

White Paper

Co-creating a New Health Ecosystem

How rethinking product strategy can transform patient outcomes, drive system readiness, and improve commercial performance

CRISTINA ALZAGA-CHAUDHRY, EMEA Lead, Commercial Strategy & Transformation, IQVIA **BRIAN NEEDHAM**, Associate Principal, Strategy Consulting, IQVIA



Table of contents

Executive summary	1
1. Introduction: A crossroads for healthcare and life sciences companies	3
2. Map to understand the disease area	6
3. Model to prioritize win-win-win opportunities	8
4. Act to co-create mutual value	10
5. Benefits and next steps	12
References	14
Acknowledgements	15



Executive summary

Health systems are under unprecedented strain — demand for better outcomes is rising, yet costs continue to climb. To stay ahead, life sciences companies must evolve from drug developers to partners in healthcare transformation. A new question arises: How might the life sciences industry elevate its stature as a strategic partner by playing a more prominent role in mapping, modelling, and acting on opportunities to transform care? This whitepaper introduces IQVIA's 'Map, Model, Act' framework to help life sciences companies redefine their approach to asset, brand, and disease area strategy with a starting point in the market versus the traditional emphasis on product profiles and brand benefits. Done well, this elevates the company's role in healthcare, enhances collaboration with health systems, and drives sustainable patient, health system, and business impact. Through three core pillars, the Map, Model, Act framework enables life sciences companies to:

- **Map** the disease landscape and related patient journeys to better pinpoint actionable unmet needs and care gaps.
- **Model** tangible strategies that reconcile health system priorities and company objectives.
- Act through targeted interventions and cross-sector partnerships to accelerate impact.

By leveraging data-driven insights and real-world evidence, this approach helps life sciences companies focus resource allocation, enhance patient access, and strengthen the ability of health systems to adopt innovation.

Case studies in rare disease and oncology illustrate the tangible benefits of the Map, Model, Act framework, demonstrating how strategic collaboration can improve patient outcomes while positioning life sciences companies as key drivers of healthcare innovation.

Adopting this next-generation framework allows life sciences companies to:

- Align with health system needs and measurement of value.
- Alleviate operational pressures that would otherwise slow down product or portfolio uptake.
- Improve patient access and outcomes.
- Enhance market positioning and commercial performance.

In a healthcare landscape challenged by financial and operational strain, those who embrace this approach will not only drive innovation but also trust in their ability to build a more resilient, efficient, and effective healthcare ecosystem.



1. Introduction: A crossroads for healthcare and life sciences companies

Health systems and life sciences companies alike are under mounting pressure to deliver better value — yet despite rising expenditures, health outcomes are not improving in most high-income countries (*Figure 1*). The current trajectory is unsustainable and health systems will soon — if not already — reach a breaking point and demand more from their partners, including life sciences companies. Those who fail to proactively create better value will be forced to take cost containment measures in the form of lower prices for new and existing medicines, a trend seen recently with the Inflation Reduction Act in the U.S.¹ Price growth is already slowing, resulting in many life science companies increasingly looking to cut costs.²



Source: WHO, OECD, IQVIA Analysis

World Health Organization³ and OECD data⁴ on health expenditure in the largest European economies and the U.S. shows that the cost of a healthy life year has increased by more than 25% since 2010. Health costs are rising due to factors that include ageing populations, larger numbers of patients requiring complex and personalized care, and the need for new health system delivery models to address these changes. Meanwhile, life expectancy has remained static because of counterbalancing forces such as a lack of focus on disease prevention within health systems, late intervention, and the impact of mental health issues on physical health. With its continued investments into new therapies and diagnostic capabilities, the life sciences industry is increasingly expected to be a contributor to improvement in health outcomes and potential efficiencies in health expenditures. However, product launches face a more challenging environment for commercial returns, as documented in IQVIA's recent publications on Launch Excellence.^{5,6}

Graffiti on the ivory towers

One part of the problem is insular thinking resulting from silo mentality. To take one example, the life sciences industry's traditional focus on engagement with Key Opinion Leaders (KOLs) to shape new guidelines that favorably position innovative medicines sometimes fails to address real-world healthcare constraints. This is because healthcare stakeholders lack a common framework from which to jointly address core problems and opportunities. This disconnect has real consequences — across disease areas, only about 1 in 3 patients receive a new treatment that could benefit them. The barriers to uptake are diverse and have implications on the contribution of each of the functions involved in commercialization including, for example, Commercial, Medical, and Market Access. As *Figure 2* illustrates, even small barriers across the disease management pathway can result in significant losses in value and detriment to patient outcomes. These problems are almost universally felt and accepted, though too often the response has been to pass or point blame rather than join together in collective reform. Perceptive leaders are asking: what new requirements does this pose for functions involved with commercialization, both individually and in their cross-functional ways of working?

