Chronic liver disease in Europe

Assessing Europe's policy readiness to confront the MASLD/MASH public health threat

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Abbreviations: AASLD, American Association for the Study of Liver Diseases; APASL, Asian Pacific Association for the Study of the Liver; CI, Confidence interval; CLD, Chronic liver disease; CPG, Clinical practice guideline; CVD, Cardiovascular disease; EASD, European Association for the Study of Diabetes; EASL, European Association for the Study of the Liver; EASO, European Association for the Study of Obesity; ELF, Enhanced Liver Fibrosis; ESLD, End-stage liver disease; EU, European Union; FIB-4, Fibrosis-4; GBD, Global Burden of Disease; GI, Gastrointestinal; HCC, Hepatocellular carcinoma; HFSS, High fat, sugar, and/or salt; HLM, High-Level Meeting; iLFT, Intelligent liver function testing; MASH, Metabolic dysfunction-associated steatohepatitis; MASLD, Metabolic dysfunction-associated steatotic liver disease; MetALD, Metabolic dysfunction- and alcohol-associated liver disease; NAFLD, Non-alcoholic fatty liver disease; NCD, Non-communicable disease; NGO, Non-governmental organisation; NIT, Non-invasive test; SDGs, Sustainable Development Goals; SLD, Steatotic liver disease; SOLDA, Society on Liver Disease in Africa; T2D, Type 2 diabetes; UK, United Kingdom; UNGA, United Nations General Assembly; UPF, Ultra-processed food; WHO, World Health Organisation

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Summary

Metabolic dysfunction-associated steatotic liver disease (MASLD) is a public health threat in Europe. With an estimated 30.4% prevalence among the adult population in the European Union and United Kingdom, it is the most common chronic liver disease and is closely linked to obesity and type 2 diabetes, which can be considered as indicator conditions. Despite the scale of the burden, the spectrum of MASLD, including its advanced form, metabolic dysfunction-associated steatohepatitis (MASH), is weakly represented—or even absent—from health policy and development agendas. Further, the extent to which regional and national clinical practice guidelines (CPGs) on other liver diseases and related fields incorporate information on MASLD/MASH prevention or management is unclear. In this Series paper, we reviewed policy attention to MASLD/MASH across the European Union and the United Kingdom. We report low policy readiness across European countries to address MASLD/MASH. Only two (7.1%), Romania and Sweden, had a subnational strategy, while 13 (46.4%) referenced MASLD/MASH in other national or subnational action plans, predominantly those for liver disease and obesity. No country included MASLD/MASH in its priority non-communicable disease list. Additionally, 15 (53.6%) countries had national MASLD/MASH CPGs, while 25 (89.3%) mentioned MASLD/MASH in other national CPGs, most often those for obesity, diabetes, cirrhosis, liver transplantation, and primary care, respectively. We conclude that MASLD/MASH remains insufficiently addressed from a policy perspective, which contributes to low readiness to address this public health threat.

Keywords: Food policy; Health policy; Health systems; Liver health; Non-communicable diseases; Obesity; Steatotic liver disease; Type 2 diabetes

Introduction

Metabolic dysfunction-associated steatotic liver disease (MASLD, formerly non-alcoholic fatty liver disease [NAFLD]) is the most common cause of chronic liver disease (CLD) in Europe and globally.[1–3] It is closely linked to and shares risk factors with obesity, type 2

Key messages

- The 27 European Union countries and the United Kingdom have low policy readiness to address metabolic dysfunction-associated steatotic liver disease (MASLD), and its advanced form, metabolic dysfunction-associated steatohepatitis (MASH), despite their high economic burden and MASLD being the most prevalent chronic liver disease across the region and strongly linked to indicator conditions like obesity and type 2 diabetes.
- Inclusion of MASLD/MASH in speciality-specific clinical practice guidelines (CPGs), such as endocrinology and cardiovascular disease, remains low across countries.
- Compared with obesity and diabetes policy, MASLD/MASH continues to be under-recognised, limiting opportunities for resource allocation, timely detection, and coordinated care.
- A meta-analysis was conducted with an estimated MASLD prevalence of 30.4% (95% CI: 21.7%–39.8%) among the adult population in the 28 countries included in this Series paper.
- Actionable MASLD/MASH policy gaps include the need to strengthen national strategies, CPGs, and non-communicable disease (NCD) frameworks, invest in surveillance and risk stratification, and develop multidisciplinary care pathways.
- Rapid advances in MASLD/MASH evidence generation and management innovation require policy developments that account for multimorbidity, surveillance, primary care detection algorithms, CPGs, and multidisciplinary pathways.
- Without sustained political and system-level attention, countries face late MASLD/MASH diagnosis, fragmented care, rising healthcare costs, and widening inequities related to advanced liver and cardiometabolic disease, all of which contribute to poorer health outcomes.
- Future research should map national barriers for and enablers of change, better determine the MASLD/MASH human and economic burden, and support countries in leveraging innovation to improve outcomes along the continuum of care from prevention to treatment.

diabetes (T2D), and cardiovascular disease (CVD), thus requiring multidisciplinary management.[2–5] An estimated 32.4% (95% confidence interval [CI] 29.9–34.9%) of adults globally are living with MASLD[6] and 5.3% (standard error 2.6%) with its advanced form,[5] metabolic dysfunction-associated steatohepatitis (MASH, formerly non-alcoholic steatohepatitis),[1] with these conditions being much more prevalent among individuals living with obesity or T2D.[2,3] In 2023, the prevalence of MASLD among people living with overweight or obesity was estimated to be at 42.5% (95% CI: 32.6–53.1%) and that of MASH at 33.5% (95% CI: 28.4–39.0%),[6] while among people living with T2D the prevalence of MASLD was estimated to be 65.0% (95% CI: 61.8–68.2%) and that of MASH 31.6% (95% CI: 17.1–50.7%).[7] The burden of the spectrum of MASLD, including MASH,[1,5] along with concomitant liver fibrosis, continues to increase, with marked geographic variations, in the absence of expanded access to prevention and treatment, being projected.[8,9] Around 3% of people living with non-cirrhotic MASLD will experience progression to cirrhosis or end-stage liver disease (ESLD) within 15–20 years, from the point of diagnosis.[10]

