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REVIEW

Disparities in Access to Gastrointestinal Care in the United States

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Abstract

Disparities in gastrointestinal (GI) care in the United States represent a major health burden, with GI diseases accounting for approximately $135 billion annually in direct medical expenditures. A pronounced geographic disparity exists, with over two-thirds of the 3,149 U.S. counties lacking any GI specialist. This results in an estimated 49–50 million Americans required to travel more than 25 miles for specialty care. For instance, states like Wyoming and Arizona report over 75% of residents are more than 25 miles from GI care, while states such as Alaska and North Dakota average only 1.8 gastroenterologists per 100,000 population. Socioeconomic inequities manifest as tangible deficits in care: a lack of insurance is associated with a 15–20% point gap in colorectal cancer (CRC) screening uptake. For hepatitis C virus (HCV) treatment, initiation within one year of diagnosis was 35% for privately insured patients but only 23% for Medicaid patients. In acute emergencies, uninsured patients face higher mortality in both upper GI bleeding (UGIB) and lower GI bleeding (LGIB). Targeted interventions show promise in mitigation: community health worker (CHW)-led programs have been shown to significantly increase CRC screening uptake. Patient navigation, often combined with mailed fecal immunochemical tests (FIT), has increased CRC screening completion by 7.3% points in safety-net populations. Telemedicine models can expand access, with video-based IBD care management programs requiring in-person evaluations in only ~ 1.3% of cases. Policy reforms, such as removing restrictive state Medicaid criteria for HCV therapy, have been shown to significantly increase treatment and narrow disparities. Continued focus on workforce incentives and data transparency remains critical to address these persistent, structurally rooted gaps.

Keywords Gastroenterology · Hepatology · United States of America · Public health

Abbreviations

CRC	Colorectal cancer
IBD	Inflammatory bowel disease
HCV	Hepatitis C virus
HBV	Hepatitis B virus
MELD	Model for end-stage liver disease
FIT	Fecal immunochemical test
EGD	Esophagogastroduodenoscopy

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ERCP	Endoscopic retrograde cholangiopancreatography
CHW	Community health worker
CPSTF	Community preventive services task force
VA	Veterans affairs

Introduction

Disparities in healthcare access remain a persistent challenge in the United States, and gastroenterology is no exception. Gastrointestinal (GI) diseases impose a substantial burden, accounting for an estimated $135 billion annually in direct medical expenditures [1]. Many high-impact GI conditions—including colorectal cancer (CRC), liver cirrhosis, inflammatory bowel disease (IBD), and acute gastrointestinal bleeding—are preventable or more effectively treated when diagnosed early. Yet access to preventive services, diagnostic evaluation, specialist consultation, and advanced therapies remains uneven across demographic and geographic groups. Consistent gaps in care have been documented: populations facing socioeconomic disadvantage, racial and ethnic minority status, geographic isolation, limited insurance coverage experience higher cirrhosis-related mortality, worse outcomes after GI emergencies, and lower access to curative options such as liver transplantation [2–5].

These disparities are strongly associated with system-level factors rather than inherent biological differences. Counties with fewer gastroenterologists per capita have lower colonoscopy completion, greater delays in endoscopic evaluation, and higher CRC mortality [2]. Safety-net and rural hospitals—often serving minority and low-income populations—demonstrate reduced access to therapeutic endoscopy and advanced imaging, contributing to worse outcomes after upper GI bleeding and hepatobiliary emergencies [5, 6]. Insurance-related barriers also exert measurable effects: Medicaid beneficiaries experience longer wait times for colonoscopy and lower access to subspecialty clinics, while non-expansion states exhibit persistently lower CRC screening rates and higher preventable GI hospitalizations [7]. Language discordance and limited English proficiency are linked to poorer bowel preparation and missed follow-up colonoscopy, further widening outcome gaps. Collectively, these findings show that the drivers of GI inequities are observable and measurable. Although policy reforms such as the Affordable Care Act and Medicaid expansion have narrowed some insurance gaps, substantial inequities persist. Variability in Medicaid eligibility, coverage for HCV antivirals, and approval requirements for advanced therapies continues to produce state-level disparities in outcomes such as viral hepatitis cure rates and receipt of liver transplant evaluations [7]. These differences highlight the need for targeted interventions addressing workforce shortages, procedural capacity, and barriers to preventive care.

This review synthesizes current evidence on disparities in access to gastrointestinal care among U.S. adults, quantifying the magnitude and clinical impact of inequities across major GI conditions Fig. 1.

Current Disparities in Access to GI Care in the United States

Geographic Disparities

A pronounced geographic disparity exists in the distribution of gastroenterologists across the United States, with over two-thirds of the 3,149 counties lacking any GI specialist, affecting an estimated 49–50 million Americans who must travel more than 25 miles for specialty care. In addition, 17% of counties have fewer than five gastroenterologists. This shortage disproportionately affects rural

