARMFUL FCMs	10
WEAK EU REGULATORY FRAMEWORK	11
CHALLENGES AND BARRIERS IN HEALTHCARE	13
TAKING ACTION IN HEALTHCARE	14
REDUCING PREGNANT WOMEN AND YOUNG CHILDREN'S EXPOSURE TO PLASTICS (FRANCE)	15
USING GLASS BOTTLES IN THE MILK BANK, MATERNITY, AND NEONATAL DEPARTMENTS (SPAIN)	17
REPLACING SINGLE-USE PLASTICS IN PATIENT CATERING (UK)	20
REDUCING SINGLE-USE PLASTIC IN THE CANTEEN (UK)	22
RECOMMENDATIONS	25
REDUCING PLASTIC USE IN HEALTHCARE	26
EU POLICY RECOMMENDATIONS	28
CLOSING REMARKS	30

THE RISKS OF

FOOD CONTACT MATERIALS



Food contact materials (FCMs) play an important role in food services in healthcare - they are used in a range of common catering products and help ensure the safe delivery of food to patients and staff. There are, however, health and environmental risks associated with certain FCMs, especially single-use items, which are becoming increasingly common.

Some harmful substances present in FCMs can end up in human bodies through leaching or migrating into food and they can have potential long-term health effects on the nervous, endocrine, and immune systems. Many of these substances can be found in single-use items (e.g. paperboard food packaging) or items made from/coated with plastics, which have countless additives in them to give them specific characteristics.¹

In addition to their potential toxicity, single-use FCMs have a large environmental footprint both due to the materials and chemicals used in their production, as well as the quantities produced. Recycling this waste stream is often unrealistic and uncommon within hospitals - when recycling does occur, the hazardous chemicals present particular challenges for integrating materials back into food packaging and undermine a toxic-free, circular economy.

It is therefore important to strengthen the current EU regulatory framework concerning FCMs and packaging waste, to provide legal certainty on the safety of FCMs, and to promote the sustainable use of these items.²³ Until such regulatory updates are implemented, the healthcare sector can play a key role in protecting patients and workers by phasing out unsafe products and wasteful practices currently permitted by weak legislation or loopholes. Health Care Without Harm (HCWH) Europe encourages the adoption of products that are safe for both human health and the environment.



THIS FACTSHEET AIMS TO

- **Provide healthcare food service providers, procurers, and consumers with an understanding of the health and environmental issues linked to FCMs.**
- **Showcase scalable actions for reducing and preventing the health and environmental risks of FCMs through reducing plastic use from four leading case studies in European healthcare.**
- **Inspire hospitals and healthcare providers to adopt safe circular economy practices using non-toxic and reusable materials in their food services.**
- **Highlight shortcomings in the current European legislative framework related to FCMs and provide recommendations for improvement.**

ENVIRONMENTAL AND HEALTH ISSUES ASSOCIATED WITH FCMs

HEALTH

In 2020 the Food Packaging Forum created a database of food contact chemicals, identifying over 12,200 chemical substances potentially used in the manufacture of FCMs. Whilst 29% had no openly available toxicity data, 608 chemicals were identified as most hazardous,¹ and these chemicals should therefore be prioritised for substitution.⁴

Particularly in plastic FCMs, a wide array of chemical substances are used as additives to achieve desired characteristics including flexibility (softeners and plasticisers), durability against heat or sunlight (stabilisers and antioxidants), colouring, or fillers. Most of these plastic additives can easily leach into the surrounding environment including food.⁵

Many chemical additives are used in paper and board (cardboard) packaging to achieve certain functional properties (strength resins, softeners, dyes and pigments) and these too can migrate into food, as paper and board are permeable materials.⁶ Known endocrine disrupting chemicals (EDCs) such as phthalates and per- and polyfluoroalkyl substances (PFAS) are commonly found in paper and paperboard food packaging, mainly used to prevent paper material from absorbing fats and water.^{7 8}

INERT MATERIALS

Materials often used in reusable FCMs such as glass, stainless steel, and ceramic are less likely to allow chemical migration to food as they are considered to be more inert i.e. stable.⁹

¹ Based on authoritative sources, including the Globally Harmonized System for Classification and Labeling of Chemicals, the identification of chemicals of concern due to endocrine disruption or persistence related hazards, and selected EU- or US-relevant regulatory lists of hazardous chemicals.