MASLD/MASH has a substantial impact in Europe, with it being the second leading cause for ESLD and liver transplantation.[11] Similar to other highly prevalent NCDs its economic burden is also high in European countries,[12–14] with the direct annual medical costs of MASH (resources and unit costs were identified by health state using public reimbursement schedules and private hospital data, with blended costs reflecting public-private payer mixes), from 2021 to 2040, being estimated to increase from 0.83 billion United States (US) dollars ($) to $1.8 billion (euros [€] 0.7–1.6 billion), in Germany, $1.3 to $2.9 billion (€1.1–2.5 billion) in France, $1.3 to $3.0 billion (€1.1–2.6 billion) in Italy, $1.5 to $3.5 billion (€1.3–2.9 billion) in Spain, and $2.2 to $5.3 billion (€1.9–4.5 billion) in the United Kingdom (UK). This estimation was made taking into account inflation rates (the amounts in US dollars were converted into local currencies using OANDA Corporate, based on the exchange rate on the paper's acceptance date of 8 September 2025).[12,13]

Despite its prevalence, MASLD/MASH remains under-recognised and poorly addressed in health policy and health system responses. A 2022 review of 102 countries, including 29 from Europe, found that none had a dedicated MASLD/MASH strategy.[15] Furthermore, key frameworks, including the World Health Organisation (WHO) best buys (i.e., evidence-based interventions, that are the most cost-effective and feasible to implement) and WHO quick buys (i.e., evidence-based and the most cost-effective interventions with measurable public health impacts within five years of implementation) for non-communicable disease (NCD) prevention omit liver disease completely.[16,17]

Nonetheless, some progress has been made in improving MASLD recognition. The Political Declaration of the fourth United Nations General Assembly (UNGA) High-Level Meeting (HLM) on NCDs (held in September 2025) adopted the preventive hepatology approach[18,19] by explicitly naming MASLD (though the

outdated NAFLD nomenclature was used) as an integral part of liver cancer prevention.[19] In January 2026, the World Economic Forum highlighted MASLD as a major manifestation of poor metabolic health and a condition closely linked to insulin resistance, chronic inflammation, cardiovascular disease, and chronic kidney disease and a potential indicator to be included in metabolic health policy.[20] The following month, a draft resolution of the WHO Executive Board recommended integrating SLD (including MASLD) into the global NCD agenda by embedding its prevention, early detection, management, surveillance and research within national health systems, universal health coverage, and multisectoral action on shared cardiometabolic and alcohol-related risk factors, with WHO to provide technical leadership, coordination and measures for accountability.[21] Moreover, clinical practice guidelines (CPGs), including those of the American Diabetes Association and European Association for the Study of Obesity (EASO), now emphasise the need for integrated care.[22,23]

Rapid advancements are also being made with regard to non-invasive tests (NITs), including imaging techniques, serum biomarkers, and automated algorithms like the intelligent liver function testing (iLFT) pathway, to improve MASLD/MASH detection and risk stratification.[24] Furthermore, the approval of resmetirom and semaglutide by the US Food and Drug Administration in 2024 and 2025, respectively,[25,26] and of resmetirom and semaglutide by the European Medicines Agency in 2025, represent groundbreaking pharmacological progress, as these are the first-ever specific therapies for people living with non-cirrhotic MASH.[27] Alongside pharmacotherapy, mounting evidence around the importance of structured lifestyle interventions that promote physical activity reduced or no alcohol use and weight management reinforces their central role in MASLD/MASH care.[28,29] Collectively, these developments mark a paradigm shift: MASLD, which is reversible, is now manageable through evidence-based prevention and treatment, with these being facilitated by policy interventions.[30,31] In this Series paper, we report the prevalence of MASLD in Europe and assess the policy readiness (i.e., the extent to which countries have established the foundational policy architecture and clinical guidance needed to enable action) to address the disease in relevant national policies.

Limited national policies on MASLD/MASH in Europe

Following our search and review (Panel 1), across the European Union (EU) and the UK, no country has a government-issued strategy or action plan, although Spain and the UK have national action plans published by non-state actors (a medical association and an NGO, respectively). Two (7.1%) countries have subnational MASLD/MASH strategies or action plans issued by governmental bodies and 15 (53.6%) have national MASLD/MASH CPGs (Panel 2). Although 13 (46.4%) countries referenced MASLD/MASH in other national or subnational strategies or action plans, these mentions were typically superficial and embedded within broader obesity, liver disease, diabetes, or healthy lifestyle strategies or action plans rather than constituting operational MASLD/

***Panel 1*: MASLD/MASH policies of European Union countries and the United Kingdom**

MASLD/MASH strategies and action plans

Of the all European countries reviewed (n = 28), none had a national metabolic dysfunction-associated steatotic liver disease/metabolic dysfunction-associated steatohepatitis (MASLD/MASH) strategy or action plan issued by a government body, while two (7.1%) had a subnational MASLD/MASH strategy or action plan (Romania and Sweden). Thirteen (46,4%) countries had at least one national or subnational strategy or action plan (on alcohol, cancer, cardiovascular disease [CVD], diabetes, healthy lifestyle/diet, liver disease, NCDs, obesity, or others) in which MASLD/MASH was mentioned; among these, obesity (n = 10 out of 28 countries, 35.7%), followed by liver disease (n = 8 out of 28 countries, 28.6%) and diabetes (n = 7 out of 28 countries, 25%) documents mentioned MASLD/MASH most frequently (Table 1, Fig. 1, Table S3). Italy and Luxembourg had the highest number (n = 5) of national or subnational strategies or action plans, on diabetes, healthy lifestyle/diet, liver disease, obesity, and others mentioning MASLD/MASH (Table 1). MASLD/MASH was not included in the priority NCD list of any country (Table 2, Table S4).

MASLD/MASH clinical practice guidelines

Fifteen countries (53.6%) had national MASLD/MASH CPGs. In those and the remaining countries, the European Association for the Study of the Liver–European Association for the Study of Diabetes–European Association for the Study of Obesity (EASL-EASD-EASO) MASLD CPG was commonly used.[2] Twenty five (89.3%) countries had at least one national CPG (on alcohol, CVD, diabetes, dyslipidaemia, end-stage liver disease [ESLD]/cirrhosis, hypertension, liver cancer, liver transplantation, obesity, primary care, and others) mentioning MASLD/MASH. Nineteen of 22 obesity CPGs (86.4%) included MASLD/MASH; this trend was followed by diabetes (n = 12 out of 26, 46.2%), ESLD/cirrhosis (n = 11 out of 14, 78.6%), liver transplantation and liver cancer (n = 7 out of 12, 58.3%, n = 7 out of 13, 53.8%, respectively), and primary care (n = 6 out of 12, 50%) (Table 2, Fig. 2).

