

# Can the implementation of net gain requirements in England's planning system be applied to health?

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This Personal View considers the relationship between spatial planning and health and the potential benefits of requiring health net gain from land use decisions and new developments. We explore how a health net gain objective could be applied in spatial planning policy and practice to improve people's health and wellbeing, using England's implementation of a biodiversity net gain objective as a model. This Personal View emphasises the need for a systems approach to the definition and strategic coordination of health gains, recognising the breadth of health determinants and inter-related economic, environmental, and social policy objectives. By considering the potential application of a net gain principle to health in spatial planning, we offer valuable insights into how the spatial planning system could be used to build the conditions of health creation. A road map is provided for exploration of health net gain in other national contexts in support of the operationalisation of global urban health initiatives.

## Introduction

Despite considerable evidence linking environmental attributes to the health of ecosystems and ultimately to human health, the global burden of disease and premature deaths attributable to risk factors associated with poor urban environments, such as air pollution and physical inactivity, remains substantial.<sup>1-3</sup>

The creation and development of healthy places is challenged by widening health inequalities and associations between place, deprivation, and issues of agency and power.<sup>4</sup> Efforts to deliver positive health outcomes through urban development are hindered by insufficient public resources, competing policy objectives, cultural attitudes towards health, a scarcity of robust health valuation, and the myriad actors involved in the planning system.<sup>5</sup> These challenges underscore the need for innovative, comprehensive, consistent, and clear approaches to sustainable urban development that systematically prioritise health and wellbeing. This need is reflected by responses to international initiatives such as the New Urban Agenda<sup>6-8</sup> and is long recognised in England,<sup>4,9</sup> in which notable spatial inequalities and a discretionary (consent-based) planning system invite public health advocacy.<sup>10-12</sup> In this Personal View, we explore how health might be bolstered considering the introduction of net gain objectives in environmental and spatial planning policies in England from 2021.<sup>13</sup>

Spatial planning is a socio-spatial and integrative process that shapes present and future places through visions, actions, implementation strategies, and coproduction.<sup>14</sup> In English statutory spatial planning policy the objective of sustainable development is paramount, augmenting national commitments to pursue global Sustainable Development Goals. Although planning policies and decisions "should aim to achieve healthy, inclusive, and safe places", health sits within an overarching social objective.<sup>15</sup>

English spatial planning policy aspires to environmental net gain (ENG), explicating an ambition to improve the environment from pre-development baselines and address environmental pressures such as

air and water pollution, which are also determinants of health. This ambition is part of a wider approach to natural capital, encompassing national and international frameworks accounting for assets and ecoservices derived from nature.<sup>16,17</sup> The transferability of narrower forerunners to ENG—such as biodiversity net gain (BNG), a requirement increasingly adopted by national governments<sup>18</sup>—merits discussion.<sup>19</sup> Our Personal View argues that parallels exist between the protection and improvement of nature and health, and that lessons from the operationalisation of BNG in the English planning system can inform the development of a comparable framework for health that could be applied in other national contexts, supporting international actions to bring health to the fore.<sup>8</sup> Recognising emerging arguments for the consideration of health as a distinct policy objective and outcome,<sup>7,8,20-22</sup> this Personal View explores a new mandate for health net gain (HNG) in spatial planning.

The next section provides a brief overview of BNG and the development and design of net gain approaches in the English planning system. The following section explores an HNG approach in the same context, and describes conceptual, methodological, and operational considerations arising at the development project and system levels, before proposing some potential ways forward from the status quo. Key milestones and opportunities are generalised for consideration in other national contexts. The paper concludes with key points and a road map inviting further conversation.