Figure 2: Value loss along the disease management pathway



*Varies by therapeutic area; Source: IQVIA analysis

An illustration of the difficulties involved in delivering the promise of pharmaceutical innovation, based on an IQVIA analysis of bottlenecks to care in a rare disease. This example shows how the benefits of product innovation can be diluted by the shortcomings of health systems. Difficulties in accessing care, over-stretched and under-equipped physicians, delays in diagnosis and specialist referral, insufficient testing, and lack of follow-through may all result in the patient not receiving the best medical treatment. Other studies have found similar situations in different diseases.⁷⁸

A new playbook for life sciences companies: Map, Model, Act

There is another path; one that creates a win-winwin for patients, health systems, and life sciences companies alike. In an increasingly complex healthcare environment, the new approach we outline in this paper can build truly adaptive and market-centric asset and disease strategy to overcome system barriers and improve health outcomes.

To drive meaningful healthcare transformation, life sciences companies must redefine their relationships with health systems. By extending its role beyond drug development and marketing and towards health system strengthening, the industry can lead in improving patient outcomes while unlocking greater value from its innovations. This requires a new approach in mapping disease environments, modeling outcomes, and acting not as a vendor of set product benefits but as a true strategic partner to co-create a more efficient and effective health ecosystem that unlocks the potential of innovation.

We outline a route to this future through a novel framework to life sciences product and disease area strategy that we call Map, Model, Act. This approach brings a wider lens to strategy and improves the connectivity between the life sciences company's priorities and patient and health system needs. Case studies from IQVIA's pioneering work with life sciences clients show that applying the Map, Model, Act framework can simultaneously benefit patients, health systems, and the life sciences company's bottom line.



Deep dive: Health system needs are evolving — life sciences product strategy must evolve too

The increasing complexity of disease management is exposing the limitations of traditional life sciences product strategy, which has relied on linear pathways and singular patient journeys. Today's healthcare landscape is far more dynamic.

Health systems today are managing a diverse range of patient types, escalating comorbidities due to advances in diagnosis (*Figure 3*), and growing patient expectations for personalized care.

Take, for example, a patient with diabetes who also has obesity and cardiovascular disease. Twenty years ago, their primary care provider would have managed their treatment. Today, disease specialists fulfill that role, resulting in overlapping treatment and the need for coordination across therapies. Patients are also more informed and engaged in treatment decisions.

Achieving the best health outcome for the patient requires a consolidated view of treatment and shared decision-making that rises above individual therapeutic areas. Mastering this requires a comprehensive understanding of cardiometabolic patient profiles, their unmet needs, patient journeys, treatment pathways, and intervention points, as we elaborated in another whitepaper.⁹ On top of this, payers are playing a more active role in the management of patient care, adding further complexity to the process. For example, formularies embedded in electronic medical record systems may mandate certain first-line treatments as a first step, limiting physician autonomy.

For life sciences companies to stay relevant in this new health landscape, a more collaborative mindset and different ways of addressing patient needs is required. Success demands a health systemcentric and cross-functional strategy, using a mix of commercial, medical, patient advocacy, clinical development, and even market access tactics to engage stakeholders and create an environment where product innovation can thrive.

Figure 3: Patient populations are more complex



Source: IQVIA LAAD, January 2018 to June 2023

As explored in IQVIA's recent whitepaper, there is significant overlap of disease in cardiovascular-metabolic patient populations.¹⁰ The figure above, built off data in the U.S. for patients with prescription or diagnosis claims data in 2022 or 2023.

*Represents number of patients in each Venn diagram overlap (U.S. data).

**Represents number of patients in a single therapeutic area (i.e. have no comorbidity overlap) (U.S. data).¹¹

Note: due to diagram spacing, the overlaps for obesity and renal only, and obesity, diabetes and renal only are not shown.