FACTORS THAT INCREASE THE RISKS OF CHEMICAL MIGRATION INCLUDE:¹⁰

HIGHER TEMPERATURES

When heated or containing hot food, some FCMs become less stable; plastic in particular can leach harmful chemicals when heated.

LONGER STORAGE TIMES

The longer the contact between food and FCMs, the higher the chances of chemical migration.

SMALLER PACKAGING

Products packaged with a high surface-to-volume ratio (e.g. small condiment sachets or small yoghurt/juice cups) increase the chances of migration.

FATTY AND ACIDIC FOODS

Fatty and acidic foods can interact more with the FCM and increase migration as a result.

EDCs present in FCMs, including bisphenols, phthalates, and PFAS, are of particular concern, they can interfere with hormone production or function and as a consequence affect organ formation and growth, sexual maturation, stress response, and behaviour. There is no consensus on a “safe” or “tolerable” level for EDC exposure – a precautionary approach therefore dictates that these substances should not be present in food contact materials at all. Many FCMs commonly used in healthcare food services, however, contain EDCs and studies have shown that they can migrate from FCMs to food, highlighting the risks that consumers, including vulnerable patients, are exposed to.¹¹



PROBLEMATIC CHEMICALS USED IN FCMs AND THEIR HEALTH HAZARDS

CHEMICAL SUBSTANCE/GROUP	USES IN FOOD CONTACT MATERIALS	HEALTH RISKS
BISPHENOLS	<ul style="list-style-type: none"> Polycarbonate plastic containers including plastic baby bottles Lining food and beverage cans <p>Bisphenol A (BPA) is banned for use in plastic baby bottles in the EU. Products labelled “BPA-free”, however, can contain alternative bisphenols such as bisphenol S or bisphenol F, which are similar in structure to BPA and can have similar negative health effects.¹²</p>	<p>Reproductive effects (erectile dysfunction, miscarriage, infertility), cardiovascular diseases, thyroid, immune and metabolic diseases (diabetes), childhood/general/abdominal obesity, hypertension, neurodevelopment impairments, respiratory conditions, behaviour alterations (anxiety, hyperactivity, depression).^{13 14}</p>
PHTHALATES	<ul style="list-style-type: none"> Used as plasticisers, in items made of polyvinyl chloride (PVC). Paper packaging can also contain phthalates.¹⁵ Other non-PVC food contact materials have also been shown to leach phthalates into food.¹⁶ 	<p>Reproductive toxicity, cancer, insulin resistance and type II diabetes, obesity, allergies and asthma.¹⁷ Phthalates can affect IQ, hyperactivity, and social communication in children,¹⁸ and prenatal phthalate exposures may have neurodevelopmental consequences, damage children’s brain development (leading to attention, learning and behavioural disorders).¹⁹</p>
PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)	<ul style="list-style-type: none"> Grease and water resistant coating on paper and cardboard food packaging. 	<p>Thyroid disease, increased cholesterol levels, liver damage, kidney cancer, testicular cancer, delayed mammary gland development, lower birth weight, reduced response to vaccines.²⁰</p>



Exposure to hazardous chemicals at vulnerable moments of human development i.e. unborn children, newborns/neonates, and infants, is a serious concern - such exposures can alter development with lifelong consequences. Infants and unborn children are at a much higher risk of exposure because of their lower body weight and reduced ability to metabolise chemical substances (compared to adults), as well as the ongoing development of their organs and systems, and their limited diet. Premature babies, who also require many medical interventions, are at an even higher risk.

The chemicals in food contact materials that pregnant or nursing mothers are exposed to can cross the placental barrier and also end up in breast milk. It is therefore also important to limit their exposure for the health of their child. In addition, fat-rich foods increase the risk of chemical migration from packaging, so milk stored and served in plastic bottles therefore poses a further exposure risk to infants.^{21,22} Exposure of babies to microplastics leaching from plastic baby bottles is also an issue of concern.²³





ENVIRONMENT

Many common food contact materials (FCMs) are single-use items. This poses a risk not only due to the hazardous chemicals used in manufacturing, but also the growing environmental consequences of the single-use, throw-away culture.