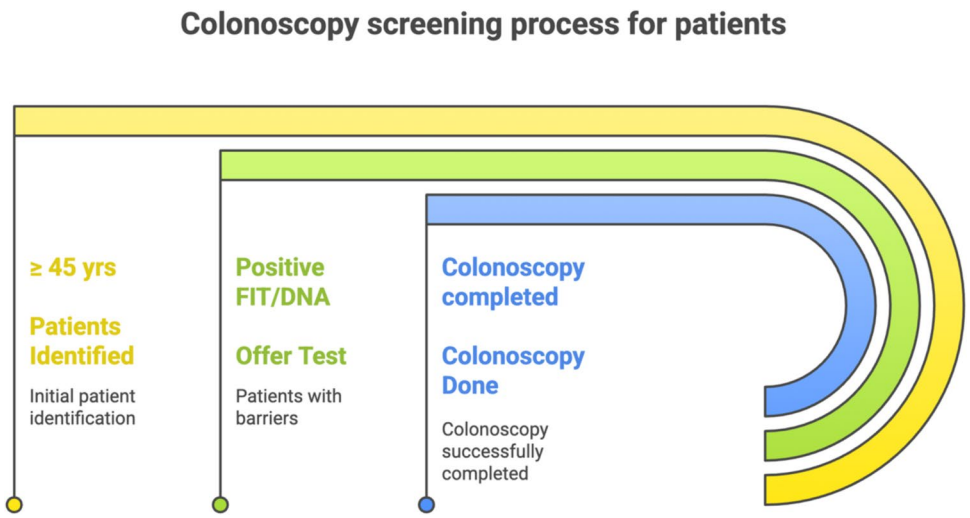

Fig. 1 Algorithm-increasing colorectal cancer screening

and non-metropolitan regions, where approximately 80% of counties without a gastroenterologist serve older, economically disadvantaged populations with higher uninsured rates [1]. States such as Alaska, North Dakota, and Wyoming report the lowest gastroenterologist densities (≈ 1.8 per 100,000 population), whereas northeastern states including Massachusetts, Connecticut, and New York exceed 7.0 per 100,000 [1, 8]. These intersecting geographic and socioeconomic barriers contribute to delays in diagnostic evaluation and therapeutic intervention in underserved areas (Fig. 2).

Nationally, 45% of the U.S. population (≈ 149 million) live within 10 miles of a gastroenterologist, while 14% (≈ 45 million) live more than 25 miles away and 2% (≈ 7 million) more than 50 miles away. Disparities are most striking in states such as Wyoming and Arizona, where over 75% of residents live more than 25 miles from GI care; in Wyoming, more than half live beyond 50 miles. In contrast, all residents of Delaware, New Jersey, and Rhode Island live within 25 miles of a gastroenterologist [1, 7, 8]. These geographic divides extend beyond distance alone: for low–socioeconomic status (SES) patients, even metropolitan access often entails prolonged public transportation use, lost wages, and significant financial strain. Compounding this challenge, gastroenterologists in non-metropolitan counties tend to be older, with over two-thirds aged above 55 and nearly half over 65, raising concern that impending retirements will further exacerbate access gaps [1].

Socioeconomic Disparities

Socioeconomic disadvantage is a major driver of disparities in GI care. Healthy People 2020 identify five key domains of social determinants of health (SDOH): economic stability, education, social and community context, health and healthcare access, and neighborhood and built environment [9]. The downstream effects of these upstream factors include increased disease severity, more frequent complications, poor appointment adherence, higher hospitalization rates, and elevated mortality among GI patients Table 1.

Lower income and educational attainment are strongly associated with reduced access to preventive screening and specialty services. National surveys demonstrate that only 61.7% of Hispanic adults with limited English proficiency are up to date with CRC screening, compared with 74.6% of non-Hispanic White and 75.3% of non-Hispanic Black adults with higher English proficiency [10]. Financial barriers—including lack of insurance and high out-of-pocket costs—frequently deter low-SES patients from elective procedures such as colonoscopy and from seeking specialist consultation for GI symptoms [4]. These challenges are especially pronounced in chronic GI conditions such as IBD, where one in eight U.S. patients experiences financial toxicity, often compounded by food insecurity, limited social support, and healthcare nonadherence, leading to poorer outcomes and increased utilization. In a New Hampshire survey,

