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Research Article

Development and application of a rapid research prioritisation process for identifying health research priorities in low- and middle-income countries: the RAPID-RP stakeholder analysis

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Abstract

Background: Health research should be locally prioritised by key stakeholders to ensure the best use of available resources, maximum likelihood of research leading to uptake into policy and practice and relevance to the needs of the potential beneficiaries. Established approaches are complex and time-consuming, therefore not feasible in settings where prioritisation is uncommon and time is limited.

Objectives: We developed and applied a simple, rapid research prioritisation approach to elicit the views of stakeholders.

Setting and participants: This was a collaboration between a multidisciplinary group of United Kingdom academics, the International Primary Care Respiratory Group and primary care respiratory researchers from four low- and middle-income countries: Brazil, China, Georgia and North Macedonia. We identified 10 topics for research prioritisation through workshops involving 26 topic, methods and local context experts, and considering the programme remit, to develop, adapt and evaluate culturally appropriate community and behavioural approaches for the prevention, early identification and management of chronic obstructive pulmonary disease in primary care.

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Design and methods: In each setting, local research teams convened stakeholder groups of patients, clinicians, managers/policymakers and researchers. Each group briefly discussed the 10 potential research study topics. Discussions were facilitated using short vignettes for each topic, and participants were encouraged to consider importance, feasibility and equity. Individual participants rated each study on a three-point traffic light scale, then ranked them following a facilitated discussion on what drove the ratings. The research team rated then ranked each study considering three further criteria (international novelty, potential for future funding and capacity building on a five-point scale). Within each group, ranks were summed to create a final rank order which guided our research programme and provided insight for future projects.
Results: In each country, four to eight members attended each stakeholder group. The engagement process was completed in less than 4 hours and feedback was very positive, especially from patients who valued the opportunity to contribute to research decision-making about their own condition. Ranking varied to some extent between groups and settings, but there was consistency around topics that were prioritised among the top five in all groups (identifying efficient chronic obstructive pulmonary disease screening test strategies, evaluations of lung age to aid smoking cessation, feasibility of locally adapted pulmonary rehabilitation, clinical education for primary care staff) and study topics that consistently ranked low (use of e-cigarettes for smoking cessation, weight management to improve chronic obstructive pulmonary disease symptoms and handwashing to reduce infections).
Limitations: Despite attempts to maximise inclusivity and diversity, stakeholders were mainly limited geographically to the centres where researchers were based, potentially limiting generalisability of views across the countries. Facilitator styles varied and may have influenced some of the discussions and potentially the ranking.
Conclusions: Despite some limitations, we demonstrated the feasibility and acceptability of the rapid research prioritisation approach stakeholder analysis for identifying locally relevant research priorities in low- and middle-income country settings.
Future work: Further validation is needed for aspects of the process. We have identified some useful lessons from our evaluation of the process, to facilitate future use of this approach.
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Introduction

There is increasing recognition and expectation that health research should be locally prioritised to ensure best use of available resources, maximise the likelihood of research leading to action (policy and practice) and enhance relevance to the needs of the potential beneficiaries.[1] Prioritisation with locally relevant stakeholders should therefore be the first step in the research cycle, although it is often neglected. Identifying research priorities is nevertheless difficult, due to differing stakeholder perspectives,[2,3] competing potential research topics, multiple outcomes and uncertainties in predicting and measuring impact.[4] Good practice recommends a comprehensive and structured approach,[5] with clear criteria and methods for prioritisation, and recruitment of stakeholder participants to ensure inclusiveness of expertise, gender, ethnicity, religion, educational level and region. In health research, this commonly involves inclusion of patients, the public, health providers, managers and policymakers.

There are several established approaches for prioritising health research.[6–9] In a recent literature review, approximately one-quarter of recently published health research prioritisation exercises used either the metrics-based Child Health and Nutrition Research Initiative (CHNRI) method[6] or the consensus building Delphi method,[7] while one-fifth reported using a combination of expert panel interview and focus group discussion.[4] Other common tools include the James Lind Alliance method,[8] the Combined Approach Matrix (CAM),[9] combinations of literature reviewing and questionnaires, and use of online surveys. The CHNRI, James Lind Alliance and CAM methods have clear criteria and scoring processes, offering more transparency and replicability than the Delphi and other approaches, but are complex and time-consuming,[10] especially for non-researchers. The whole process can last many months and can require several activities/meetings, making it less accessible for many participants and therefore less representative. Some prioritisation exercises may be carried out independently, with little discussion, relying on written descriptions and the understanding of participants. A simpler approach which adapts and combines the strengths of several methods could be useful,[4] especially in settings where research prioritisation is not commonplace, researchers and participants are unfamiliar with such processes and time is limited.