Countries	National MASLD/MASH strategy or action plan	Subnational MASLD/MASH strategy or action plan	MASLD/MASH mentioned in other national or subnational strategies or action plans									Priority NCD list includes MASLD/MASH
			Alcohol	Cancer	CVD	Diabetes	Healthy lifestyle/diet	Liver disease	NCDs	Obesity	Other	
Austria						■		■		■		
Belgium												
Bulgaria												
Croatia							■			■		
Cyprus												
Czechia												
Denmark												
Estonia												
Finland												
France												
Germany												
Greece												
Hungary												
Ireland												
Italy						■	■	■		■	■	
Latvia						■						
Lithuania												
Luxembourg			■	■	■		■	■				
Malta												
Netherlands												
Poland							■	■		■		
Portugal							■	■		■		
Romania		■				■						
Slovakia						■				■		
Slovenia						■				■		
Spain								■		■		
Sweden		■						■		■		
United Kingdom			■			■		■		■		
Total, n (%) [§]	0	2 (7.1)	2 (7.1)	1 (3.6)	1 (3.6)	7 (25.0)	5 (17.9)	8 (28.6)	0	10 (35.7)	1 (3.6)	0

Abbreviations: CVD, cardiovascular disease; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease; NCD, non-communicable disease. *Colour legend:* blue = exists; white = absent. [§]The denominator for all calculations within this table is the number of countries that responded (n = 28).

Table 1: **MASLD/MASH included in priority NCD list and national or subnational strategies or action plans on or that mention MASLD/MASH.**

MASH policies. As a result, existing strategies rarely translate into actionable measures for prevention, timely detection, or integrated care, underscoring the absence of coherent, system-level planning to address MASLD/MASH across the EU and the UK. Similarly, although MASLD/MASH is included in T2D, obesity, and HIV CPGs at the European level,[2,36] there is a lack of recommendations to prevent and manage MASLD/MASH at the population level across the region. Furthermore, said CPGs do not currently recommend MASLD/MASH management from a multidisciplinary perspective and, in many cases, CPGs of related conditions (e.g., obesity, T2D) only mention MASLD/MASH as a complication of the condition instead of addressing their co-management (Panel 2).

Current European MASLD clinical practice guidelines recommend stepwise risk stratification using simple, low-cost, and widely available serum-based non-invasive tests (such as the Fibrosis-4 [FIB-4] Index) as first-line tools in primary care, with sequential testing using more advanced biomarkers or imaging modalities reserved for individuals found to be at higher risk,[2] underscoring that diagnostic pathways are clearly established even if their operationalisation in policy may vary by health system. CPG reforms could include testing people living with indicator conditions like T2D and obesity (See the GBD and World Obesity Federation [WOF] prevalence estimates of both indicator conditions in Table S5) with the current second line tests as they are more accurate than the FIB-4; the incorporation of liver-health specific dietary recommendations into European nutrition policies; enhanced preventive measures for MASLD/MASH and other metabolic disorders with shared risk factors as part of national and EU policy; and/or the establishment of cardiometabolic clinical guidelines that assess concurrent health risks.[37]

Misalignment between the epidemiological burden and policy response

Available epidemiological estimates underscore the urgency of integrating MASLD into health system priorities. For example, the 2023 Global Burden of Disease (GBD) study prevalence estimates for MASLD (referred to as the "total burden related to non-alcoholic fatty liver disease (NAFLD)") within Europe range from 11.9% in Denmark to 22.4% in Italy (See GBD prevalence

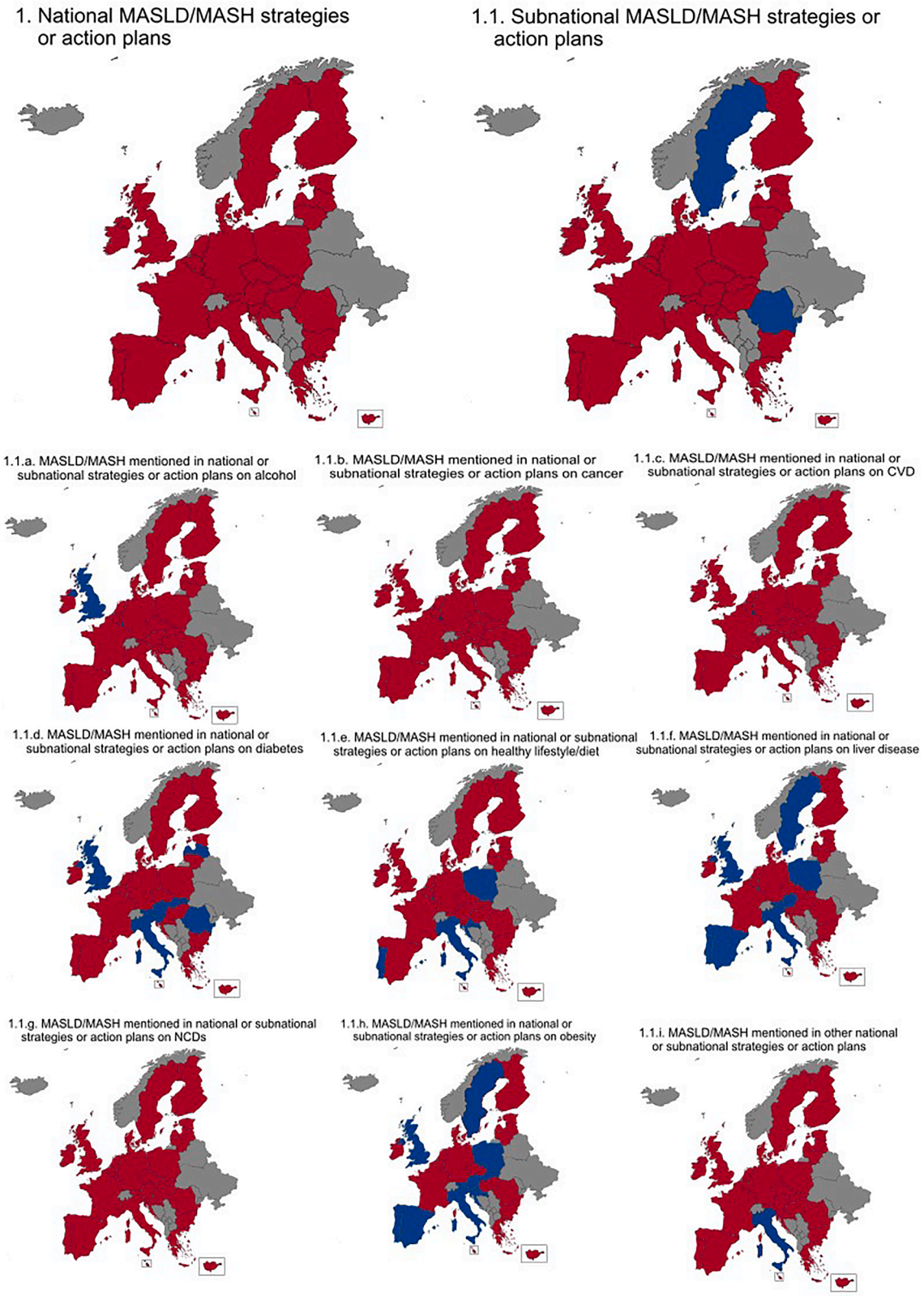

Fig. 1: **Map of national or subnational strategies or action plans on or that mention MASLD/MASH.** *Colour legend:* blue = exists; red = absent; grey = no response.