2. Map to understand the disease area

A strong mapping of ecosystem challenges and opportunities is essential for robust asset or disease area strategy and leads to better outcomes for key stakeholders and their patients. Most life sciences asset teams have mapped the patient journey and identified pain points, but the sheer volume of available data is growing at an unprecedented rate: IQVIA alone processes more than 9 billion healthcare transactions daily.

Market winners will not be those with the *most* data, but rather those with the right data. This requires the ability to infer and extrapolate new and actionable insights from a data bank, a challenge that many struggle with due to (*Figure 4*):

- Unreliable or insufficient data, *e.g., relying solely on Key Opinion Leader input.*
- Gaps in data coverage, *e.g., failing to include patient perspectives.**
- Internal focus, e.g., messaging on documented brand benefits and prioritizing brand positioning over real physician or patient unmet needs.

- Fragmentation, *e.g.*, *misalignment between medical* and commercial strategies as result of irreconcilable data foundations.
- Poor or no link to strategy, e.g., failing to connect strategic imperatives to care gaps and not being able to accommodate local market priorities.**



Figure 4: Internal organizational challenges to maximizing potential of data assets



Many insights generation initiatives fail to provide a holistic and robust starting point for cross-functional decision-making. While most asset teams rely on a patient journey or various physician and stakeholder insights, they present an incomplete view of the holistic disease management map and do not support strategic priority-setting.

*As well as patient/provider/payer motivations, emotional drivers, decision-making processes, or constraints **Such as system-level unmet needs e.g., capacity, digital tools, lack of overall or specific funding, deprioritisation of a therapy area from a policy perspective, etc.



Achieve a granular view of opportunity

A robust, data-driven view of opportunity requires combining multiple sources and triangulating insights into a single, reliable source of truth. *Figure 5* shows the breadth of sources that might be tapped for effective disease management mapping.

Mapping must also account for local market nuances. Since healthcare is delivered, measured and experienced locally, product and disease area strategy must align with the realities of different patient populations, health systems, and their specific pain points. For example, in oncology, a leading global pharmaceutical firm partnered with IQVIA to create a comprehensive disease management map (*Case Study 1*). By systematically and quantitatively mapping treatment pathways, identifying care gaps, and integrating real-world data across multiple oncology indications, the company is able to prioritize critical actions and refine its evidence-generation strategy to drive more targeted interventions.

Case Study 1: Mapping the transformation of oncology care

A global pharma leader in oncology sought to identify care gaps, prioritize evidence generation needs, and drive meaningful change in patient care.

IQVIA worked with the company to implement a four-step strategy to optimize its collection and interpretation of a disease management map:

- 1. Quantitatively map the treatment pathway and identify care gaps across diagnosis, treatment decisions, and point-of-care.
- 2. Assess the current real-world evidence generation approach and formulate a systematic process to pinpoint evidence gaps.
- 3. Co-design and define interventions, craft pilots, establish metrics and evaluation methods, and identify real-world data assets.

 Establish an expert advisory committee to glean invaluable feedback, insights, and secure stakeholder buy-in to ensure a successful initiative with widespread adoption.

Achieving this required a reconciliation of complex data sources including real-world data, primary market research, ad board insights, clinical development plans, product profiles, payer perspectives, and more. By mapping all disease and patient information into one disease management map across oncology indications, the company is better equipped to prioritize key actions and engage external stakeholders to drive meaningful change at the point-of-care, as relevant for their portfolio.

Figure 5: Potential sources of insights that can be integrated into a disease management map



Often, insights come from integration of disparate data sources and if the connections between these sources are not established, the result is conflicting viewpoints and a narrow perspective. The synthesis across data sources helps understand unmet needs, their relative importance, and what can effectively be done to address them.

However, even within a single health system, there may be regional variations in the treatment pathway for a disease. This can result in, for example, local field teams unsure on where or how to act, particularly if the Global strategy is too restrictive. How, then, can a global disease management map be effectively translated to empower local teams to prioritize actions based on where the greatest impact is possible — ensuring more targeted, effective interventions? The answer is in the model.