## Biodiversity net gain

England is one of the most nature-depleted countries in the world.<sup>23</sup> Accelerating land-use change is implicated in the historic loss of habitats, biodiversity,<sup>24</sup> and ecoservices essential to human health such as the provision of food and fresh water, climate regulation, and sites and opportunities for recreation.<sup>25,26</sup> Planning reforms in 2011 introduced strategies to reverse biodiversity losses and move towards net gains,<sup>27</sup> responding to broader

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	Themes	Key considerations	Example applications
Preventing health harms	Threats, risks, exposures, harms, and safety	Pathogens and associated outcomes	Preventing or minimising harms associated with environmental hazards such as noise, air pollution, or flood risk
Realising positive health outcomes	Healthy places, settings, opportunities, and behaviours	Salutogens and associated outcomes	Creating health by improving access to, quality of, and use of community services, green space and nature, or active travel infrastructure
Narrowing disparities in health	Baseline determinants of health and health statuses, and harms and benefits arising from projects	Spatiotemporal and sociodemographic distribution	Targeting the distribution of benefits to address local health needs and burdens

**Table 1: Health net gain: basic thematic considerations for development projects**

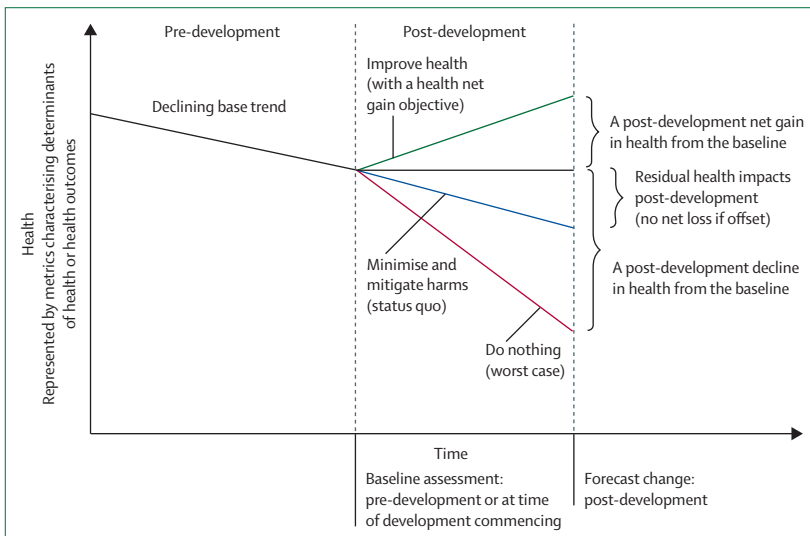


Figure 1: Possible health outcomes following development in an area with declining baseline health indicators

international reflection on the limitations of no net loss (NNL) approaches.<sup>28–30</sup> The basis for NNL is compensation and the offsetting of damages as a last resort;<sup>31</sup> however, these offsets are contentious, requiring characterisation of the level and distribution of guaranteed effects and equivalent compensatory offset schemes, which might not always deliver gains in practice.<sup>19,32–34</sup>

National programmes subsequently developed strategies and frameworks to support the transition to a net gain approach,<sup>35,36</sup> before legislation introduced targets for BNG to be delivered by the English planning system.<sup>13</sup> This transition is notable because net gain objectives embed sustainability principles and move beyond NNL approaches;<sup>34,37–39</sup> the requirement for tangible gains is a crucial step towards protecting and enhancing the natural environment. Although the changed emphasis has been incrementally localised through phased updates of local government planning policies,<sup>40</sup> national net gain requirements have simultaneously incentivised the rapid development of assessment tools and practitioners' guidance.<sup>41,42</sup>

### Underpinning principles and their application

Three principles central to natural capital policies underpin the development of BNG in English policy and practice.<sup>31</sup> The first emphasises the need for net gains and compensation in the event of damage to natural capital assets. Compensation must be in natural capital, rather than in other forms of production. Developers must assess development sites' baseline biodiversity units using a metric based on habitat types and condition, among other factors.<sup>43</sup> Their projects must then deliver measurable improvements on site. If achieving these improvements is impossible or insufficient, other land can be improved, or, as a last resort, credits purchased to improve biodiversity through a nationally administered scheme.<sup>13</sup>

The second principle, established in wider environmental policy and legislation,<sup>44</sup> is the Rio Declaration's polluter pays principle, which seeks to internalise externalities by making polluters bear the costs of the damage they cause. This principle makes the proponents of development projects accountable for their environmental impacts. The first two principles together have an important implication: no acceptable amount of damage can be written off, which incentivises the diligent application of mitigation hierarchies to avoid, minimise, and mitigate harm.