Countries	National MASLD/MASH CPG	CPGs for other fields and their mention of MASLD/MASH																					
		Alcohol		CVD		Diabetes		Dyslipidaemia		ESLD/cirrhosis		Hypertension		Liver cancer		Liver transplantation		Obesity		Other		Primary care	
		CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH	CPGs	MASLD/MASH
Austria																							
Belgium																							
Bulgaria																							
Croatia																							
Cyprus																							
Czechia																							
Denmark																							
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Poland																							
Portugal																							
Romania																							
Slovakia																							
Slovenia																							
Spain																							
Sweden																							
United Kingdom																							
Total, n (%) [§]	15 (53.6)	15 (53.6)	2 (7.1)	20 (71.4)	4 (14.3)	26 (92.9)	12 (42.9)	14 (50.0)	4 (14.3)	14 (50.0)	11 (39.3)	22 (78.6)	3 (10.7)	13 (46.4)	7 (25.0)	12 (42.9)	7 (25.0)	22 (78.6)	19 (67.9)	5 (17.9)	1 (3.6)	13 (46.4)	6 (21.4)

Abbreviations: CPG, clinical practice guideline; CVD, cardiovascular disease; ESLD, end-stage liver disease; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease. *Colour legend:* blue = exists; white = absent. [§]The denominator for all calculations within this table is the number of countries that responded (n = 28).

Table 2: **National clinical practice guidelines on MASLD/MASH or other fields and their mention of MASLD/MASH.**

estimates for each country in Table S5)[38]; these figures are markedly lower than the 30.4% prevalence estimated for the European countries included in this study (EU + UK) (Panel 3). These estimated differences likely reflect variation in case ascertainment and modelling assumptions between GBD[39] and real-world epidemiological studies. GBD non-fatal estimates for NAFLD (i.e., MASLD) rely on heterogeneous and often sparse primary data synthesised using hierarchical models, with conservative inclusion decisions and, in data-limited settings, indirect estimation based on metabolic risk factor covariates; by contrast, many population-based and clinical studies use active case detection with liver imaging or biomarker-based assessment, capturing more asymptomatic and undiagnosed disease that is not reflected in routine health data.[40,41] Consequently, although GBD likely underrepresents the true global prevalence and burden of MASLD, particularly in regions where population-based liver imaging data are scarce, the estimates are still very high, warranting decisive policy action.

The limited recognition of MASLD/MASH in national policies in the EU and UK may partly explain the low uptake of screening and active case-finding efforts across Europe,[15,42] despite its high prevalence. Yet, early MASLD/MASH detection enables timely risk stratification and treatment, improving the likelihood of reversing steatosis or MASH and reducing progression to advanced fibrosis and hepatocellular carcinoma (HCC).[43] To this end, the European Association for the Study of the Liver (EASL)-European Association for the Study of Diabetes (EASD)-EASO MASLD CPGs have explicit recommendations to screen for MASLD with liver fibrosis using NITs in individuals living with cardiometabolic risk factors, especially in those who have abnormal liver enzymes and/or imaging evidence of steatosis, and particularly in the presence of indicator conditions like T2D or obesity, plus additional metabolic risk factors.[2]

In stark contrast to MASLD/MASH, other NCDs such as T2D, CVD, obesity, and cancer have achieved far greater policy attention and integration within EU frameworks.[14,44–47] These conditions are typically featured in overarching NCD strategies, prevention programmes, and screening initiatives, often supported by dedicated funding and surveillance systems. For instance, T2D and CVD are consistently prioritised through EU-level action plans emphasising early detection, integrated care, and population-level interventions targeting modifiable risk factors such as diet, physical activity, and alcohol use. Similarly, cancer has benefitted from robust EU initiatives such as Europe's Beating Cancer Plan, which allocates substantial resources to prevention, screening, and research.[47]

Gaps in non-communicable disease prevention and nutrition and physical activity initiatives

The Political Declaration of the fourth UNGA HLM on NCDs underscores persistent gaps in NCD prevention, noting that commitments on prevention and fiscal measures remain weakened, with limited mechanisms for accountability and monitoring.[18,48] These global governance shortcomings mirror the absence of MASLD/MASH within European dietary and NCD