Research prioritisation in low- and middle-income countries (LMIC) is uncommon,[10] and the potential beneficiaries of health research infrequently consulted.[11] There is growing recognition of the need to implement better consultation of local stakeholders in LMIC research planning, especially

when funding arises from high-income countries.[12] In this paper, we report the development and application of a simple, rapid research prioritisation approach (RAPID-RP) which was specifically designed to elicit the views of relevant patients, clinicians, managers and policy-makers in prioritising the most important research questions within a global health research programme on chronic obstructive pulmonary disease (COPD) in primary care. The approach used and the lessons learnt will have application in other similar settings and are transferable across research areas.

Aim

To develop and implement a novel rapid approach to prioritise research questions within a multi-country global health research programme conducted in LMICs.

Prioritisation methods

Setting: the Breathe Well programme

The Breathe Well programme (NIHR Global Health Research Group on Global COPD in Primary Care, University of Birmingham) was funded by the UK National Institute for Health and Care Research (NIHR) in 2017 to build research capacity in four LMICs on the prevention, diagnosis and management of COPD in the primary care setting. We developed a collaboration between UK researchers at the University of Birmingham with expertise in respiratory health, the Chief Executive and Chair of the International Primary Care Respiratory Group (IPCRG) and primary care clinical researchers in Brazil, China, Georgia and North Macedonia (LMIC partner countries) to form the core co-investigator team. Together, we provided training and mentoring to research teams in our partner LMIC countries, supporting them to design and deliver research studies in primary care relevant to the needs of their local populations. The programme had the following aims:

- strengthen local research capacity in the partner countries in community-based COPD research and generic population research methods
- develop and test community-based and culturally appropriate approaches for identifying undiagnosed COPD in low-resource countries
- adapt evidence-based behavioural approaches for management of COPD according to cultural needs and the local healthcare infrastructure, and assess the feasibility of their implementation
- build a robust platform for future collaborative research within the partner countries and other similar settings.

An important part of the programme was to identify local research needs, involving key stakeholders to prioritise research questions for evaluation within the programme and beyond.

Stakeholder prioritisation process

Our approach (*Figure 1*) was designed pragmatically during several informal discussions between lead research investigators, largely adapted from the CHNRI method[6] but also drawing from other approaches. We created a simple process where the main stakeholder consultation could be conducted in 3 to 4 hours, particularly when stakeholders are unfamiliar with research prioritisation.

Defining the context and identifying potential research topics

We held an initial scoping workshop with 26 participants, including a multidisciplinary group of UK academics with expertise in respiratory health research (epidemiologists, primary and secondary care physicians, physiologist, sociologist, health economist, biostatistician), respiratory-focused primary care clinical researchers from Brazil, China, Georgia and the Republic of North Macedonia, as well as the Chief Executive of the International Primary Care Respiratory Group (IPCRG). The workshop was used to identify important topic areas within the four LMICs. The group members were selected to include experts form a wide range of disciplines, research managers and leading researchers with local country knowledge, including those with experience of working with more disadvantaged populations. Results from the workshop were consolidated to identify common themes, which were then aligned with the remit of the funded programme, resulting in a shortlist of 10 potential research study topics (*Table 1*). A short evidence-based lay summary vignette was prepared for each topic (see *Appendix 1*), then refined in discussion with other members of the research team. Each vignette was a paragraph providing a brief background, what the knowledge gap was and how the findings from a study on the topic could be used. The selected topics were initially phrased as questions but rephrased as study titles to improve clarity for participants in response to feedback on the first prioritisation event.