The third principle is public goods for public money. This principle directs subsidies towards the production of non-excludable, non-rivalrous public goods that will not be provided by markets. Although public goods are often supplied by governments and paid for collectively, both the public and private sectors can produce them.<sup>45</sup> Spatial planning is potentially a means to secure nature's benefits for all members of society, coordinating both public and private contributions.<sup>46</sup> Requiring development to contribute to the public good associates the net gain approach with wider principles of redistribution, inclusivity, equity, and communality. In practice, however, maximising societal benefits can create tensions with ecological mandates, and the handling of environmental benefits is subject to debate.<sup>29,47,48</sup>

If spatial planning policy requires measurable environmental improvement and compensation for environmental damage, could the same approach be taken for public health? Associations between pollution and health are recognised in planning policy and mitigation hierarchies analogous to the principles of ecological good practice.<sup>15</sup> This Personal View now focuses on the transferability of BNG's approach to health.

### Health net gain

HNG has not been formally defined in policies related to spatial planning and health. Although the phrase HNG and its variants are widely used in the context of health evaluations, academic and government reports within the past 5 years have specifically referred to net gain objectives or approaches.<sup>20,22</sup> One example<sup>20</sup> suggested a net health gain principle for plans and policies that could

improve air quality and health, applying a hierarchy moving beyond the prevention of emissions and exposures to air pollution to the delivery of overall health benefits.

The implication of a planning system HNG objective is that development projects are required to show net gains for health. Hereafter we use the HNG objective to refer to a specific mandate within the planning system, while the HNG approach refers to the broader set of tools and frameworks used to achieve HNG. A simple illustration of considerations arising for development projects is shown in table 1.

In figure 1, we explore the application of an HNG objective and introduce a problem. Potential health trajectories are outlined in response to urban development within an area characterised by declining health baselines. Without any form of strategic intervention, a so-called do nothing approach to harms worsens the pre-development trajectory. The traditional path of minimisation and mitigation suggests that although negative effects of individual projects could be offset, due to existing health challenges, inefficacious implementation, or displacement effects, such strategies might not reverse pre-development trends even if they exceed what is typically required.<sup>49</sup> Gains, therefore, should be considered both at the project and population, or system, levels.<sup>46</sup> If development is to redress health inequalities, aggregate presentations of net gains should be broken down to aid understanding of the differentiated effects of development on different socioeconomic groups.

Having introduced the principles behind BNG approaches and the idea of HNG, we will now explore the key conceptual, methodological, and operational considerations facing an HNG objective in planning and conclude with some potential ways forward. Our intention is to begin to explore the nature of a journey towards HNG (figure 2) and the potential opportunities and challenges, not to prescribe a definitive objective and approach.

### Conceptual considerations

Conceptual frameworks influence practice.<sup>50</sup> An HNG objective requires a clear definition of health, and this in turn influences the determinants of health to be addressed by spatial planning policies, development projects, and associated assessments. We start from the perspectives of three core public health functions: health protection, health improvement, and health-care public health. The differences and similarities of these three functions are illustrated in figure 3.

Health protection focuses on the prevention of adverse health effects and illness.<sup>51</sup> This framing of health dominates the internationally applied environmental impact assessments of some development projects and the strategic environmental assessments of English spatial planning.<sup>52,53</sup>

Health improvement offers a benefit-oriented world view that is reflected in spatial planning policies and

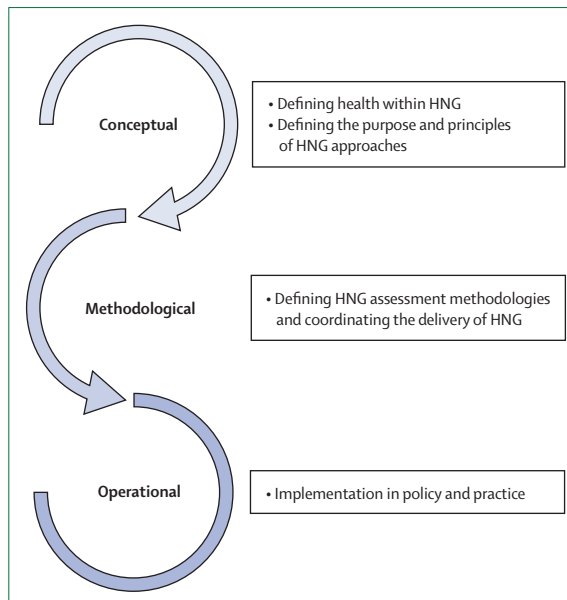


Figure 2: Milestones towards HNG  
HNG=health net gain.