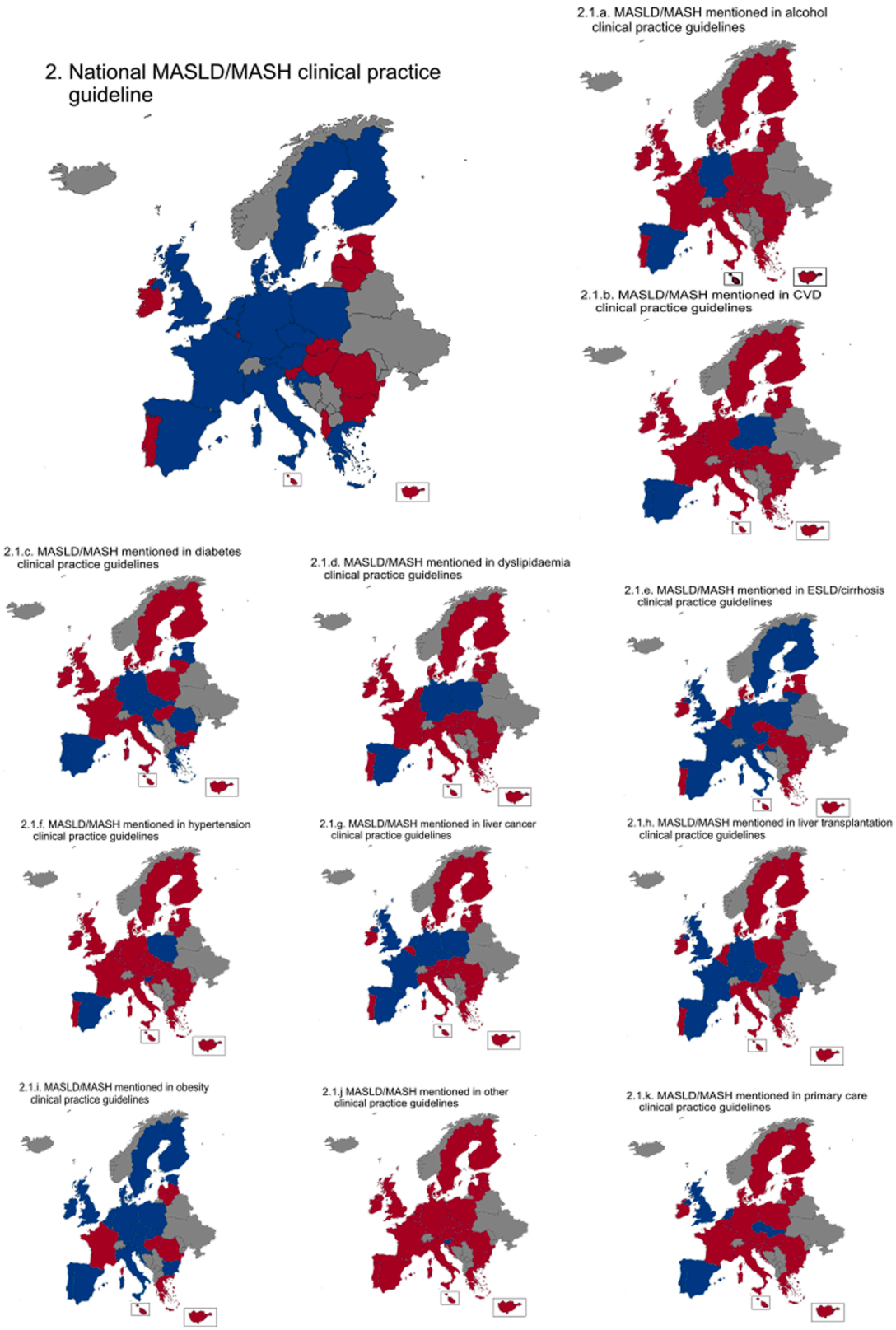

Fig. 2: **Map of national clinical practice guidelines on MASLD/MASH or other fields that mention MASLD/MASH.** *Colour legend:* blue = exists; red = absent; grey = no response.

Panel 2: MASLD prevalence in Europe

We conducted a meta-analysis of 18 studies and calculated a pooled MASLD prevalence of 30.4% (95% CI: 21.7%–39.8%), which lies within the range of prior European meta-analyses. This estimate updates the three most recent European meta-analyses. Riazi et al. (2022) (6 studies; 4 countries; publication range: 2002–2015) reported a slightly higher estimate of 32.6% (95% CI: 24.5%–40.6%), derived largely from earlier cohorts and fewer countries.[6] In contrast, Younossi et al. (2023) (13 studies; 8 EU countries plus the UK; 2005–2021)[33] estimated a lower prevalence of 25.1% (95% CI: 20.55%–30.28%) in Western Europe. The lowest prevalence estimate comes from Cholongitas et al. (2021),[34] who analysed eight European (EU + UK) countries and reported 21.8% (95% CI: 19.2%–24.6%) but only among individuals without diabetes mellitus, underscoring the impact of metabolic risk enrichment on prevalence.

The Duval and Tweedie trim-and-fill[35] procedure was applied as a sensitivity analysis to assess the robustness of the pooled estimate under the observed funnel plot asymmetry by imputing the number and values of theoretically "missing" studies required to restore symmetry (Supplemental Methods S1). The method imputed three additional studies (18–21), increasing the Freeman–Tukey theta from 1.168 to 1.280 and yielding an adjusted prevalence of 36.4% (95% CI: 26.5%–47.1%) after back-transformation, compared with the observed 30.4% (95% CI: 21.7%–39.8%). This upward shift suggests that a small number of low-prevalence studies may be pulling the pooled estimate downward, although given the extreme heterogeneity ($I^2 \approx 100\%$), the adjusted figure should be interpreted as an upper-bound sensitivity scenario rather than a bias-corrected continental estimate.

frameworks, reinforcing how system-wide neglect of emerging NCDs delays their integration into prevention policies. A review of the European Food Based Dietary Guidelines, compiled by the European Commission's Joint Research Centre,[46] WHO regional databases,[49] and the EU Health Policy platform (on nutrition and physical activity),[50] indicates that current dietary recommendations focus on preventing cancer, CVD, respiratory diseases, and T2D, without specifically addressing MASLD/MASH. However, recent CPGs are beginning to bridge this gap in MASLD/MASH recognition. The European Society of Cardiology CPGs for the management of CVD in patients living with diabetes[51] briefly refer to fatty liver, acknowledging that people living with steatotic liver disease (SLD) are at increased risk of developing T2D. Similarly, the 2022 WHO European Regional Obesity Report[52] mentions NAFLD, describing it as the fastest-growing obesity-related NCD. The European Society for Clinical Nutrition and Metabolism CPGs on nutrition in liver disease[53] also incorporate NAFLD, and more recently, the 2024 EASL-EASD-EASO MASLD CPGs[2] recommend non-pharmacological interventions for MASLD management, highlighting dietary patterns such as the Mediterranean diet and encouraging the consumption of unprocessed/minimally processed foods and discouraging ultra-processed food (UPF, rich in sugars and saturated fat) and sugar-sweetened beverage (SSB) intake. In this context, stronger implementation of fiscal measures is warranted, as the WHO's 2025 Global Report on SSB taxes shows that despite growing global uptake, SSB taxes in Europe remain uneven, low in magnitude, and often poorly designed, limiting their effectiveness in reducing affordability and kerbing sugar intake as part of NCD and diet-related disease prevention strategies.[54]

Although the EASL-EASD-EASO nutrition recommendations are broadly consistent with general European dietary guidance for NCD prevention, MASLD/MASH remains absent from population-level European food-based dietary guidelines and this should be remedied.[55] While gains in NCD prevention have lagged, a trend that may help to explain why MASLD/MASH has not been systematically reflected in policy, since the year 2000 infectious disease indicators have driven improvements in service coverage globally.[56] The omission of MASLD/MASH from all integrated NCD strategies in the EU and UK represents a missed opportunity to leverage existing infrastructures and policy synergies that could facilitate earlier diagnosis and management. However, deep inequities in unmet needs across European countries demonstrate that access gaps in essential NCD services persist despite overall health system strength,[56] underscoring that MASLD/MASH integration cannot rely solely on clinical recognition; rather, it requires addressing systemic access barriers that disproportionately affect populations already underserved in metabolic care, and explicitly incorporating the full spectrum of SLD into universal health coverage benefit packages.[4] Endorsement by clinical and scientific societies of population-level nutrition policies, such as front-of-pack labelling and restrictions on marketing of ultra-processed foods, can translate dietary guidance into effective prevention and counter narratives promoted by commercial actors.