Single-use FCMs are increasingly used in healthcare food services, raising both the amount of resources needed and waste generated as a consequence.²⁴ One of the most prevalent materials found in single-use FCMs is plastic, which negatively affects the environment at multiple stages of its lifecycle, from oil and gas extraction, to resource-intensive manufacturing through to its end-of-life.²⁵ Waste from FCMs often ends up in landfills or is incinerated (including in waste-to-energy facilities), with a minimal amount being effectively recycled. Incineration and waste-to-energy in particular are problematic, as they generate carbon emissions, as well as toxic gases, such as dioxins, furans, and toxic ashes, which are all detrimental to human health.²⁶

Because of the large quantities produced, waste management systems are not able to cope with the waste in a sustainable manner and huge amounts of waste end up being exported. Data from 2019 shows that the EU exported approximately 150,000 tonnes of plastic waste per month, most commonly to Turkey or to countries in South-East Asia (e.g. Malaysia, Vietnam, Indonesia).²⁷ Recycling cannot be a viable solution without first considerably decreasing the number of items produced and used. While some healthcare facilities are switching to 'bio-based' plastic alternatives, these are not preferable solutions for the environment and the safety of many as FCMs is yet to be confirmed.²⁸ Recent studies also show that bio-based/biodegradable materials present a similar in-vitro toxicity to conventional, fossil-fuel based plastics.²⁹



THE CHALLENGE OF

REMOVING HARMFUL FCMS



WEAK EU REGULATORY FRAMEWORK

FOOD CONTACT MATERIAL REGULATION

The current EU regulation on food contact materials (FCMs) allows potentially hazardous substances to leach or migrate into our food, which can ultimately end up in our bodies. There are a number of concerning weaknesses in the FCM regulation:

- FCMs are not regulated at the EU level in a harmonised way: each Member State sets its own rules and, due to the mutual recognition principle, any FCM produced/sold in the EU can be sold in all Member States.
- There is a lack of transparency and traceability, particularly for consumers and recyclers, on the chemicals used in the production of FCMs.
- Risk assessments carried out by public authorities do not properly consider non-intentionally added substances formed from reaction, degradation of products, and impurities, yet many of these substances migrate into food; recycled materials are not assessed for their adverse health effects either.
- There is no direct link and a lack of consistency with the REACH regulation,ⁱⁱ meaning that chemicals classified as carcinogenic, mutagenic or toxic for reproduction (CMRs) as well as endocrine disrupting chemicals can still be used in food contact materials, including food packaging.

ⁱⁱ The regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is meant to protect human health and environment from any risks posed by chemical substances.

SINGLE-USE PLASTICS (SUP) DIRECTIVE

Plastic is one of the most problematic FCMs because of the additives used and its limited capacity to decompose, and whilst the SUP Directive is an important step in reducing the amount of disposable plastic, including FCMs, there is also a risk of regrettable substitutions that would harm both human health and environment.

Increasingly, healthcare facilities are replacing single-use plastic items in their food services with single-use paper or board, yet this does not necessarily reduce the health and environmental risks. For example, PFAS are often used as a water/grease resistant coating in paper and cardboard products, and paper cups commonly used to replace polystyrene cups (banned under the SUP Directive) contain a plastic coating, which could release microplastics or harmful substances into the beverage.^{30 31}

Under the SUP Directive, single-use plastic cutlery, plates, beverage stirrers, straws (except if needed for medical purposes), and containers made of expanded polystyrene will be banned from July 2021. Food service providers in healthcare have the opportunity to carefully consider replacement materials and extend their ambition beyond the regulation by adopting reusable options made of inert materials such as glass, ceramic, or stainless steel.



CHALLENGES AND BARRIERS IN HEALTHCARE

Healthcare facilities can experience both organisational and logistical challenges when introducing safer and more sustainable FCM options into their food services.

A lack of awareness about the negative health and environmental effects of FCMs can lead to insufficient support from management or staff when replacing FCMs or implementing new systems and products. Another issue is that single-use items appear cheaper, but life-cycle analyses that include the number of uses and waste disposal costs, show that reusable options are cheaper in the long term; in one example (page 20), a hospital achieved cost savings of approximately €93,000 annually. The use of external contractors and limited in-house cleaning facilities, however, can be another challenge when adopting reusable items in the short term.

Another misconception in healthcare is that single-use items are always more hygienic, which has led to an unsustainable increase in single-use products within the sector in recent years, including FCMs (this trend has further accelerated during the COVID-19 pandemic). Growing evidence, however, suggests that surfaces pose a minimal risk of COVID-19 transmission if cleaned properly.^{32 33}

The need for practical take-away options can also present additional logistical challenges, as not everyone can eat on site. The introduction of refill or deposit-return schemes can ease the transition towards reusable alternatives.