plans seeking to improve wellbeing through development or regeneration. These policies and plans identify links between the built and natural environment and healthier communities,<sup>15</sup> and a substantial number and diversity of health indicators can be applied to physical urban environments.<sup>54</sup>

The current English planning system requires systematic consideration and provision of health-care infrastructure; developers might, therefore, make formal financial contributions to redress increased demands on services. These contributions address the third core public health function: health-care public health.

The core concepts of HNG—preventing and reducing harm, and delivering health and wellbeing benefits—address each functional perspective but face the challenge of their integration, notwithstanding the question of health's place within ENG in policy and practice. White and colleagues argue that public health policy is dominated by social determinants of health frameworks, which are generally directional and exclude feedback mechanisms between health and the environment.<sup>50</sup> Conversely, ecological frameworks might not pursue public health beyond benefits associated with ecoservices; tools associated with biodiversity metrics focus on nature's benefits.<sup>55</sup> We take the view that exploring HNG is a step towards defining the relationship between health and ENG; defining health and its scope is fundamental. Options for defining health and its scope range from narrow biomedical views to broader concepts that introduce additional complexities (figure 3).

Since 1946, the definition of health has evolved beyond the WHO Constitution's conception of "complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity".<sup>56</sup> Biomedical models, critiqued for

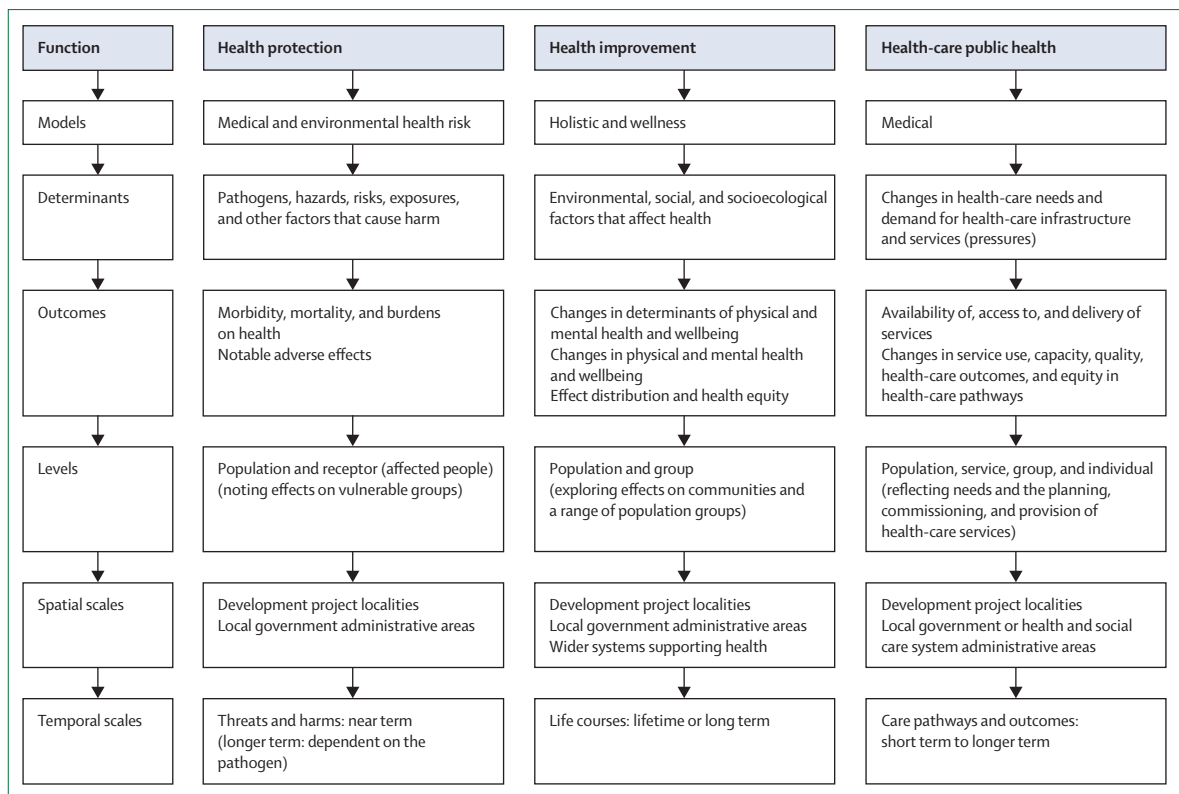


Figure 3: Contrasting typical perspectives on health in spatial planning according to public health function