European countries have also taken some action to promote physical activity, but overall policy design is weak, with most countries focussing on schools, public

communication campaigns, and workplaces while failing to implement strong, structural policies in the built environment, transportation system, and healthcare, which remain the biggest gaps to creating truly enabling active environments.[57,58]

Urban planning and transport policies are increasingly recognised as upstream determinants of physical activity and, consequently, metabolic and liver health.[59] Built-environment features such as safe walking and cycling infrastructure, mixed-use neighbourhoods, access to green space, and reliable public transport are consistently associated with higher levels of routine physical activity across diverse urban contexts.[59] At the population level, active transport policies have been shown to generate substantial health benefits, including reductions in non-communicable disease risk, premature mortality, and environmental exposures, reinforcing their relevance as public health interventions.[60] These approaches are particularly pertinent for MASLD/MASH prevention, given robust evidence that regular physical activity improves insulin sensitivity and reduces hepatic steatosis.[61]

Systemic and structural barriers to MASLD/MASH policy integration

Despite growing recognition of MASLD/MASH as a major public health challenge, policy responses in Europe remain limited and fragmented. MASLD/MASH exposes the weaknesses of today's health systems which were previously organised around organ- or disease-specific specialities rather than within integrated, patient-centred care. One of the most persistent challenges to comprehensive MASLD/MASH policy implementation in Europe is the structural divide between hepatology and metabolic care. Historically, liver diseases have been managed within hepatology or gastroenterology units, while diabetes or obesity have fallen under endocrinology or internal medicine.[2,61] The absence of holistic, multidisciplinary care models has led to a fragmented division of responsibilities, resulting in siloed clinical pathways and a disjointed care experience. Other examples of how this liver-metabolic divide jeopardises the integrated and person-centred care of MASLD include the predominant lack of training on metabolic care amongst liver disease specialists and the insufficient knowledge about how to approach fibrosis and the risk of hepatic complications amongst endocrinologists and other specialists of closely related comorbidities such as cardiology, as well as the siloed pathways to access novel drugs for the treatment of obesity or diabetes that might have beneficial impacts on MASLD/MASH, including via clinical trials.[62,63] Primary care physicians, who are often people's first point of contact within the healthcare system,[61] may be unaware of the new SLD terminology[51] and not have clear guidance on when to refer patients for a liver assessment, nor access to NITs that could facilitate risk stratification. This fragmentation hinders multidisciplinary management and limits the scalability of cost-effective approaches to MASLD/MASH prevention, timely detection, and treatment. Moreover, with pharmacological treatments for MASH now becoming available in Europe, health systems must prepare by strengthening diagnostic and treatment monitoring capacity, establishing more robust care pathways, and increasing equitable access to the entire MASLD continuum of care.[64] Changes from a policy perspective should start at the backbone, namely training. For instance, all life sciences' students should learn how to approach metabolic disturbances in a holistic way early on in their degrees, and standardised training on liver fibrosis should be implemented in endocrinology programs. Moreover, policy can shape the way referrals from primary care and the community are done and, therefore, the requirements from multidisciplinary assessment including HCPs from both the metabolic and liver spheres up to highly specialised care at the hospital level.

The gaps are not only in awareness and screening but also in the structural organisation of health systems and the influence of the commercial interests that shape the policy environment. No country mentioned the deleterious impact of co-existent metabolic risk factors now known as metabolic dysfunction- and alcohol-associated liver disease (MetALD),[1] reflecting a policy incoherence that weakens MASLD/MASH prevention (Panel 2). WHO's 2025 Global Report on the Use of Alcohol Taxes shows that, across Europe, alcohol excise taxes remain too low, unevenly applied, and frequently exempt key products such as wine, limiting their effectiveness.[65] Although this paper focuses on MASLD/MASH, updated nomenclature highlights MetALD as part of the broader SLD spectrum. From a policy perspective, MetALD underscores the lack of coherence between MASLD and alcohol policies, which continue to operate in parallel despite overlapping risk profiles. Aligning these frameworks, for example by recognising alcohol as a disease-modifying factor in MASLD strategies and metabolic vulnerability in alcohol policies, could improve prevention, risk stratification, and care coordination. Furthermore, during negotiations on updated alcohol labelling and consumer protection regulations, the European Parliament reaffirmed the need to maintain the term "reduced-alcohol" in its labelling policies and rejected the inaccurate and misleading alternative term "low-alcohol", which could obscure health risks and undermine EU prevention strategies.[66] This stance also emphasises the need for coherence with the forthcoming EU Cardiovascular Health Plan,[67] where clear risk communication around alcohol will be essential. Yet, the SLD spectrum remains absent from these efforts, including the EU Healthier Together - EU Non-communicable Diseases

Initiative, which is aligned with WHO priority NCDs. It has only one mention of a former term for SLD, "fatty liver disease," noting that it "could be related to the selected NCDs" and one mention of "liver disease" more generally, but only in the context of alcohol use,[68] reflecting a broader failure to fully align cardiovascular-kidney-metabolic syndrome prevention with other NCD strategies.[63] This should be remedied by state actors and their regional and global bodies by including MASLD/MASH in national, European and global policies "asks", including the milestones and success indicators set out in Fig. 3.