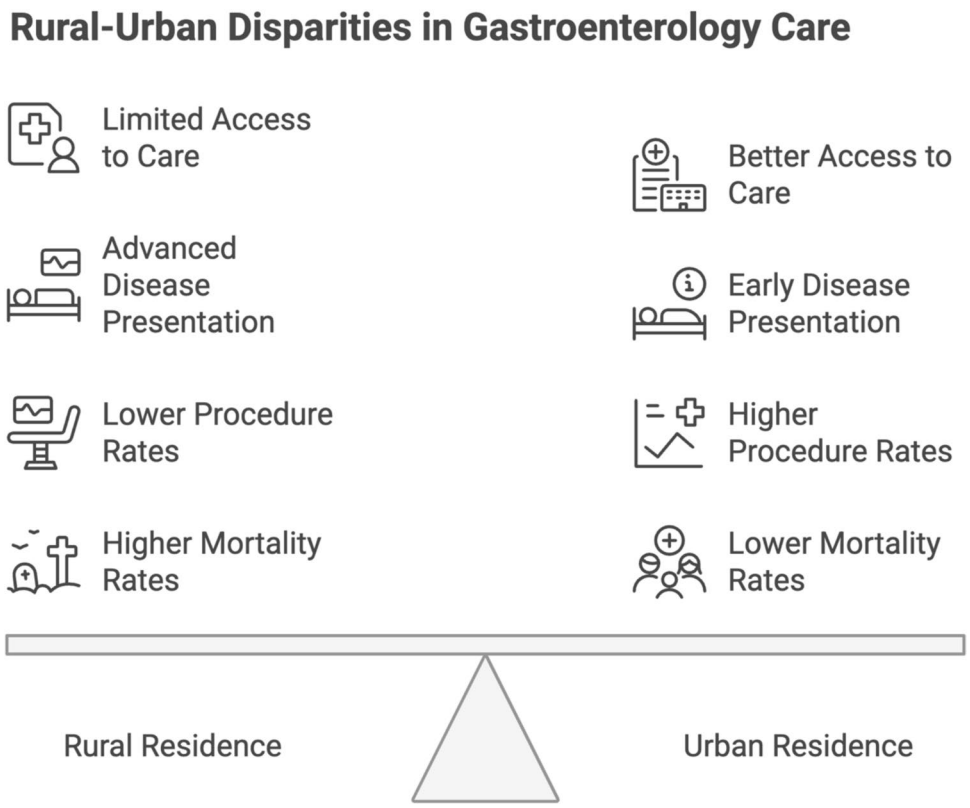

Fig. 2 Barriers to GI Care in rural populations

Table 1 Tabulated summary of barriers to equitable GI care

Barriers	Disparities in GI care access & outcomes
Geographic	~67% of U.S. counties have no local GI specialist; ~50 million people live > 25 miles from GI care. Rural adults have significantly lower CRC screening rates (OR ~ 0.81) and reduced access to advanced endoscopy. Higher GI cancer mortality in rural areas
Socioeconomic	Lower screening uptake (poverty, < HS education linked to less CRC screening). Higher emergency utilization for IBD and other GI issues in low-SES groups. Worse outcomes in liver disease with lower income
Race/ethnicity	Black patients: higher CRC incidence & 34% higher mortality than Whites; lower odds of timely endoscopy for GI bleeding; 25% higher cirrhosis mortality and 4 × lower transplant rates. Hispanic patients: lower CRC screening (especially LEP); higher HCV-related cirrhosis burden but gaps in treatment. Asian patients: high hepatitis B/liver cancer rates with screening/treatment gaps. Native Americans: high GI cancer and GI bleeding mortality with poor access
Structural	Recent immigrants and those with limited English proficiency have substantially lower preventive care use (e.g., CRC screening). Undocumented patients often ineligible for insurance → late presentations (advanced CRC, variceal bleeding, etc.). Cultural and language barriers lead to miscommunication and lower adherence
Gender	Men historically less likely to utilize screening colonoscopy. Women with GI symptoms (e.g., IBS) sometimes face diagnostic delays. Some evidence of lower GI procedure referral for women vs men (e.g., in liver transplant listing, historically). Overall, gender differences smaller than racial/SES gaps but still notable in care-seeking patterns

73% of patients reported at least one barrier to accessing GI care, and 75% identified socioeconomic factors as key obstacles [11]. Health literacy further magnifies these disparities. Patients with lower educational attainment may lack awareness of recommended screenings or struggle to navigate referral pathways and follow-up care. Over 30% of patients in the same survey came from low-literacy backgrounds and reported difficulty understanding medical information, completing paperwork, and navigating the healthcare system, perpetuating delays in diagnosis and worse outcomes [11].

Socioeconomic barriers are particularly prominent among immigrant populations. Recent and undocumented immigrants face limited access to translated materials, shortages of medical interpreters, cultural mistrust, and competing economic priorities that deprioritize preventive care. Certain GI conditions disproportionately affect immigrant communities—for example, chronic hepatitis B among individuals from Asia and Africa—yet screening and treatment rates remain low due to limited outreach. Undocumented patients with cirrhosis or GI malignancies often lack access to transplant services or advanced therapies unless charity care is available, creating persistent ethical and public health challenges [12].

Racial and Ethnic Disparities

Racial and ethnic disparities are well documented across the GI disease spectrum, manifesting as measurable differences in prevention, treatment, and outcomes. In colorectal cancer (CRC), one of the most clearly quantified examples, Non-Hispanic Black Americans experience approximately 20% higher incidence and 34% higher mortality than Non-Hispanic Whites, making CRC the second leading cause of cancer death among Black men and women. Black adults are diagnosed at younger ages and with more advanced disease, contributing to the U.S. Preventive Services Task Force decision to lower the recommended screening age to 45 in part to address these gaps [2, 13]. Screening disparities remain substantial: as of 2018, only 69% of age-eligible U.S. adults were up to date, with markedly lower rates among uninsured, Hispanic, and Black individuals; limited English proficiency (LEP) further reduces screening among Hispanic adults, and rural minority populations experience later-stage diagnoses [10]. After diagnosis, Black and Hispanic patients are less likely to receive guideline-concordant care, including timely surgery and adjuvant chemotherapy, and are less frequently treated at high-volume cancer centers [14]. Notably, Black–White survival differences largely disappear in the equal-access Veterans Affairs (VA) system, indicating that access, insurance, and treatment pathways—rather than biological factors—drive most observed disparities [2, 15] Table 2.

Liver disease and cirrhosis show similar system-level inequities. Historically, Black and Hispanic patients have had lower access to hepatitis C virus (HCV) therapy. Although direct-acting antivirals (DAAs) have improved cure rates overall, persistent gaps—particularly among Medicaid beneficiaries—reflect insurance and administrative barriers rather than clinician decision-making [16]. Approximately 23% of Medicaid enrollees with HCV receive treatment within a year of diagnosis compared with ~35% of privately insured individuals, with Black Medicaid patients slightly less likely to be treated even after adjustment [5, 16]. These differences are closely linked to state-level Medicaid restrictions and prior authorization requirements. In chronic hepatitis B (HBV), Asian and African immigrant populations carry a disproportionate burden, yet underdiagnosis, limited linkage to care, and cultural or linguistic barriers result in low treatment uptake and higher hepatocellular carcinoma incidence. In cirrhosis, Black and Hispanic patients remain less likely