contributing to the medicalisation of society while inadequately addressing chronic conditions, have given way to social and socioecological models that account for an individual's resources and ability to satisfy needs, achieve aspirations, and respond to challenging environments.<sup>57</sup> The Meikirch model defines health as “a dynamic state of wellbeing emergent from conducive interactions between individuals' potentials, life's demands, and social and environmental determinants”;<sup>58</sup> such wellness models encourage consideration of broader social and environmental contexts over which spatial planning exerts substantial influence. The concept of planetary health—“the health of human civilisation and the state of the natural systems on which it depends”<sup>59</sup>—offers a multifaceted view of the effects of new projects on place-based determinants of health and individual and population health, and the natural processes and ecosystems that enable health from local to global scales.<sup>60</sup>

HNG's principles and subsidiary aims also require clear definition before any approach can be implemented. A conservation principle is strict protection from unacceptable harms through legal mechanisms; ENG approaches also aim to maintain the provision of renewable ecoservices. As illustrated by Birkeland and Knight-Lenihan's concept of positive development through eco-positive design,<sup>34,46</sup> the parallel is for development to protect health while preserving and enhancing the fundamental capacity of places to support and create it. Achieving this

does not end with construction: it requires stewardship and maintenance to sustain the flow of benefits from development and the built and natural environment's settings and services. Both people and places have a role—health creation activities following new development could sustain health gains. The concept of sustainable development entails consideration of intergenerational and intragenerational needs, and net gain frameworks can encourage consideration of longer term periods over which gains are realised, as exemplified by the multidecade conservation covenants that aim to realise and maintain forecast gains in biodiversity. HNG approaches might ultimately aim to address relationships between development lifetimes and people's life courses. Life-course approaches to health identify life stages, transitions, and settings in which substantial health gains can be made.

A final conceptual challenge is posed by disparities in health. The delivery of environmental enhancements by use of offset schemes has the potential to exacerbate or narrow health inequalities, such as by relocating green space closer to or further from deprived communities;<sup>47</sup> the same risk of unintended consequences exists for HNG approaches aiming to improve health at the population level if the distribution of effects is not considered. An HNG objective should therefore reconcile objectives of delivering net gains and narrowing health inequalities. International good practice principles for BNG aim to ensure NNL for people, as well as

biodiversity,<sup>61</sup> but it is important to consider which people. Net gain approaches delineate losses and gains, so provide an opportunity to pay careful attention to the distribution and magnitude of effects. HNG will need to define the spatial, temporal, and sociodemographic bounds within which health and impacts are to be addressed. Health can be considered at the individual, group, or population level; local, regional, national, or international level; or health-care system, societal, ecosystem, or planetary level.<sup>60,62,63</sup> Spatial planning typically frames health through the lens of national, strategic, local, and neighbourhood policies and individual development projects.<sup>53</sup>

### Methodological considerations

Practical challenges will follow the definition of the conceptual framework and scope of HNG. The scope of project-level effects will differ according to the types of developments and determinants. If health is partly defined by subjective elements of wellbeing or local health needs and priorities, project-level definitions of HNG will vary. Although the effects of development on the local environment are tangible and more amenable to measurement, changes in socioeconomic determinants of health can be harder to attribute. Existing guidance for health in environmental impact assessments recognises that separate assessments of different determinants of health and the exclusion of interactions between them hinders discernment of overall costs and benefits,<sup>64</sup> but evaluations of cumulative effects typically aggregate disparate assessments. Systems thinking methods are potentially underused and can inform development of policy and practice, particularly if the role of HNG includes disentangling qualitative relationships between built and natural environments, social activities, lifestyles, and health.<sup>46,65</sup>

### Methodological considerations: at the development level

Development-level assessments are typically done by developers' commissioned consultants, and their complexity must be reconciled with achievability, replicability, and scalability. To estimate net gains, an HNG objective would require assessments and projections of health before and after development. These assessments and projections require data sources and methodological approaches that can adequately characterise baseline and forecast determinants of health, health outcomes, and their spatial and sociodemographic distribution. Where gaps exist, HNG would require the development of new or adaptation of existing methods and standards for assessing and forecasting health impacts, using multiple measures of inequity to recognise the varying effects on different population groups.