Identification and recruitment of participants

Research teams from each of the four countries identified and invited 6–10 relevant participants with a range of characteristics from each of three stakeholder groups (to ensure 4–6 attended): patients (range of severity of disease, gender, age and social group), clinicians (primary, secondary and tertiary care) and policy-makers/managers (local, national, non-government organisations). Research

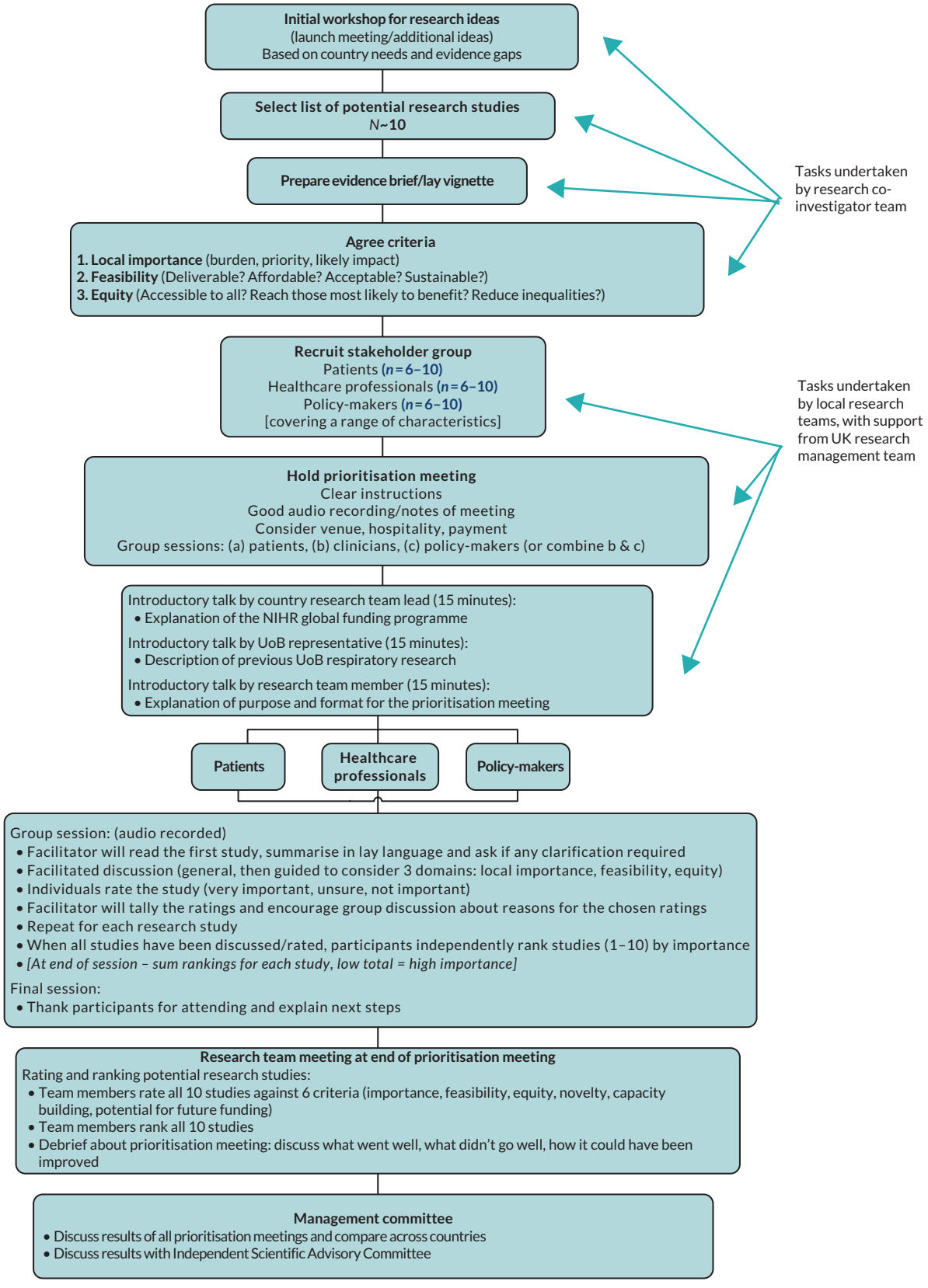


FIGURE 1 Research prioritisation model.