REUSABLE OPTIONS ARE CHEAPER IN THE LONG TERM; IN ONE EXAMPLE, A HOSPITAL ACHIEVED COST SAVINGS OF APPROXIMATELY €93,000 ANNUALLY.



CASE STUDIES

TAKING ACTION IN HEALTHCARE

When regulations fall short in protecting our health and environment, the healthcare sector can take the lead by taking action directly. Leading by example, healthcare organisations can also inspire and influence wider change in other sectors. This section provides case studies from four European hospitals that are finding alternatives to unsustainable and unsafe, single-use plastic food contact materials.



FRANCE

REDUCING PREGNANT WOMEN & YOUNG CHILDREN'S EXPOSURE TO PLASTICS

The staff and management of the Maternity Ward of Angoulême Hospital Center (CH Angoulême) in France wanted to reduce vulnerable patients' exposure to harmful substances such as endocrine disrupting chemicals (EDCs). They therefore decided to reduce plastics used in the maternity food services.

MEASURES TAKEN

- Replacing plastic food containers with porcelain or glass alternatives.
- Replacing single-use plastic cutlery with reusable stainless steel alternatives.
- Purchasing and serving products in bulk, such as jam and cereals to reduce individual packaging.
- Started purchasing fruit juice in glass containers.
- Serving water in glass jugs and cups.
- Fruits, bread, and other fresh foods are stored in bulk in wooden, glass, or stainless steel containers.



At the Maternity Ward of CH Angoulême, food packaging and containers made of plastic have been reduced to limit patients' exposure to endocrine disruptors. Fruits, bread, and other fresh foods are stored in bulk in wooden, glass, or stainless steel containers.

One of their main concerns was avoiding the high-risk factor of heating and serving hot food in plastic containers. This was successfully overcome by switching to reusable inert materials for serving the majority of food. Plastic containers are still being used, but only for cold starters and desserts/yoghurts. Their plastic reduction efforts have also continued during the COVID-19 pandemic.

Both staff and patients have declared that they were happy with the changes. The success of this initiative is partly due to the high level of support from hospital management, who want to ensure the health of mothers and babies.

CHALLENGES

The team at CH Angoulême have not yet managed to eliminate all plastic FCMs from the Maternity Ward and items such as locally-made yoghurts are still served in disposable plastic pots. Glass yoghurt pots are used in many parts of Europe, however, which suggests that they can potentially overcome this challenge - they plan to raise this issue with their food service providers.

NEXT STEPS

The Maternity team's next priority is to replace artificial milk bottles made of plastic with glass ones, starting in June 2021. They are reducing orders from suppliers that do not provide glass options to stimulate local markets and reward more sustainable vendors. They are also introducing reusable cloth nappies instead of disposable ones to further reduce infants' exposure to toxic chemicals.³⁴

SPAIN

USING GLASS BOTTLES IN THE MILK BANK, MATERNITY, AND NEONATAL DEPARTMENTS

Approximately 8,150 babies are born at the University Clinical Hospital Virgen de la Arrixaca (UCHVA) annually - 50% of the region's births. To reduce infants' exposure to harmful chemicals leaching from plastic milk containers, as well as reduce the hospital's environmental footprint and their use of plastic, the Maternity Unit at UCHVA are taking steps to use glass containers for storage and serving of milk. In addition, the Paediatric Environmental Health Speciality Unit (PEHSU) has worked to ensure that glass containers are used in their human milk bank.

MEASURES TAKEN

- The Maternity Unit at UCHVA uses reusable glass bottles to give breast milk to neonates. The bottles are washed and sterilised in their own facilities.
- The majority of artificial baby milk (infant formula) is purchased in glass containers.
- The unit's human milk bank only uses glass containers for the pasteurisation and storage of milk. Not only reusable, the containers are produced locally and also support the local economy.



IMPLEMENTATION PROCESS

The PEHSU team conducted extensive research on the environmental and health impacts of plastic containers for milk storage and pasteurisation. In the last decade, they have distributed over 40,000 letters to new parents discharged from the maternity unit, providing information on how to store breast milk and infant food using glass instead of plastic containers.

The PEHSU team has also conducted its own tests demonstrating that plastic containers can change the taste and smell of food - mothers in the maternity unit reported that milk from glass containers had a preferable taste and smell.