Any HNG approach requires a universal framework and metrics that can measure the systematic improvement of health by new development. Health could conceivably

be defined by a single common metric (eg, monetary cost or healthy life expectancy) or a composite measure of weighted subindicators. BNG uses a metric to measure changes in habitats associated with development; HNG might define health by changes in determinants of health, associated health outcomes, or both.<sup>8</sup> Challenges presented by the status quo include the variety of outcome measures used, the non-quantification of adjudged qualitatively unimportant effects, and the varying extent to which causal or associative relationships are known or addressed. Existing frameworks are, however, beginning to articulate pathways from actions to outcomes and the strength of evidence linking health to different aspects of the built and natural environment.<sup>66,67</sup> Although tools and indicators already exist, clarity and consistency of their future use will be essential.<sup>8,53</sup>

### Methodological considerations: across the planning system

The literature around BNG notes that project-level assessments can potentially lead to larger scale environmental degradation and adverse effects if the nature and distribution of effects and benefits are not considered at a system level, which must itself be defined.<sup>31,47</sup> HNG approaches should consider the strategic coordination of many project-level gains and losses and cumulative assessments of changes in the wider planning and health-care systems, especially from a health inequalities perspective. However, the challenges associated with systemwide actors with differing organisational remits, spatial jurisdictions, and priorities should also be recognised. There are further challenges: transboundary effects and dependencies should be considered in a fair and equitable way, and previous characterisation of so-called tipping points is required if they are to be avoided. Consideration of threshold effects on health at system levels potentially aligns the operationalisation of HNG with environmental objectives that seek to prevent irreversible harms to ecosystem and planetary health, defining limits of growth within planetary boundaries. These multi-scalar limits require further operationalisation through development-level assessment, principles, and standards.

### Operational considerations

The implementation of an HNG objective is via planning policies, local spatial plans, and projects, as well as associated processes, such as assessments, planning consultations, and decisions taken by planners and developers. A new ecosystem of policy and implementation requirements is needed, which creates previously absent markets for tools and services to sustain its application and realise and maintain health outcomes.<sup>8</sup>

In response to efforts to plan and design healthier environments, developers expect regulatory certainty and consistent approaches.<sup>68</sup> HNG might, therefore, spur adoption of salutogenic planning policies, building

design codes, and standards, and the delivery of proven development-level interventions. BNG also signals that implementing and delivering HNG relies on effective governance. Local government and other stakeholders rely on a clear framework of laws, policies, guidelines, and processes to integrate HNG into the design, approval, and regulation of new development. New resources, expertise, and professional competencies would be needed to effectively implement HNG across sectors, professions, and levels of government. An immediate priority would centre on training and capacity building to upskill transdisciplinary practitioners.<sup>53</sup> The emergence of spatial planning for health specialists in local government across England serves as one implementation model for scaling up skills and knowledge in the planning system.<sup>53</sup> Such specialisms would provide a focal point for advice, guidance, and credible assessments of HNG.

From a strategic and organisational perspective, integrated policy frameworks can be hindered by institutional barriers and disparate policy world views. When considering the environment and health, some authors<sup>50,69</sup> have noted institutional barriers are centred on the sectoral and budgetary separation of public health and other domains within government, which affects the distribution of costs and benefits of integrative policies. Health-in-all-policies approaches and healthy cities movements signal that multisectoral collaboration and co-agreement between different government departments is a prerequisite to the promotion of HNG as a healthy place and healthy place-making concept. The potential incentive of fast-tracking HNG-compliant development through the planning system offers alignment with other government objectives, with prominent English examples being housing delivery and the levelling up mission.<sup>11</sup> Multi-objective approaches inevitably involve compromise. At the development level, identifying, incorporating, and addressing local concerns through participative community-centred approaches can potentially build trust and provide a social licence to operate;<sup>70</sup> communities and stakeholders with concerns about the effects of developments are potential beneficiaries.