TABLE 1 Final list of research topics used for prioritisation

Study	Study title	Short title
Prevention		
1	A study to explore the views of patients and healthcare professionals on the use of e-cigarettes for quitting smoking.	E-cigarettes
2	A study to assess the effectiveness of communicating 'lung age' to adult smokers in primary care to promote smoking cessation.	Lung age
Diagnosis/screening		
3	A study to find the most efficient screening test strategy for identifying new cases of COPD.	Screening tests
4	A study to assess the effectiveness of treatment for people with newly diagnosed COPD (through case-finding).	Early treatment
Management		
5	A study to explore the views of patients, healthcare professionals and policy-makers on the barriers and enablers to good-quality COPD management.	Quality management
6	A study to assess the feasibility of a new pulmonary rehabilitation programme (PR), adapted to local needs in low-resource settings.	PR feasibility
7	A study to assess whether an adapted pulmonary rehabilitation programme improves outcomes in patients with case-found and mild COPD, in settings where medication is suboptimal.	PR outcomes
8	A study to assess whether a weight management programme improves dyspnoea and quality of life among COPD patients.	Weight management
9	A study to assess whether a simple behavioural intervention to promote handwashing and reduce transmission of infections can reduce exacerbations among COPD patients.	Handwashing
10	A study to explore how to improve clinical education about COPD for primary health care professionals (HCP)	HCP education

teams chose whether to hold a combined meeting or to arrange them separately, according to local context.

Prioritisation meetings

Meetings were conducted in each country between October and December 2017. Each group session lasted for 3 to 4 hours, with refreshment breaks as appropriate. Venues were chosen for each meeting to ensure accessibility and including separate rooms for group sessions. Meeting material, including the 10 research study topics and the accompanying evidence vignette for each, was translated and sent to participants 1 week before the meeting in case they wished to read it in advance. Locally appropriate compensation was provided, for example small gifts and refreshments.

These meetings were to guide research activity and therefore considered stakeholder consultations. As such, no ethics approval was sought for them. Nevertheless, as meeting discussions were audio-recorded and analysed, all participants were informed about this in advance and asked to sign consent forms on arrival, agreeing to the discussion being recorded and analysed, and for the data to be used in publications. There was also a short explanation of the purpose of the meeting and reassurance that all expressed views would be valued and respected. Participants were then divided into stakeholder groups with two facilitators from the local research team allocated to each. The lead facilitator explained the process and guided the discussion and prioritisation, and the second supported through timekeeping and note-taking. All facilitators were trained by the lead research team to ensure a standardised approach across all countries. Discussions were conducted in the local language. Data from the group discussion were transcribed in the local language and the transcript translated to English by a professional translator. Data from the transcripts were used to explore the rapid prioritisation process and provide learning for its future application. To do this, the transcripts were primarily analysed to provide contextual information to explain the final list of priorities. In addition, the data were analysed to explore the group process and identify aspects which worked well or could be improved.

Rating and ranking research topics

The prioritisation process involved two main stages: rating each topic individually, before finally ranking their importance relative to each other. Minor revisions were

made to the model following piloting with our patient advisory group and comments from our independent scientific advisory committee, for example incorporating a traffic light system for rating importance.

The facilitator summarised the first study and evidence vignette, before asking open questions to seek participants' views on the research study and to explore their understanding of the relevant health problem. The facilitator then guided discussion so that participants considered the study in relation to three domains: local *importance* (burden, priority, likely impact), *feasibility* (deliverability, affordability, acceptability) and the extent to which the study addressed *equity* issues (accessibility, reach, impact on reducing inequalities).

After considering these issues, participants were asked to independently rate the study overall as either 'very important', 'unsure' or 'not important' using a traffic light system (see *Appendix 2*). They were then encouraged to discuss reasons for their ratings, to explore factors influencing the decision. This process was repeated for each research study topic, with participants rating each one before moving on to the next. There were approximately 15–20 minutes of discussion per study.

After all of the 10 research study topics were individually rated and discussed, there was a short break where facilitators summarised the ratings across the group. The summary scores were then presented to participants, who were asked to reflect on these through discussion, and then independently rank the 10 study topics in order of priority: 1 = highest priority, 10 = lowest priority (see *Appendix 3*). There was further discussion to gain insight into the decision-making process, and facilitators also encouraged suggestions for additional topic areas that had not been covered or had emerged during the group discussion.