Table 2 Disease specific barriers to equitable GI care

Condition/area	Observed outcome disparities	Notable contributing factors
Colorectal cancer	Black Americans have ~ 20% higher incidence and 34% higher mortality than Whites. Later-stage diagnosis more common in uninsured and low-income patients. Worse 5-year survival in Black, Hispanic, and low-SES patients (gap narrows in equal-access systems)	Lower screening uptake (race, SES, rural); delays in treatment for Medicaid/uninsured; differences in cancer care quality by hospital
Liver disease & cirrhosis	Black patients with cirrhosis ~ 25% higher mortality, 4 × less likely to get transplant vs Whites. Black and Hispanic patients less likely to receive liver transplants nationwide. Higher HBV/HCC mortality in Asian and Pacific Islander groups. Lower HCV cure rates in Medicaid (esp. non-expansion states)	Insurance coverage (Medicaid expansion boosts HCV treatment); restrictive Medicaid policies (fibrosis/sobriety requirements) cut HCV treatment ~ 50%; transplant referral bias and structural barriers (transport, mistrust)
Inflammatory bowel disease	Minority patients have higher acute care use (ED visits, hospitalizations) and more corticosteroid-dependent flares. Black IBD patients show higher surgery rates and complications in some series. Asians/Hispanics utilize fewer maintenance services	Access to GI specialists and biologics (minorities less likely to be on advanced therapies early); SES mediators (differences attenuate after adjusting for income); health literacy and trust in chronic care
GI bleeding	In UGIB, Black and Hispanic patients have lower odds of early endoscopy and higher complication rates. Native Americans with UGIB have highest in-hospital mortality. Uninsured patients see higher mortality in both UGIB and LGIB	Hospital resource disparities (availability of on-call endoscopists); implicit triage bias; insurance-related delays (e.g., transfer approvals); geographic distance to endoscopy for rural EDs
Pancreatitis	Black patients experience higher inpatient mortality for acute pancreatitis and lower rates of therapeutic ERCP for biliary pancreatitis. Low-income patients have more severe disease at presentation and more readmissions	Differences in hospital capabilities (ICU, GI on staff); insurance influencing transfer to tertiary care; patient comorbidity burden; possibly later presentation due to access barriers

to be waitlisted for or undergo liver transplantation, with Black patients experiencing higher waitlist mortality due to late referrals, limited transplant access, and variation in psychosocial evaluation practices [16, 17].

Disparities are also emerging in inflammatory bowel disease (IBD) as incidence rises in minority populations. Asian and Hispanic patients engage less frequently with outpatient care, while Black patients—particularly older adults—have higher emergency visits, hospitalizations, and steroid dependence, suggesting gaps in access to consistent specialty care or advanced therapies [15, 18]. Black patients are also less likely to receive biologic therapy or timely treatment escalation, contributing to higher emergent surgery rates and longer hospital stays [15, 18]. Importantly, studies in equal-access systems demonstrate attenuation of racial differences in IBD outcomes, reinforcing the role of healthcare system factors rather than patient-level differences. Acute GI emergencies further illustrate the impact of resource variation. Black and Hispanic patients with upper GI bleeding (UGIB) are less likely to undergo timely endoscopy, while Native American patients experience the highest adjusted mortality [3]. These patterns largely reflect hospital-level constraints—such as limited after-hours endoscopy coverage, fewer GI specialists, and underfunded safety-net facilities—rather than differential care within the same hospital. Similar trends are seen in pancreatitis, where Black patients have lower rates of indicated ERCP, longer hospital stays, and higher in-hospital mortality, aligning closely with variation in hospital capabilities, access to tertiary centers, and insurance-driven referral networks [4].

Systematic and Policy-Based Disparities

Disparities in GI care are not solely driven by individual patient factors but are deeply rooted in systemic and policy-level determinants, including insurance design, healthcare infrastructure, workforce distribution, and structural barriers. Together, these forces shape how disparities emerge and persist. Insurance status strongly predicts access to GI services. Uninsured individuals and Medicaid beneficiaries consistently demonstrate lower use of preventive care, including CRC screening, and more frequent delayed presentations with advanced disease. Lack of insurance is associated with a 15–20% point gap in CRC screening uptake, and uninsured CRC patients are far more likely to be diagnosed at advanced stages than privately insured counterparts [19]. Even among insured populations, coverage type matters: Medicaid beneficiaries with conditions such as IBD or liver disease experience higher hospitalization and emergency department use, reflecting suboptimal outpatient management. In acute settings, Medicaid or uninsured patients have lower odds of receiving essential procedures such as esophagogastroduodenoscopy (EGD) or ERCP compared with privately insured patients [4]. Although private insurance affords better access—for example, HCV treatment within one year occurs in 35% of privately insured patients versus 23% of Medicaid beneficiaries—financial barriers remain substantial [5].

Insurance coverage alone does not ensure equitable care when benefits are limited. Until recently, many state Medicaid programs imposed restrictive eligibility criteria on costly therapies such as direct-acting antivirals (DAAs) for HCV, effectively rationing curative treatment. When restrictions were lifted, HCV cure rates increased markedly, highlighting how policy decisions can exacerbate or mitigate disparities [20]. Similar barriers historically affected colonoscopy follow-up after positive stool tests due to cost-sharing requirements, which only recently were reclassified as fully covered preventive services. Even within Medicare, disparities persist across racial and income groups, shaped by differences in supplemental coverage and regional practice patterns. These patterns underscore that who pays for care—and what is covered—directly influences GI health inequities [11].