### Potential ways forward: building from the national status quo

#### At the development level

One approach to the practical implementation and assessment of HNG could be the evolution and strengthening of health impact assessment (HIA)—an existing platform for broader evaluations of health impacts and, importantly, benefits. In England, although HIA is established in planning practice, the use of stand-alone or integrated HIAs (within environmental impact assessments or strategic environmental assessments) is discretionary<sup>62,71</sup> and the local criteria triggering HIA requirements vary (eg, according to the scales and types of development), as do the objectives, process, and content of assessments, which are not always incorporated into

developers' or planners' decision making. Uncertainty regarding the objectives or outcomes expected from HIA undermines its use in English spatial planning to protect and improve health.<sup>71</sup>

As an HNG objective requires a universal and clearly defined approach, it can potentially redress limitations in existing practice by formalising expectations and standardising processes. HNG also embeds two overlooked and related HIA aspirations: prospective consideration of health at an early stage (or upstream) of plan or project development, and the maximisation of health benefits.

Existing approaches incorporate preliminary screening and scoping phases that direct the prioritisation of factors to be assessed, considering baseline statuses, affected determinants of health, the related strength of evidence and level of effect, and distributed and cumulative effects (eg, system-level implications and outcomes at spatial scales beyond the immediate locality of development projects). The existing process stages require no radical change, but under HNG an obvious incentive exists for health considerations and assessments to lead the early evaluation of alternatives and design of schemes and projects.

HNG also shifts the emphasis of assessments onto evaluating harms and benefits earlier in the decision-making and design processes. This shift has implications for assessments (eg, HIA, environmental impact assessments, and strategic environmental assessments) that currently aim to identify notable positive and negative effects. An HNG objective seems likely to demand more than experts' judgements of significance: it implies characterisation of the incremental effects of development, particularly in the case of residual harms that should be compensated. Existing assessment approaches might be adapted when defensible methodologies exist. Some environmental harms can be expressed in terms of adverse health outcomes and health burden, or the monetary costs to society related to health care and lost productivity, with existing metrics<sup>72,73</sup> that are typically used in policy cost-benefit analyses rather than in project-level assessments. An HNG approach could link these monetised health damage costs to developer contributions (eg, English planning obligations under section 106 of the Town and Country Planning Act 1990).<sup>74</sup> Conversely, when the focus is on benefits, damage metrics can be used to characterise avoided harm and the monetary benefits of environmental improvements that reduce the existing burden of disease, which is one way of framing returns on HNG-driven investment in health. However, not all outcomes can (or arguably should) be monetised. HIA as a starting point for HNG maintains a focus on both direct and indirect effects, objective and subjective elements of health and wellbeing, and quantitative and qualitative approaches. A future challenge is deciding how best to address individual or grouped determinants or outcomes, and their overall reconciliation.

**Across the planning system**

Existing local and national public health evidence and policy documents could have potential strategic roles within an HNG framework. BNG approaches have included mapping of ecosystem service demand and supply to help spatial planners direct environmental improvements to maximise societal benefits.<sup>35</sup> HNG could similarly drive earlier or upstream operationalisation and integration of local health needs assessments and strategies and planners’ spatial plans through similar targeted reconciliation of health needs, health-care service demand, and health inequalities. Within spatial plans these factors might be addressed through the coordination of development-level interventions, site allocation (ie, the identification of priority sites for development), development management principles, and monitoring of the cumulative effects of local plans through indicators and net gain registers.

In England, the effects of ENG policies will ultimately be reflected in local and national natural capital accounts, which define stocks and flows of benefits from natural capital.<sup>75</sup> Spatial planning policies and development affect a range of capitals—physical, intangible, human, financial, social, and institutional—all of which are relatable to health. Consideration should be given to whether national capital accounting frameworks could be used to identify stocks related to both the natural and built environments and the flows of benefits that can be related to health, wellbeing, and health-care budgets. This health-in-all-policies conceptualisation, which draws on existing health indicator frameworks,<sup>54,76</sup> could potentially serve a spatial planning HNG objective by providing new national and local platforms for monitoring changes in defined determinants of health and health outcomes at a system or policy level. This approach would potentially address complexity and support progression of a more holistic, systems-based view of health within the context of spatial planning and development.