Similarly, fiscal and regulatory measures to kerb consumption of two major commercial determinants of poor metabolic health, sugar and UPF,[69] are unevenly implemented, with some countries adopting soft voluntary codes rather than binding regulations and the EU not mentioning UPF in their Healthier Together Initiative.[68,70] Industry actors actively work to weaken or block the adoption of effective nutrition and advertising regulations through lobbying, policy design, the casting of scientific doubt, the promotion of weak voluntary governance models, and even the intimidation of researchers and advocates,[71] which contributes to fragmented and less protective food systems (Panel 3).[69,71] This commercial and market actors (regulatory capture) disproportionately affects low-resource and socially disadvantaged populations, who are more exposed to unhealthy food environments and higher consumption of ultra-processed foods, thereby reinforcing socioeconomic health disparities and increasing the burden of diet-related conditions such as obesity, diabetes, and MASLD.[72,73] The results are permissive policies and environments that sustain obesogenic and hepatotoxic exposures across populations. Clinicians and professional societies have a critical role in countering commercial interference by prioritising independent, evidence-based nutrition guidance, implementing robust conflict-of-interest safeguards, and avoiding reliance on food-industry–sponsored education or partnerships. Professional leadership in guideline development and public communication is

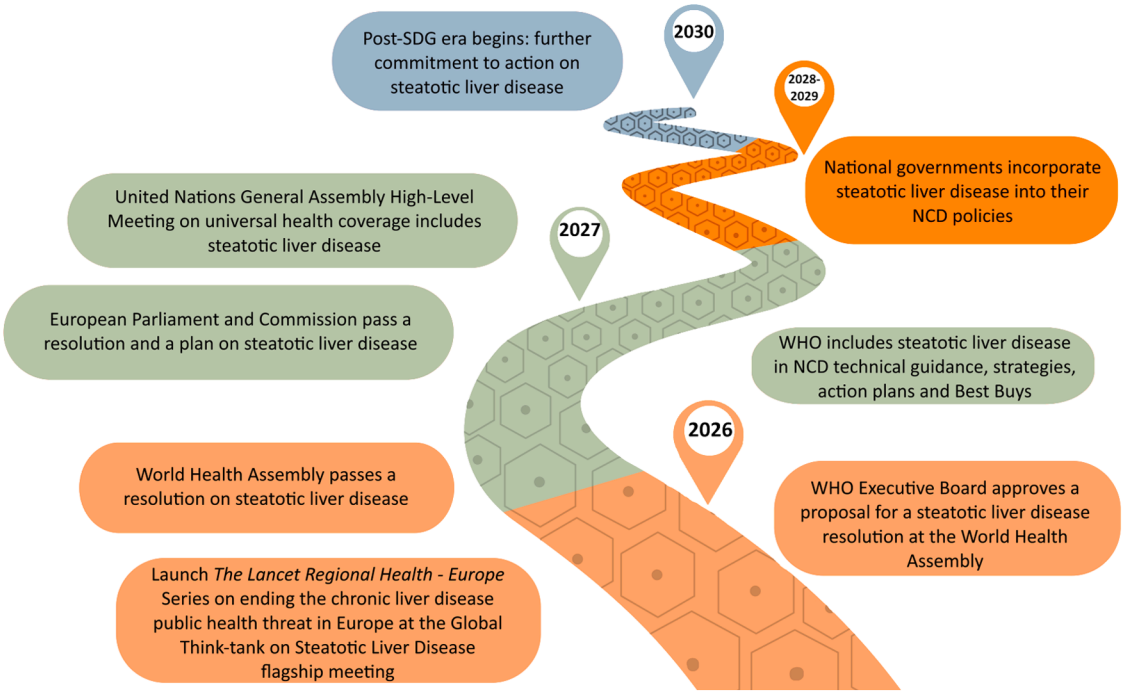

***Fig. 3:* The road to success in steatotic liver disease policy (2026–2030).** Notes: The milestones and indicators of governmental policy success for steatotic liver disease set out in the figure build on a series of key 2025–26 policy activities led by non-governmental actors: the Barcelona Institute for Global Health (ISGlobal); Euractiv; the European Association for the Study of the Liver (EASL); the European Liver Patients Association (ELPA); the Global Liver Institute (GLI); the Global Think-tank on Steatotic Liver Disease; the Healthy Livers Healthy Lives coalition of the American Association for the Study of Liver Diseases (AASLD), the Asian Pacific Association for the Study of the Liver (APASL), EASL, the Latin American Association for the Study of the Liver (ALEH), and the Society on Liver Disease in Africa (SOLDA); and the World Obesity Federation (WOF). High-level events were held at the European Parliament (December 2025), during the United Nations General Assembly High-level Meeting on NCDs (September 2025), at the World Health Assembly (May 2025), and at the World Health Summit (October 2025) along with ELPA, ISGlobal and WOF engagement at the WHO Executive Board (February 2026); many of these events were endorsed by non-governmental organisations from around the world and four days of events are planned for the World Health Assembly in May 2026.

essential to ensure that MASLD/MASH prevention is not undermined by permissive, industry-led approaches to food system governance.

Opportunities for policy and system integration

There are substantial opportunities to integrate MASLD/MASH more effectively into existing health policies and care systems. Embedding MASLD/MASH within established NCD frameworks would enable countries to leverage existing structures for prevention, timely detection, and long-term management.[84] Although MASLD/MASH prevention aligns with broader public health priorities, including those on nutrition, physical activity, alcohol consumption, and cancer prevention, it is rarely positioned alongside them, despite shared metabolic and behavioural determinants.[57,85] Realising these synergies requires stronger cross-disciplinary collaboration, primarily with cardiology, endocrinology, hepatology, and primary care working within coordinated care models rather than parallel, speciality-driven pathways. For example, in Italy, the National Prevention Plan (PNP) for 2020–2025 addresses multiple diseases within a single integrated framework (e.g., CVD, diabetes, cancer), illustrating how national strategies can adopt a cross-cutting approach to prevention and highlighting an opportunity to integrate MASLD/MASH into existing policy structures.[86] Additionally, digital health tools and integrated data systems also offer significant potential to enhance population surveillance, risk stratification, and care coordination, particularly as automated algorithms and primary care-based detection approaches continue to evolve.[24] Moreover, with pharmacological treatments for MASH now becoming available in Europe, health systems must prepare by strengthening diagnostic and treatment monitoring capacity, establishing more robust care pathways, and increasing equitable access to the entire MASLD continuum of care.[49] Together, these actions would position countries to move from fragmented responses toward a coherent, system-wide strategy for MASLD/MASH (Panel 4).