In researching the health risks of plastic milk bottles, the PEHSU team published a scientific paper on reducing risk of chemical exposure through breastfeeding.²¹ The PEHSU team presented a SWOT analysis and scientific evidence to the hospital management demonstrating that using plastic bottles in the milk bank posed potential health risks for vulnerable infants from chemical migration, as well as a negative environmental impact. To gain support and executive buy-in from hospital management, the team highlighted that the use of plastic bottles was not in line with their own environmental and breastfeeding policies.

Introducing a glass-only milk bank was an important step towards providing a more sustainable, non-toxic health service at UCHVA. Reducing both exposure to harmful chemicals and single-use plastic waste has improved the quality of care and reinforces the hospital's health and environment policies.





To diminish health and environmental risks, UCHVA is using glass containers for serving and storing milk for infants. The Maternity Unit's human milk bank only uses glass containers for the pasteurisation and storage of milk. Dry heat pasteurisation equipment has been redesigned to be compatible with glass containers, whilst maintaining the same microbiological guarantee.

CHALLENGES

A major challenge, especially when starting the milk bank, was sourcing alternatives as the market was dominated by plastic products and PEHSU's request for glass containers was not initially supported by suppliers, because emerging pasteurisation methods (e.g. dry heat) did not support glass containers. Motivated by PEHSU's initiative, dry heat pasteurisation equipment has been redesigned to be compatible with glass containers, whilst maintaining the same microbiological guarantee.

NEXT STEPS

Plastic milk containers are still used for a minority of applications in the Maternity Unit. Plastic bottles are given to mothers when the baby remains hospitalised so that they can bring breast milk from home to feed the child admitted to the hospital. They are now researching ways in which they could implement reusable glass bottles for this application as well, and establish a deposit return system for them. UCHVA's goal is to use 100% glass for infant milk bottles.

The UCHVA team plans to reduce chemical exposure from plastic products used to store and administer intravenous (IV) solutions in the neonatal and maternity units. The team would like to prioritise replacing the most commonly-used plastic IV products with glass, which can be recycled, helping to improve both health and environment through a reduction of harmful exposures and plastic waste.

UK

REPLACING SINGLE-USE PLASTIC IN PATIENT CATERING

Approximately two million patient meals are served at the Newcastle Upon Tyne Hospitals NHS Foundation Trust every year. One of the Trust's three hospitals had already switched to reusable containers and cutlery in their patient food service, and they wanted to replicate this at the Royal Victoria Infirmary.

The initial purchase of reusable cutlery, bowls, lids, and side plates cost £12,000 (approximately €14,000); the hospital has since achieved annual cost savings of £80,000 (approximately €93,000), recuperating their initial investment after just two months. Energy and water use costs were not calculated, but high savings are still expected even with these costs included.

MEASURES TAKEN

The disposable plastic bowls, plates, and cutlery used for patient meals were replaced with reusable ceramic and stainless steel options. Polypropylene plastic is still used for bowl lids, but they are reusable and contact between food and plastic is limited. In switching to reusables, the hospital has significantly reduced their annual use of single-use plastic items:

- 513,600 polypropylene bowls
- 490,800 polypropylene lids for bowls
- 312,000 polystyrene bowls
- 371,000 plastic spoons
- 216,000 plastic knives





Single-use plastic plates and bowls have been replaced with reusable porcelain containers.

These changes have also improved the patient experience, with patients preferring reusables, as they are more similar to what they are used to at home.

To further incentivise reuse and reduction of plastic on site, the hospital has introduced a 25p discount on hot drinks for customers bringing a reusable cup. They also ran a poster campaign explaining that disposable coffee cups could not be recycled. This raised awareness of the difficulties or misconceptions of recycling, further encouraging reusable options as well as reducing contamination in their recycling streams.

IMPLEMENTATION PROCESS

The hospital worked with its catering suppliers to introduce bowls that could be reused and kept heated. Wards were provided with reusable cutlery and dishes and the ward housekeepers were made responsible for cleaning dishes and cutlery.

To encourage buy-in from the procurement teams, the proposed changes and reasons for reducing plastics were clearly communicated and explained (people are more receptive to change when they understand the reasoning behind it).

NEXT STEPS

The Trust's sustainability team wants to work on their commitment to the NHS Plastic Pledgeⁱⁱⁱ by removing items and finding alternatives if necessary. They plan to work with the food outlets across their hospitals to reduce plastic use.