Workforce and infrastructure limitations further compound disparities. A looming national shortage of gastroenterologists, combined with population aging, threatens to widen gaps as new specialists cluster in urban markets while rural gastroenterologists—often nearing retirement—face attrition [1]. Shortages extend beyond physicians: nurse practitioners, physician assistants, dietitians, social workers, and other multidisciplinary staff essential for managing IBD and liver disease are also scarce in under-resourced regions. Hospital-level deficits further undermine care, as community hospitals may lack advanced endoscopy, interventional radiology, or intensive care, necessitating transfers that delay treatment and worsen outcomes [21]. Minority-serving and safety-net hospitals frequently operate with constrained budgets, limiting access to modern equipment and staffing. Workforce diversity also remains limited, with Black and Hispanic physicians underrepresented in gastroenterology relative to population share, potentially affecting patient engagement in minority communities. Strengthening GI care infrastructure through telemedicine, workforce incentives, and investment in safety-net institutions is essential to achieving equitable care [5, 9, 11, 12]. Finally, cultural and communication barriers influence care delivery. Practices lacking minority providers may inadvertently discourage minority patient engagement, while limited interpreter services and culturally tailored educational materials impede care for non–English-speaking populations. Implicit bias and communication gaps further contribute, as minority patients are less likely to feel heard or validated by providers, eroding trust and adherence [22]. Historical injustices, particularly among African American communities, compound mistrust and may reduce engagement in invasive or

high-stakes procedures such as colonoscopy unless trust is actively fostered [9, 11, 12].

Gender-Based Disparities

Although gender-based disparities in GI care are generally less pronounced than those related to race or socioeconomic status, important differences in access, engagement, and outcomes persist. Historically, women have shown higher uptake of preventive services, while men have underutilized preventive screening. In CRC screening, earlier studies identified male sex as an independent risk factor for being unscreened [10], although more recent data suggest this gap has narrowed with updated guidelines and improved primary care outreach. Gender-based outcome differences remain evident: women with cirrhosis have lower liver transplantation rates than men even after adjustment, raising concerns about referral patterns and caregiver support [16]. Conversely, men have higher incidence of several GI cancers and may experience more aggressive disease courses.

In IBD, gender influences care engagement. Women may delay endoscopic evaluation due to competing responsibilities or misattribution of symptoms, while men are less likely to engage in routine follow-up or adhere to recommended lifestyle modifications [15]. Gender also intersects with other social determinants, such that low-income men and women may face compounded barriers. Although gender alone is not a dominant predictor of GI disparities, incorporating gender-sensitive approaches—such as flexible scheduling for caregivers and ensuring women's concerns are adequately addressed—remains essential for equitable, patient-centered GI care.

Interventions and Strategies to Advance Equity in GI Care

Addressing disparities in GI care requires multipronged interventions integrating community engagement, healthcare delivery innovation, and policy reform. This section reviews evaluated and emerging strategies—including telemedicine, community outreach, patient navigation, and care coordination—and examines evidence for their effectiveness in reducing inequities in GI outcomes.

Telemedicine and Telehealth Innovations

Telemedicine has emerged as a key tool to improve specialty access for underserved populations by enabling virtual consultations for patients in geographically isolated or under-resourced settings. The COVID-19 pandemic accelerated telehealth adoption and provided an opportunity to evaluate its real-world impact [23]. Evidence shows telemedicine can meaningfully expand access to GI care. Within the VA system, tele-hepatology was associated with improved adherence to hepatocellular carcinoma surveillance compared with no visits, with both in-person and telemedicine encounters showing benefit. In hepatitis C care, the Project ECHO model increased treatment initiation in rural and underserved areas, with outcomes comparable to or exceeding traditional referral pathways [22, 24].

In IBD, video-based care management programs maintained clinical stability, with in-person evaluations required in only ~ 1.3% of cases [22, 24]. Telemedicine has also been integrated into pre-transplant evaluation, where electronic consultations and video visits expedited assessments by reducing travel and duplicative testing [22, 25]. Collectively, these findings demonstrate telehealth's ability to reduce geographic, mobility, and time-related barriers to GI specialty care.

However, telemedicine is not inherently equitable. Studies show lower utilization among racial and ethnic minorities, individuals with limited English proficiency, older adults, and Medicaid beneficiaries, who are less likely to engage in video visits [22]. In GI practices, Black patients and Medicaid-insured individuals had lower video telehealth uptake, reflecting digital divide factors such as limited broadband, device access, digital literacy, and data costs. Non-White patients also report lower satisfaction with telehealth communication, underscoring the need for culturally and linguistically responsive virtual care [22].

Optimizing telemedicine for equity requires targeted investment. Strategies include providing loaner devices or WiFi hotspots, multilingual technical support, simplified platforms, and allowing patient choice between telephone and video visits [26]. When implemented thoughtfully, telehealth can reduce transportation barriers, limit work disruption, and improve access. For example, an on-demand GI tele consult service at a safety-net hospital prevented 90% of unnecessary emergency department visits through remote management and coordinated follow-up [27].

Regulatory barriers remain a major limitation. Current licensure rules require clinicians to be licensed in the state where the patient is located. Temporary licensure waivers during the COVID-19 emergency enabled cross-state telemedicine and demonstrated the benefits of regulatory flexibility. States participating in permissive frameworks, such as the Interstate Medical Licensure Compact, show higher telehealth utilization among Medicare beneficiaries. Licensure reform—including expanded interstate compacts or portable licensure pathways—represents a significant opportunity to extend telemedicine access for rural and low-resource communities [22].

Policy Focused Reform

Achieving long-term equity in GI care requires systemic changes beyond individual or clinic-level interventions. Policy reform, structural investment, and population-level public health strategies are essential to ensure equitable access and outcomes across patient groups.

Medicaid policy is a central lever. Historically, restrictive coverage rules—such as prior authorization or sobriety and fibrosis-stage requirements for HCV therapy—have disproportionately limited access for disadvantaged populations. Removing these barriers leads to significant increases in HCV treatment and narrows disparities in cure rates across racial and socioeconomic groups [20]. Expanding Medicaid eligibility in non-expansion states and adopting uniform, evidence-based coverage policies—including universal access to HCV treatment, bariatric surgery, and transplant evaluation—can substantially reduce GI inequities. States that expanded Medicaid under the Affordable Care Act experienced larger early increases in CRC screening; very early expansion states showed a 15.9–16.45% point greater rise in screening prevalence in 2016 compared with non-expansion states ($p < 0.05$). Expansion was also associated with reduced uninsured rates and improved preventive care use, supporting the role of insurance in enabling early detection of chronic GI-related conditions [2].