Future research and policy direction

The continued lack of policy alignment and explicit recognition of MASLD/MASH in key governmental

Panel 3: Food package warnings, MASLD/MASH and the Sustainable Development Goals

Food packaging warnings can effectively counteract the influence of an obesogenic environment. Policy interventions targeting food packaging, such as front-of-pack labelling, are designed to guide individuals toward healthier choices even when they are exposed to environments that promote unhealthy eating. One widely studied example is the Nutri-Score label, which uses a colour-coded and letter-graded system to summarise the nutritional quality of products. Evidence shows that such labels can significantly influence purchasing behaviour: a French randomised controlled trial found that Nutri-Score labelling increased the likelihood of consumers choosing healthier products by 16%, when compared with unlabelled options.[74] Beyond Nutri-Score, simpler labels such as traffic-light (green, yellow, red) systems have been shown to lead consumers to purchase selected food purchases with reduced calorie and sugar content. A systematic review of front-of-pack labelling interventions across multiple countries reported consistent improvements in the nutritional quality of consumer purchases, particularly for beverages and packaged foods.[75] Latin American countries like Mexico[52] and Uruguay[76] provide real-world examples where a simple, stark "warning label" approach has gained public acceptance, shown effectiveness in shaping intended purchases, and holds promise to influence actual consumer behaviour even among vulnerable populations, including children.[77] These interventions illustrate that simple, easily interpretable packaging cues can effectively nudge consumers toward healthier behaviours, mitigating some of the risks posed by obesogenic environments.[78] Such labels can be combined with other policy measures to ensure preparedness for MASLD/MASH and reduce its burden. Medical and scientific societies can strengthen the effectiveness of food package warnings by publicly supporting their implementation, resisting industry efforts to weaken labelling standards, and reinforcing these policies within clinical guidance and professional education.

Drawing on lessons from the Framework Convention on Tobacco Control,[79] it is crucial that MASLD/MASH governmental policy frameworks anticipate and mitigate commercial interference, as was set out in the first NAFLD conceptual model.[78] Transparency in policymaking, conflict-of-interest safeguards, and the exclusion of industry and lobby actors from health policy forums are foundational measures to protect public health objectives.[71] Without these protections, the same dynamics that delayed effective tobacco and alcohol regulation could impede progress in addressing MASLD/MASH across Europe.[79,80] Advancing MASLD/MASH policy will require stronger accountability structures that mirror global commitments to equitable health progress, such as the Sustainable Development Goals (SDGs). MASLD/MASH intersects with several SDG domains, including universal health coverage (SDG 3.8), nutrition (SDG 2), NCD-related mortality (SDG 3.4), and the reduction of inequalities in access to essential health services (SDG 10).[81] Yet, the spectrum of SLD, including MASLD, and liver health more broadly, are not included within SDG monitoring.[82] Incorporating MASLD/MASH into existing monitoring systems and regional reporting mechanisms is essential to ensure that countries can track progress toward the SDGs, particularly as slow improvements in chronic disease prevention and persistent inequalities in unmet needs have emerged as major obstacles to achieving the 2030 SDG agenda.[83]

and multilateral organisation policy documents has substantial implications for health systems and people living with the disease. Without inclusion in national NCD frameworks, MASLD/MASH risks remaining underdiagnosed and undertreated, which will lead to missed opportunities for timely intervention and cost-effective prevention.[5,87] Key policy priorities that national- and European-level government entities can take, in addition to WHO and the United Nations, include the effective integration of MASLD/MASH into NCD strategies and action plans (Fig. 3), ensuring that people-first language is always used.[88] Health systems face a growing burden of advanced liver disease, cirrhosis, and HCC, alongside increased cardiovascular and metabolic complications, all of which could be mitigated through integrated, risk-based screening and management pathways set out by such policies.[5,78] For people living with MASLD/MASH, the absence of clear policy direction translates into inconsistent access to diagnostic tools, limited clinical awareness, and insufficient referral pathways between primary care, endocrinology, cardiology, psychology, hepatology, and other medical and non-medical specialities. This fragmented approach not only delays diagnosis but may also exacerbate health inequities, since individuals living in lower-resource settings or with comorbid conditions are least likely to be identified and managed appropriately.[89,90] These inequities are further shaped by social and commercial determinants of health, which increase the risk of MASLD/MASH and disease progression.[90] Looking forward, Europe must include MASLD/MASH into policy frameworks to mitigate the future burden of liver disease and avoid undermining the progress made in broader NCD prevention as part of the SDGs.[83]

Limitations

While a broader view of health system readiness may examine components beyond policy (e.g., implementation, resourcing, service availability, or effectiveness), our approach assesses clinical guidelines and government policies to address MASLD/MASH. Secondly, although we conducted systematic searches of national government sources and grey literature and incorporated verification by in-country experts, relevant documents may have been missed, particularly those located outside traditional health-sector repositories. MASLD/MASH prevention is inherently cross-sectoral, and policies situated within agriculture, food systems, consumer protection, or fiscal ministries may not explicitly reference liver health, leading to potential underrepresentation of upstream prevention efforts.

Conclusions

MASLD is Europe's most prevalent liver disease and yet, it remains weakly addressed in European national and regional policy. While new diagnostics and treatments create unprecedented opportunities for MASLD/MASH prevention and care, most EU and UK health systems remain unprepared to address this public health threat. Integrating MASLD/MASH within existing NCD policy frameworks and healthcare services should be prioritised. Europe's response over the coming years will determine whether MASLD/MASH becomes a manageable chronic condition or the leading contributor to cirrhosis, HCC, and liver transplantation.

Search strategy and selection criteria

We searched PubMed (MEDLINE), national government sources, conference proceedings, and grey literature from regional and international public health organisations to identify evidence of metabolic dysfunction-associated steatotic liver disease (MASLD) and metabolic dysfunction-associated steatohepatitis (MASH) and the existence of related policies, defined as strategies, action plans, or clinical practice guidelines (CPGs),[31,32] across 28 European countries (European Union countries and the United Kingdom). See Supplemental Methods S1 for information on the search for MASLD prevalence estimates and analysis. Searches covered materials published until 15 November 2025, in any language used within the included countries, and incorporated studies using the previous terminology (i.e., non-alcoholic fatty liver disease [NAFLD]/non-alcoholic steatohepatitis [NASH]). Eligible sources included empirical studies, CPGs, national or subnational strategies, and strategy or action plans; no other exclusion criteria were applied. All extracted information underwent verification by in-country experts. In-country experts were purposely selected based on their demonstrated expertise in liver disease, metabolic health, health systems, and/or health policy within their respective national contexts.

Contributors

JVL conceptualisation, methodology, validation, resources, writing—original draft, writing—review and editing, project administration, and supervision.

TMW conceptualisation, methodology, validation, Formal analysis, Investigation, writing—original draft, writing—review and editing, and project administration.

LA-G Formal analysis, Investigation, writing—original draft, writing—review and editing, and visualisations.

KWMA, PNB, HEM, SMB, NP, JMP investigation, writing—original draft, and writing—review and editing.

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Editor note

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Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.lanepe.2026.101713.

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