They are also planning a trial to completely remove single-use coffee cups from staff areas, with a view to scaling this up to include patient and visitor areas, although they anticipate that this will be more challenging.

ⁱⁱⁱ The NHS Plastic Pledge was launched by NHS England and NHS Improvement to encourage Trusts to commit to phasing out unnecessary single-use plastic items used in catering and office spaces.



U K

REDUCING SINGLE-USE PLASTICS IN THE CANTEEN

The sustainability team at the Yorkshire Ambulance Service NHS Trust in the UK has removed approximately 206,000 single pieces of plastic a year from their canteen and reduced their waste by approximately 3.5 tonnes annually. This reduction represents an annual saving of £12,000 (approximately €14,000) in procurement and disposal costs. Plastic reduction plays a major role in both their carbon reduction plans and in safeguarding human health.

MEASURES TAKEN

- The team replaced 8,000 plastic milk bottles per year with glass bottles that can be returned to the supplier and reused. The price per unit remained the same.

- The Trust introduced a deposit return scheme for employees to borrow a mug for a small, refundable deposit of £1. This scheme helps to reduce the 104,000 disposable cups that were previously being used annually.
- Disposable plastic plates were replaced with reusable, washable porcelain plates; plate collection points were installed at various locations to accommodate takeaway meals.
- Plastic cutlery has been replaced with stainless steel, washable alternatives.
- The team installed a water refill point to encourage service users to bring their own container.
- Single-use plastic condiment sachets of ketchup, vinegar, sugar, and salt were replaced with larger, refillable containers. Though still plastic, this has reduced waste and the surface-to-volume ratio is lowered, reducing chemical migration risk.
- They have replaced cardboard packaging in their food deliveries with reusable crates, which are then returned to the supplier.

IMPLEMENTATION PROCESS

The sustainability team conducted a baseline assessment of where plastics were used in their food services and how much was being used. They researched alternatives, opened a dialogue with suppliers, and included a specification for plastic-free packaging in new tenders.

Staff engagement was an important part of the process; the sustainability team organised an event to inform staff where and how plastic is used in their food services as well as its potential toxicity and the alternatives. They engaged the restaurant staff, who were keen to help in reducing the amount of plastic used in the canteen, and produced posters with information on the replacements that had been made and the reasons for the transition away from plastic.

Single-use plastic plates and bowls have been replaced with reusable porcelain containers. Approximately 8,000 plastic milk bottles were replaced with glass bottles that can be returned to the supplier and reused.



CHALLENGES

To date, the Trust has been unsuccessful in finding plastic-free alternatives for sandwich wrappers. They do, however, make sandwiches on the spot, removing the need for plastic packaging if there is no need for takeaway.

Takeaways for other meals remain an issue. They have implemented a plate collection system to allow staff located on site to take away a reusable ceramic plate, which can be collected later in the day by the restaurant staff. For food taken outside the premises they have replaced plastic containers with paper/ cardboard alternatives and cutlery with wooden options. However, they recognise that better alternatives are needed, considering that paper and cardboard are often impregnated or coated with harmful additives and single-use items are not an environmentally friendly solution.

NEXT STEPS

The sustainability team now wants to reduce plastics used in their food deliveries and to continue to explore practical and safe solutions for takeaways.





RECOMMENDATIONS

MOVING FORWARD



REDUCING PLASTIC USE IN HEALTHCARE

MINIMISE SINGLE-USE ITEMS

Although there can be considerable technical challenges in transitioning to safer and more sustainable FCMs in healthcare food services, many hospitals are taking important and valuable steps to minimise the overall use of single-use items in their food services and finding safer, reusable alternatives.

PROTECT VULNERABLE PATIENTS

Infants, young children, pregnant women and their unborn children are especially vulnerable to the harmful chemicals present in FCMs, and early stages of development are critical in ensuring a healthy life. Hospitals and healthcare providers should therefore prioritise maternity, neonatal, and paediatric wards when reducing exposure to harmful chemicals, whilst aiming to reduce the use of unsafe and unsustainable FCMs across all operational departments.