Value-based payment models further support equity goals. Accountable care organizations and Medicaid managed care programs increasingly incorporate disparity-sensitive quality measures, incentivizing improved screening and care quality among minority, low-income, and rural populations. Integrating equity metrics into Medicare quality programs could similarly promote patient navigation, outreach, and mobile screening initiatives, aligning reimbursement with equity-oriented outcomes.

Workforce development remains critical. Incentives such as loan repayment, financial bonuses, and telehealth network models may improve GI specialist distribution in underserved regions. Increasing diversity in GI training enhances cultural competence and trust, while training in implicit bias and culturally competent care remains essential to address inequities in referral and treatment patterns. Quality-improvement efforts—such as simplified bowel preparation for low-literacy patients and equitable access to advanced imaging—can further reduce care gaps. Equity dashboards and national benchmarking resources provide frameworks to guide these efforts.

Integrating social determinants of health into GI care delivery is another key reform. Many clinics embed social workers or care coordinators to address transportation, preparation supplies, food insecurity, housing, and scheduling barriers. In liver disease, linkage to addiction services and social support programs improves adherence and outcomes. These wraparound services show promise in improving metrics such as sustained virologic response and reduced alcohol use, indirectly narrowing disparities.

Public health initiatives also reduce long-term GI disease burden. Hepatitis B vaccination has nearly eliminated racial gaps in new infections, while targeted hepatitis A vaccination has reduced outbreaks in marginalized populations. Regulatory strategies, such as sugar-sweetened beverage taxes, may reduce obesity-related liver disease. Community-based prevention remains highly effective: increasing CRC screening to 80% could prevent ~ 22% of new CRC cases and 33% of CRC deaths by 2030, with favorable cost-effectiveness. FIT-based screening and once-per-decade colonoscopy provide high value, while Helicobacter pylori eradication reduces gastric cancer incidence and mortality substantially in randomized trials. Broader interventions—such as alcohol-focused policies and needle-exchange programs—also reduce liver disease and viral hepatitis burden.

Finally, sustained investment in research and innovation is essential. Funding bodies should prioritize diverse enrollment and evaluation of community-based interventions. Emerging tools—including multilingual digital education platforms, home-based screening, and remote monitoring—offer scalable opportunities to broaden access and advance equity.

Community Outreach and Education Programs

Community-based interventions are effective in improving GI health outcomes among underserved populations by addressing informational and structural barriers to care. These initiatives—including community health worker (CHW) programs, culturally tailored education, and partnerships with local organizations—aim to raise awareness, build trust, and promote early engagement with screening and treatment.

A central evidence-based strategy is the deployment of CHWs. Meta-analyses and multiple trials demonstrate that CHW-led interventions significantly increase CRC screening uptake compared with usual care [28]. CHWs engage patients through education sessions, counseling, home visits, and reminder systems, and shared language and cultural background foster trust. The Community Preventive Services Task Force (CPSTF) endorses CHW-led interventions to increase CRC screening using FOBT, FIT, or colonoscopy in underserved populations. These programs are effective not only by increasing awareness but also by reducing practical barriers through assistance with scheduling, transportation, and translation [29]. Church-based CHW programs, including the "CHURCH" trial in Black communities, have improved CRC screening and cancer knowledge [30]. Similarly, CHW-led outreach in immigrant communities has increased HBV screening and linkage to care using

culturally tailored messaging. Importantly, CHW programs are cost-effective, often demonstrating favorable cost per quality-adjusted life year [29].

Beyond CHWs, culturally tailored education campaigns address population-specific disparities. Tribal health organizations serving Alaska Native populations implemented local navigation and education programs that increased screening rates and reduced CRC incidence. In Hispanic communities, Spanish-language media campaigns and charlas have improved awareness of HCV and reduced colonoscopy stigma. These efforts frequently involve trusted community leaders and are often paired with on-site screening opportunities, such as mobile units or health fair-based FOBT distribution, translating awareness into action [30].

Closely linked to outreach is patient navigation, which guides individuals through screening and treatment processes (Fig. 1). Programs combining mailed FIT kits with navigation increased CRC screening completion by 7.3% points in safety-net populations [32], while tailored education plus navigation doubled screening rates among low-income minority patients [31–33]. In HBV, community screening paired with navigation improved follow-up compared with traditional referral alone. Community engagement also supports chronic disease management; in IBD, support groups and education improve self-management and reduce isolation among minority patients [32, 33].

Patient Navigation and Care Coordination

Patient navigation, initially developed in oncology, is a highly effective strategy to improve equity across GI care by addressing logistical, financial, and informational barriers. Navigation is particularly well established in CRC screening, where multiple sequential steps create opportunities for patient drop-off. Randomized trials consistently show that navigators improve colonoscopy completion among low-income and minority populations [34, 35]. In one trial, 86% of navigated patients completed colonoscopy, with better bowel preparation and follow-up adherence than controls [35]. Based on this evidence, the CPSTF formally recommended patient navigation in 2020 to increase CRC screening in disadvantaged groups [36].