3. Model to prioritize win-winwin opportunities

Collecting, connecting and overlaying data is only the first step. True value comes from strong alignment on the interpretation of the disease management map and what it means for health systems, patients, and the company. This alignment is needed to inform priorities and drive clear, actionable decisions, which is where modeling plays a crucial role: a well-designed model synthesizes relevant data, links it to desired outcomes, and even sets the right Key Performance Indicators (KPIs) to empower account teams, the frontline, and strategic health system partners with the autonomy to make informed decisions at the local level. One of the biggest challenges life sciences companies face with modeling strategic options is in drawing the link between potential activities and target outcomes. Consider the goal one pharmaceutical company recently had: increasing the number of patients on a second-line product by 10% within three years. Together with IQVIA, the company was able to define the potential strategic options as:

- Option 1: Raising disease diagnosis rates by 30% over two years.
- Option 2: Increasing the proportion of patients treated in a Center of Excellence by 15% within one year.



However, defining these options is only one step in the process. For each option, companies must also weigh impact on the primary objective of numbers of patients on second-line treatment, the time it will take to realize the benefits of this intervention, and the costs involved.

A robust disease management model provides the assumptions and calculation logic for this analysis to enable data-driven strategic decisions. In the abovementioned scenario, increasing diagnosis rates will impact more patients, but delayed symptom onset could mean these newly diagnosed patients will not require second-line treatment any sooner. These modelled outcomes can be brought to healthcare systems to jointly align on the areas of highest priority and potential actions each strategic partner can take. Beyond guiding strategy, modeling also enhances performance measurement. In the scenario above, the company can set a KPI on the percentage of patients treated in a Center of Excellence. With the disease management map as a baseline, additional KPIs can be set dynamically, ensuring teams have clear, adaptable targets aligned with the overarching ambition while allowing for local flexibility. If, for example, the local team assesses that all their patients are already being treated in a Center of Excellence, the relative benefits in the model change, and it may make sense for this local team to then work on diagnosis instead.

Another real-world example of modeling is presented in *Case Study 2*.

Case Study 2: Modeling patient numbers and time to impact

A mid-sized pharmaceutical company was preparing to launch its second-line asset for a rare disease. The company saw significant opportunities for mutual value from improving diagnosis rates, treatment initiation, and second-line treatment adoption. However, without a clear roadmap, prioritizing investments along the patient journey was challenging.

To address this, IQVIA developed a disease management map that enabled identification and comparison of 12 discrete investment opportunities along the patient journey (*Figure 6*). Through robust modeling of epidemiological studies, claims data, physician insights, reimbursement criteria and patient record forms, each opportunity was assessed in terms of numbers of patients on treatment and the time to impact (i.e. its potential to drive brand uptake, time to results, and feasibility).

The analysis revealed that some investment opportunities, initially perceived as high impact, proved less viable when considering feasibility and time to results. This understanding enabled crossfunctional alignment on the strategic imperatives for launch success.

Figure 6: Comparison of investment options

Investment opportunity	Attractiveness Pre-modelling		Attractiveness Post-modelling		
	# Of patients impacted (based on market research inputs alone)	2	Impact on brand uptake	Time to results	Feasibility
Improve diagnosis rates					
Increase referral rate to centers of excellence	•			•	

An effective model will synthesize the right data, link it to outcomes, and set KPIs that empower decision making within the health system. Understanding where the leakage points lie is only the first step; robust decision-making rests on the ability to assess what can be done to address the leakage point, the patient and brand impact of doing this, and the relevant costs/feasibility.

4. Act to co-create mutual value

Implementing the outcomes of modeling requires a multilateral approach across life sciences companies, healthcare providers, and other strategic partners. However, many initiatives are delayed due to one or more of the following:

- Lack of conviction or a compelling business case to justify investment.
- Failure to communicate mutual value to potential partners.

• Lack of clarity on the best ways to implement and measure change. Insufficient trust and ability to articulate shared metrics defining success.

A structured Map, Model, Act approach removes these barriers. Mapping and modeling the disease ecosystem with a focus on mutual value enables life sciences companies to:

- Articulate a clear value proposition both internally and externally.*
- Foster buy-in from external partners by inviting them into the problem-solving process, advancing towards effective and sustainable partnerships.

*Including mapping the opportunity to existing publicly announced disease or public health policies, national/regional/local healthcare system action plans, innovation plans, digitalization plans, etc.



 Prioritize high impact opportunities using datadriven insights.