**Generalising from the English case**

The normative thrust of an HNG objective in the planning system is its performative power to engender action by constructing the necessary conditions within which appropriate vocabularies, theories, methods, practices, and discussions are created. The key milestones, opportunities, and challenges identified in this Personal View are presented in table 2, as a potential road map for the future exploration and discussion of HNG within any given country’s context.

**Conclusion**

Can the implementation of net gain requirements in England’s planning system be applied to health? Exploration and development of HNG in practice will probably be as incremental as the project-level environmental changes it addresses. Health is challenging to incorporate in its entirety in one step, but

Opportunities and challenges	
<b>Conceptual milestones</b>	
Defining health within HNG	Addressing and integrating core public health functions (eg, health protection, health improvement, and health-care public health); addressing a broad range of determinants of health and physical and mental health outcomes; and addressing and integrating relationships between health and both the natural and built environments (across multiple scales)
Defining the purpose and principles of HNG approaches	Normative shift from minimising harms to maximising health benefits; identifying and preventing systemic so-called tipping points associated with irreversible damage; preserving and enhancing the capacity of places to maintain and improve health; and addressing and integrating the health policy objective of narrowing disparities in health
<b>Methodological milestones</b>	
Defining HNG assessment methodologies and coordinating the delivery of HNG	Addressing health at both the development and system levels within a holistic framework; identifying and addressing local health needs and priorities; integrating public participation; embedding strict protection from unacceptable effects; accounting for and addressing previously neglected incremental effects; identifying and addressing flows of health harms and benefits; addressing health over lifetimes and between generations; addressing the spatial and sociodemographic distribution of health harms and benefits; identifying and addressing inter-relationships between health determinants; identifying and addressing transboundary effects and dependencies; clearly representing any trade-offs between components of health; using and developing existing assessment and indicator frameworks; identifying and prioritising gaps in existing data and evidence
<b>Operational milestones</b>	
Implementation in policy and practice	Incentivising tool and service development and capacity building; integrating and incentivising uptake of existing health-orientated policies, design codes, and standards; aligning health with other policy objectives (eg, environmental improvement, and expedited delivery of healthy homes and places); making any trade-offs between health and other policy objectives visible
HNG=health net gain.	

**Table 2: A road map for exploring HNG**

our Personal View has identified the building blocks necessary to start a serious conversation about the possibilities and limitations of applying net gain objectives to health in any country’s context. HNG’s definitions, terms, and principles first require conceptual clarity. Narrowing its initial scope in policy and practice to one or several components of health as a first step—as done for BNG in England as the forerunner to ENG—prompts considerations of practicalities and processes, which are conceivably best implemented via evolution of existing national approaches. At the development level, robust and reliable methods for the assessment and measurement of HNG are a prerequisite; standardised frameworks, indicators, and metrics are required to compare the health impacts and benefits of different developments and to assess their relative contributions to health gains. We suggest that any such methodological development should be informed by existing principles of best practice in HIA,<sup>62,77</sup> considering the limitations and uncertainties of the data and evidence available.

From a strategic, long-term perspective, a national HNG agenda could usefully work towards harmonisation, encouraging systems views of health and its relationships with other policy objectives (including ENG) within spatial planning assessments and decision making.

Trade-offs between health and wider economic, social, and environmental objectives loom large beyond the immediate challenge of balancing the components of HNG itself.<sup>8</sup> To form part of the mainstream discourse across the spatial planning and wider political communities, HNG's strategic narrative requires exposure through further debate and wider consensus to test and develop a proof of concept. Doing so could potentially support the operationalisation of global urban health initiatives through national and local spatial planning policies and practice. The art and science of HNG is in its infancy; we have presented its concept in this Personal View at the very start of the exploration journey.

#### Contributors

JS-E, CK, and MC all contributed to conceptualisation. JS-E authored the original draft, CK authored the second draft, and MC validated the findings. JS-E led the authors' response to peer review comments and revision of the original manuscript. JS-E, CK, and MC reviewed and edited both drafts.

#### Declaration of interests

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