Navigation addresses barriers such as transportation, complex instructions, emotional support, and out-of-pocket costs [36]. Importantly, navigation can be implemented using existing staff, including nurses, medical assistants, or CHWs. Cost-effectiveness analyses show favorable costs per additional screening and per QALY gained, with potential cost savings through cancer prevention [37]. Beyond screening, navigation is increasingly applied across GI care. Programs ensuring follow-up colonoscopy after positive FIT tests improve adherence and early cancer detection. In cirrhosis care, navigators increase adherence to recommended ultrasound surveillance. In IBD, care coordination using dedicated nurses improves outcomes such as steroid-free remission by reducing care gaps. In HCV, peer navigators embedded in methadone clinics and prisons improve antiviral treatment initiation and completion among high-risk populations. Overall, navigation increases delivery of guideline-concordant care, reduces loss to follow-up, and improves outcomes. Programs such as the New York City Cancer Navigation Program have reduced or eliminated racial disparities in colonoscopy completion and follow-up. However, sustainability requires stable funding. While the Affordable Care Act supported navigation through prevention grants, permanent reimbursement mechanisms through Medicaid or Medicare would enhance long-term implementation [38].

Mobile Health Units and Decentralized Care Delivery

When logistical, geographic, or socioeconomic barriers limit access to traditional healthcare settings, decentralized care models offer effective strategies to expand reach. Mobile health units—equipped for screening, diagnostics, and sometimes treatment—bring services directly into communities and have shown success across GI applications. Cancer screening is a leading use case. Mobile endoscopy suites providing on-site colonoscopy and upper endoscopy have expanded access for underserved populations. A state-sponsored mobile colonoscopy program in Alabama delivers screening to rural regions, with bowel preparation quality and lesion detection rates comparable to hospital-based settings [39]. Other initiatives use mobile vans to distribute and collect FIT kits, increasing participation among patients with transportation barriers or no usual source of care. This aligns with evidence that mailed FIT outreach substantially improves CRC screening uptake, often doubling rates and performing particularly well in Medicaid and safety-net populations Fig. 3.

Mobile strategies have also shown promise in hepatology. Mobile liver clinics equipped with point-of-care FibroScan and phlebotomy screen for HCV, advanced fibrosis, and fatty liver disease at syringe exchange sites, homeless shelters, and rural health fairs, identifying patients otherwise disconnected from care and facilitating treatment linkage. These programs often provide on-site hepatitis A and B vaccination. International experience supports their effectiveness: in India, a mobile endoscopy van detected and treated a substantial burden of previously unidentified GI disease [40]. In the U.S., mobile CRC screening in rural counties has enabled early cancer and advanced adenoma detection among uninsured patients through free, neighborhood-based access [41]. Despite their effectiveness, mobile programs face implementation challenges, including equipment costs, staffing, maintenance, and regulatory requirements. Detection alone is insufficient without downstream care;

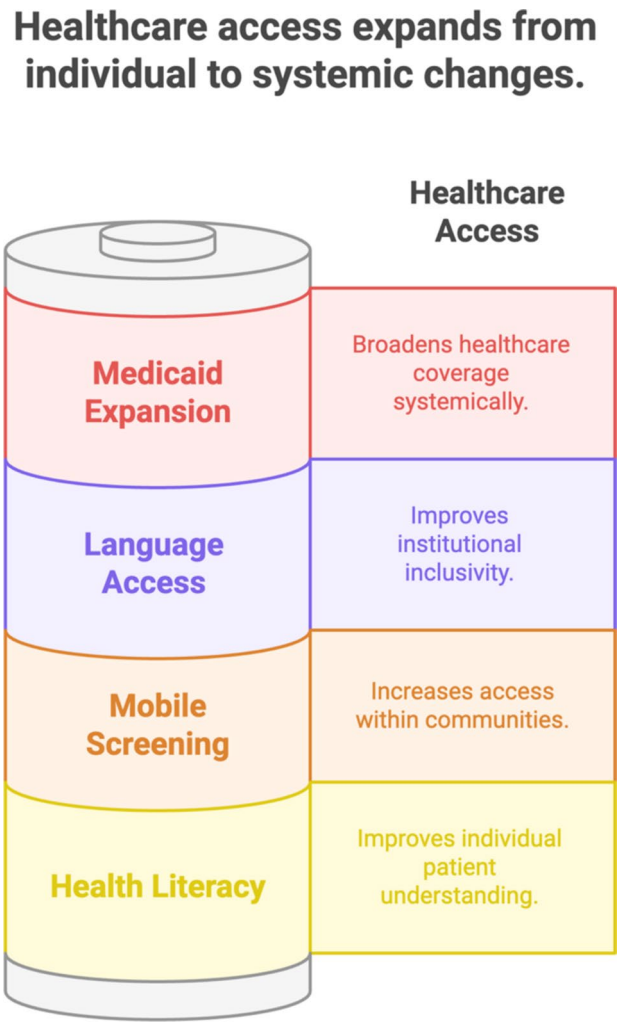

Fig. 3 Framework-multilevel strategy to advance equity in GI care

structured referral pathways and integration with patient navigation improve follow-up, treatment initiation, and outcomes by guiding patients through appointments and insurance processes.

Expanding GI Workforce Capacity

Meeting growing demand for digestive health services requires expanding capacity beyond specialty settings. Disparities in GI care mirror those in oncology and cardiology but are uniquely shaped by dependence on procedural access, timely endoscopy, and screening coordination. Geographic maldistribution of specialists and limited endoscopy capacity make GI care particularly vulnerable to delays and fragmented follow-up. Expanding the role of primary care physicians represents a key opportunity. Structured e-consults enable timely specialist input without in-person visits, improving triage, reducing unnecessary referrals, shortening wait times, and increasing clinician confidence. Advanced practice providers are another critical mechanism to bridge access gaps. Within structured, team-based models, APPs can manage routine visits, post-procedure follow-up, medication titration, and care coordination. Task-shifting models in liver disease and HCV management demonstrate that trained non-specialists can achieve high cure rates and effective linkage to care. Establishing competency standards, quality metrics, and ongoing education is essential to ensure safety and consistency. Together, strengthening primary care capacity, embedding e-consults and tele-mentoring, and expanding the GI workforce through APPs form a cohesive strategy to alleviate specialist shortages, improve timely access, and reduce disparities across the GI care continuum.