CHOOSE SAFER, INERT REUSABLES

Many single-use FCMs (plastic, cardboard, paper, etc.) are produced with harmful substances and present health risks. These should be replaced with safer, inert, reusable alternatives such as glass, ceramic, or stainless steel; reducing both the risk of chemical migration and waste:

- Map out the FCMs used in your facility and the health and environmental risks they present.
- Replace single-use food and beverage containers such as plastic, paper, or cardboard with reusable alternatives made from inert, safer materials.
- Replace single-use cutlery with reusable metal alternatives.
- Reduce the use of hazardous FCMs (e.g. cans lined with BPA) and opt for bulk or glass solutions in food deliveries.
- Introduce incentives for increasing the use of safe, inert, reusable takeaway materials (e.g. deposit-return schemes, discount for bringing own cup).
- Prioritise the use of inert alternatives to reduce risk factors of chemical migration:
 - Avoid plastic for heating/storing hot food.
 - Avoid small packaging; replace single-use condiment or sauce sachets with larger, reusable containers.
 - Use inert materials for longer storage periods, or storing/serving fatty or acidic foods.

COMMUNICATION AND ENGAGEMENT

- Engage all management, procurement, catering, and healthcare staff in the transition to safer FCMs to help gain buy-in and raise awareness about the health, environmental, and economic benefits.
- Engage with suppliers to discuss your functional and sustainability needs and collaborate to identify more sustainable solutions.
- Make the case: identify the health benefits and environment improvements at stake, and calculate the potential for cost savings (particularly important if expenditure is required).

Take a gradual approach to implementing change, keeping in mind the increased risk factors for chemical migration (high temperatures, long storage times, smaller packaging and fatty/acidic foods) and impact on the most vulnerable patients. Begin by replacing specific items, within specific patient areas.



EU POLICY RECOMMENDATIONS

The EU's FCM laws are outdated and ineffective in protecting both people and the environment, particularly in relation to hazardous substances that are known endocrine disrupting chemicals (EDCs). A new regulatory framework for FCMs is needed and the existing FCM legislation should be revised, as suggested in Health Care Without Harm Europe's feedback to the European Commission on the revision of EU rules on FCMs.³⁵

HARMONISE RULES FOR ALL MATERIALS

Chemicals in most FCMs, such as paper, cardboard, and bamboo are not regulated at the EU level in a harmonised way. Member States set their own rules and, due to the mutual recognition principle, a FCM sold in one country with less strict regulatory requirements can be sold in all other Member States. This leads to differing levels of protection across the EU and inconsistent enforcement of FCM rules (both at EU and national level).

BAN THE MOST HAZARDOUS CHEMICALS

Many of the 12,000 chemicals used in the global production of FCMs (over 8,000 in Europe) have not been adequately tested for toxicity.³⁶ New regulations on FCMs should be fully consistent with REACH and other EU regulations related to products and waste, and prohibit the use of hazardous chemicals in FCMs. Good examples can be found in Denmark, which banned the use of PFAS in food packaging in 2019, or France, which banned bisphenol A (BPA) in FCMs in 2015.^{37 38} To avoid regrettable substitutions, restrictions and bans should address structurally similar chemicals in groups.

FOCUS ON MIGRATION FROM FINAL ARTICLES

Current rules and risk assessments do not properly consider non-intentionally added substances (NIAS) – by-products and impurities from the production process. The European Commission therefore needs to:

- Create an effective and resilient system that does not rely on industry self-regulation.
- Enforce stronger assessment of NIAS and the combined effects of exposure to chemicals from multiple sources on human health.

CREATE AN OPEN AND TRANSPARENT PROCESS

Poor transparency on the presence of chemical substances within products and food packaging, as well as a lack of traceability of those chemicals along the supply chain, is a significant problem. By reforming the FCM legislation and developing a new, open, and transparent approach, the European Commission can ensure consistency with other policies related to chemicals, food, products and packaging.

Europe needs a coherent approach that considers both the safety and the sustainability of FCMs, encouraging the use of inert and reusable FCMs. These health and sustainability recommendations should be considered in single-use plastic regulation, to be consistent with FCM regulations and to prevent the adoption of regrettable alternatives when phasing out single-use plastics.

CLOSING REMARKS

In spite of the weak regulatory framework, European healthcare providers can lead by example and take action to significantly reduce harmful chemical exposures for their patients, staff, and visitors. Healthcare facilities and health systems can also mitigate their environmental footprint of waste and emissions by reducing the use of disposable food contact materials, replacing these with products that are safe for both human health and the environment.

THE HEALTHCARE SECTOR CAN SUPPORT NEW SUSTAINABLE BUSINESS MODELS AS WELL AS INNOVATIVE SOLUTIONS AND POLICIES FOR FCMs, BASED ON A CIRCULAR USE OF SAFER MATERIALS.



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