A model underpinned by quantified disease area mapping identifies the areas with the greatest potential impact and allows for "double-clicks" to pinpoint the exact market-specific problem(s) and potential solutions. This enables strategic partnerships to effectively solve system-level challenges (*Case Study 3*).

Case Study 3: Advancing the lung cancer care pathway in the UK

The UK has one of the lowest lung cancer survival rates globally. Early diagnosis is critical to successful treatment, but the UK public health system lacks the capacity to address this challenge on a systematic scale. IQVIA, AstraZeneca and the National Health Service (NHS) joined forces to find a scalable solution.

By aggregating data from multiple sources, we were able to find the major bottlenecks in the lung cancer care journey. Leveraging IQVIA's access to real-world evidence, we mapped variations in the care pathway at both national and regional levels, revealing significant disparities. To help address these gaps, deep dive assessments across local health centers were used to understand local needs and barriers, which in turn informed modeling of localized action plans (*Figure 7*).

Implementation of project recommendations, such as using private providers to increase capacity, resulted in reduced review times and accelerated diagnosis for patients, improving their prospects of accessing life-saving treatment.¹²

Applying a Map, Model, Act approach is helping more patients access the right treatment at the right time. The project has also had an impact at the policy level through new guidelines on how multidisciplinary teams should make decisions on patient treatment.

Figure 7: Examples of local action plans



Dashboards like this help local teams pinpoint potential focus areas and, importantly, adjust when local dynamics change. Once one site starts seeing improved metrics, the teams can then align on the next priority.

With a focus on mutual value, the Map, Model, Act approach to asset and disease area strategy forms the basis for stronger cross-functional strategy and closer collaboration between the life sciences industry and health systems. The framework offers to align stakeholders, ensuring that innovations not only reach patients faster and more effectively, but also drive sustainable healthcare improvements.

5. Benefits and next steps

By applying Map, Model, Act to asset or disease area strategy, life sciences companies create stronger cross-functional alignment and unlock value at every level (*Figure 8, Figure 9*). Because it focuses on outcomes as opposed to product or brand objectives, it is cross-functional at its core and can serve different purposes along the lifecycle of an asset. For example, the same map and model can inform indication prioritization decisions, evidence generation needs, and later a go-to-market approach based on the key opportunities for transforming care.



Figure 8: Map, Model, Act as a foundation to key cross-functional deliverables

Traditionally, life sciences companies attempt to synthesize cross-functional insights into the brand strategy. However, this often comes too late — after key deliverables like the evidence generation plan or value dossier are already outlined — or without sufficient stakeholder buy-in, leading to deliverables that lack alignment or fail to articulate actionable strategies and tactics. Taking a Map, Model, Act approach embeds a single-source-of-truth that serves as the foundation for key cross-functional deliverables, ensuring early alignment and actionability.

Figure 9: Benefits of Map, Model, Act framework



The Map, Model, Act framework creates win-win-win opportunities that benefit life sciences companies, health systems, and patients alike.

Develop next generation product and disease area strategy

In an evolving healthcare ecosystem, traditional approaches to product strategy are no longer sufficient. To succeed in an increasingly challenging commercial environment, life sciences companies must rethink how they map disease, define market opportunities, and take action to drive impact.

The Map, Model, Act framework, which is grounded in data-driven insights and real-world application, helps companies develop next generation product and disease area strategies that are fit for today's healthcare environment. By leveraging this approach, life sciences companies can:

- Identify high-impact investment opportunities through precision disease mapping.
- Optimize decision-making with real-world data.
- Align cross-functional teams around a shared vision for market success.
- Accelerate launch readiness by integrating real-world data insights into strategy.

A future-fit product strategy requires collaboration, agility, and the ability to anticipate change — all of which are embedded within the Map, Model, Act framework. As the industry pivots to next-generation disease area and product strategies, patients and health systems will benefit from value propositions that are more robust and carry the promise of lasting impact.