Research Gaps

Despite a growing body of research on disparities in GI care, several important gaps limit our ability to fully understand and effectively address inequities. One major limitation is the lack of detailed data on specific population subgroups. While much of the literature focuses on broad racial categories or insurance groups, far less is known about within-group heterogeneity, even though GI risk profiles vary substantially across subpopulations. For example, distinct Hispanic subgroups (e.g., Mexican vs. Puerto Rican) have different rates of gallbladder disease, and Asian subpopulations (e.g., South Asian vs. East Asian) differ in risks for gastric cancer and HBV. Data on Native American and Alaska Native populations remain sparse outside the Indian Health Service, despite their unique challenges related to geographic isolation and chronically underfunded healthcare facilities. Refugees, asylum seekers, and undocumented immigrants—who often experience the most severe access barriers—are rarely captured in administrative datasets. Future research must prioritize oversampling and targeted study of these smaller but high-risk communities to guide tailored interventions.

Another major gap lies in understanding how multiple disadvantages combine to shape GI outcomes. Existing studies typically examine one demographic characteristic at a time, yet many patients face overlapping barriers. While the term "intersectionality" is frequently invoked, evidence suggests that insurance status and coverage limitations underlie a large share of these compounded disadvantages, influencing where patients can receive care, which specialists they can access, and what treatments are authorized. For example, a low-income, rural Black patient is not only affected by race and geography but is also disproportionately likely to rely on Medicaid or be uninsured factors that directly shape access to colonoscopy, antiviral therapy for HCV, advanced IBD treatments, or transplant evaluations. Understanding these interactions requires research designs that explicitly

analyze insurance-related constraints as core drivers rather than peripheral covariates.

There is also a need to move beyond documenting disparities toward uncovering why they occur. Many studies report lower procedure rates, slower uptake of therapies, or delayed diagnosis but provide limited insight into the mechanisms—whether related to patient preferences, provider practice patterns, administrative processes, or institutional resources. Mixed-methods approaches, detailed chart reviews, and workflow analyses can help determine whether, for example, lower EGD rates for Black patients with upper GI bleeding stem from resource limitations in safety-net hospitals, delayed presentation, patient refusal, or differences in clinical decision-making. Mechanistic insight is essential for designing precise interventions.

As GI care evolves, equity in access to new technologies and therapies also requires close monitoring. Differences in use of FIT versus colonoscopy, multitarget stool DNA testing (e.g., Cologuard), and advanced biologic or small-molecule therapies for IBD may widen gaps if coverage is inconsistent or out-of-pocket costs remain high. Similarly, liver transplant allocation policies—including MELD exception points and geographic sharing rules—carry equity implications that warrant continuous evaluation. Ensuring early and equitable access to emerging treatments for conditions such as non-alcoholic steatohepatitis or eosinophilic esophagitis will require deliberate planning, including patient assistance programs, Medicaid policy review, and equitable clinical trial representation.

A further gap is the lack of longitudinal, life-course research. Most studies offer cross-sectional snapshots and cannot assess how disparities evolve over time. Longitudinal analyses could determine whether differences in polyp detection led to higher metachronous CRC rates or whether childhood inequities in nutrition, *Helicobacter pylori* exposure, or pediatric IBD management influence adult outcomes. Understanding these temporal patterns is vital for designing preventive strategies earlier in the life course.

Importantly, the field lacks rigorously evaluated interventions specifically designed to reduce GI disparities. Much of the existing evidence is descriptive or indirect. What is needed now is research that tests solutions at scale. Examples such as Doubeni et al. demonstrate that disparities can be eliminated: in this study, a structured, centralized outreach program raised CRC screening rates among Black patients to equal or higher levels than White patients, showing that system-level interventions can meaningfully close gaps [42]. More trials of this kind—navigation programs for HCV therapy, financial incentives for screening in Medicaid populations, telehealth-supported IBD management, or streamlined pathways for UGIB triage—are urgently needed, alongside implementation studies evaluating real-world integration, sustainability, and cost-effectiveness.

Finally, GI disparities research must increasingly incorporate patient-cantered outcomes, not only utilization metrics. Measures such as patient satisfaction, quality of life, perceived discrimination, and trust in the healthcare system offer critical insights into long-term engagement in care. Understanding how minority patients experience colonoscopy preparation, telehealth encounters, or discussions of transplant eligibility can uncover barriers invisible to administrative datasets. Combining these perspectives with big data approaches—such as natural language processing to detect bias in clinical notes, geospatial mapping of service gaps, and real-time monitoring of digital divide metrics—will provide a more holistic understanding of disparities. Encouragingly, federal agencies are expanding funding for health equity research, and health systems are investing in preventive and population health strategies, creating new opportunities to develop innovative, practical, and scalable solutions. Partnering with community advocacy organizations and patient groups will be essential to ensure that future interventions are grounded in lived experience and have the support needed for meaningful, long-term change.

Conclusion

In conclusion, disparities in GI care access and outcomes in the United States reflect the cumulative effects of structural inequities, socioeconomic barriers, racial and ethnic disparities, and systemic shortcomings in healthcare delivery. While progress has been made through targeted interventions, policy reforms, and innovations such as telemedicine and patient navigation, substantial gaps remain. Addressing these challenges will require sustained, multifaceted efforts that integrate clinical, community, and policy-level strategies, coupled with robust research to inform data-driven solutions. Only by cantering equity in every aspect of GI care can we ensure that all populations, regardless of race, income, geography, or social standing, receive high-quality, timely, and effective gastrointestinal healthcare.

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Declarations

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