References

- Greenwalt, Luke. How the Inflation Reduction Act is Changing the Rules in life sciences Pt. 5. IQVIA. October 6th 2023. <u>https://www.iqvia.com/locations/united-states/blogs/2023/09/how-the-inflation-reduction-act-is-changing-the-rules-in-life-sciences-p5</u>
- 2. Alzaga-Chaudhry, Cristina et al. Re-defining OPEX Modelling for a Competitive Future. IQVIA. 2022. <u>https://www.iqvia.com/-/media/iqvia/pdfs/library/white-papers/redefining-opex-modelling-for-a-</u> <u>competitive-future-_iqvia-bcs-discussion.pdf</u>
- 3. Global Health Expenditure Database and Global Health Estimates. World Health Organization (WHO). Accessed April 1st, 2024. <u>https://www.who.int/</u>
- 4. Perceived Health Status. OECD Health Statistics. Accessed April 1st, 2024. https://www.oecd.org/en/data/datasets/oecd-health-statistics.html
- 5. Rickwood, Sarah et al. Launch Excellence VIII. IQVIA. July 12th, 2023. https://www.iqvia.com/library/white-papers/launch-excellence-viii
- Rickwood, Sarah and Scott, Kirstie. Overcoming Pharma's Launch Performance Problem. IQVIA. October 26th, 2022. <u>https://www.iqvia.com/library/white-papers/overcoming-pharmas-launch-performance-problem</u>
- Gores, Markus et al. Achieving Oncology Launch Excellence. IQVIA. July 24th, 2024. https://www.iqvia.com/library/white-papers/achieving-oncology-launch-excellence
- 8. Lutzmayer, Stefan et al. From Orphan to Opportunity: Mastering Rare Disease Launch Excellence. IQVIA. April 30th, 2024. <u>https://www.iqvia.com/library/white-papers/from-orphan-to-opportunity-mastering-rare-disease-launch-excellence</u>
- 9. Gores, Markus et al. Achieving Excellence in Commercializing Cardiometabolic Innovation. IQVIA. March 25th, 2025. <u>https://www.iqvia.com/locations/emea/library/white-papers/achieving-excellence-in-commercialising-cardiometabolic-innovation</u>
- 10. Gores, Markus et al. Achieving Excellence in Commercializing Cardiometabolic Innovation. IQVIA. March 25th, 2025. <u>https://www.iqvia.com/locations/emea/library/white-papers/achieving-excellence-in-commercialising-cardiometabolic-innovation</u>
- 11. IQVIA LAAD, January 2018 to June 2023
- 12. Aelerating the Lung Cancer Patient Pathway. IQVIA. July 1st, 2024. <u>https://www.iqvia.com/locations/united-kingdom/library/videos/accelerating-the-lung-cancer-patient-</u> <u>pathway#:~:text=PATHFINDER%20was%20a%20collaborative%20initiative%20between%20the%20</u> <u>NHS%2C,changes%20to%20facilitate%20earlier%20diagnosis%20of%20lung%20cancer</u>

About the authors



CRISTINA ALZAGA-CHAUDHRY EMEA Lead, Commercial Strategy & Transformation, IQVIA

Cristina Alzaga-Chaudhry leads the EMEA Commercial Strategy

practice within IQVIA, covering launch and go-tomarket at asset and therapeutic area level along with the design of new operating models underpinning commercialization. Cristina's experience stretches across functions and stages of the product lifecycle and she led several innovative projects from white paper to pilot and launch during her career. Before joining IQVIA Cristina spent 18 years at Accenture of which the last three in the role of Managing Director. Areas of particular interest include the changing nature of pharma's customer model and the societal role of pharma.



BRIAN NEEDHAM Associate Principal, Strategy Consulting, IQVIA

Brian Needham has been working with health systems, payers, and

pharmaceutical companies for 10+ years on creating better value and outcomes. At IQVIA, he specializes in using the Map, Model, Act framework to extract more value from data and insights and form cross-functional strategy that can create 'triple wins' for patients, health systems, and pharmaceutical companies.

Acknowledgements

This white paper was supported with expertise from IQVIA Real World Analytics and Insights, IQVIA Integrated Research, IQVIA Brand and Commercial Strategy, and our external colleagues and partners. In particular, the authors would like to thank Jessica Abel, Marine Raveleau, Markus Gores, Matic Meglic, Morgan Calvez, and Troels Soerensen for their valuable contributions to the development of this publication.

CONTACT US CRISTINA ALZAGA-CHAUDHRY cristina.alzaga-chaudhry@iqvia.com

> BRIAN NEEDHAM brian.needham@iqvia.com

iqvia.com

For information on how IQVIA can assist you to map, model and act on key opportunities for transforming healthcare, contact the authors.