Prioritisation by research team

In addition to the stakeholder prioritisation process, LMIC research team members (directly after the meeting) independently scored the 10 topics in relation to six domains: importance, feasibility, equity, international novelty, potential for future funding, and capacity building. Each domain was scored on a scale of 0 (not at all) to 5 (very much) (see *Appendix 4*). Research teams then independently ranked the 10 topics in order of priority (see *Appendix 5*).

Analyses

Summarising topic ratings

In each country setting, the ratings for groups of patients, clinicians and policy-makers/managers were summarised using bar charts, presenting the percentage of stakeholders rating each topic as 'important', 'unimportant' or 'unsure'. Ratings from research team members were presented as star diagrams, using the average score for each domain. Wider star shapes represented research study topics with higher average scores, while stars clustered towards the centre had lower ratings (see *Figure 2*).

Summarising topic rankings

The sum of the rankings for each topic was calculated for each stakeholder group (patients, clinicians, policy-makers/managers and researchers) and then a rank order presented for each group, and overall.

Qualitative analysis

Meeting transcripts were analysed using the Framework method for the analysis of qualitative data.[13] The analysis was undertaken by Dickens with the help of a research student, supervised by Gale. Emerging themes were arranged in an analytical framework, allowing comparison of how the meetings were conducted in different stakeholder groups and different countries. The framework covered facilitation, engagement and interaction (to allow exploration of the prioritisation process and what aspects worked well or needed to be modified), research topics and research literacy, culture and society, and reasoning (for/against a topic), to provide insights into why topics were prioritised (*Table 2*). All meeting transcripts were anonymised prior to being analysed. However, extra steps were taken to anonymise team member identities when discussing facilitation styles, to avoid the risk of identifying specific individuals.

Finally, we asked the research teams to write a short reflective report on their experience of conducting the prioritisation meetings. These were also analysed thematically to identify learning for how to optimise the process.

Results

Patient, practitioner and policy/manager participants

Meetings were attended by four to eight members of each external stakeholder group in each of the countries, representing a range of demographic characteristics (with the exception of China, where all patients were male and clinicians were all general practitioners) (*Table 3*). Research team ratings were completed by four to six researchers per country.

Ratings

Research topics that were rated highly across all countries, by the majority of stakeholder participant groups, included

TABLE 2 Analytical framework for qualitative analysis

1. Facilitation, engagement and interaction	**3. Culture and society**
1.1 Questioning (facilitator)	3.1 Laws/regulations
1.2 Further discussion (facilitator)	3.2 Politics and policies
1.3 Managing contributions (facilitator)	3.3 Economic context
1.4 Active listening/reflecting (participants)	3.4 Demographic/social differences
1.5 Agreement/disagreement (participants)	3.5 Health literacy and education
1.6 Reflections on prioritisation methodology (facilitator/participants)	3.6 Trust/respect for doctors and health professionals
1.7 Reflections on engagement/experience of the process (facilitator/participants)	3.7 Role of family and social networks
1.8 Facilitator- vs. participant-led	**4. Reasoning (for/against a study)**
1.9 Confusions vs. clarity	4.1 Level of potential impact/benefit
2. Research topics and research literacy	4.2 Likelihood of eventual uptake/routinisation
2.1 Confusion/clarification/understanding of research topic	4.3 Absence/presence of evidence
2.2 Practicalities of conducting study	4.4 Role in patient–doctor consultations
2.3 Experiences of dealing with issue in own practice/experience	4.5 Time efficiency
2.4 Focus (study-specific vs. general topic)	4.6 Cost or cost-effectiveness
2.5 Other suggestions for research	4.7 Balance primary/secondary care settings

testing of lung age to aid smoking cessation, *evaluating adapted pulmonary rehabilitation programmes*, *exploring how to improve clinical education for primary care staff and identifying efficient COPD screening test strategies* (see *Figure 4*, *Appendix 6*). The majority of the remaining topics had less consistent ratings. In Brazil and Georgia, *evaluation of handwashing to reduce exacerbations* was rated highly by patients whereas policy-makers gave it low importance, and in North Macedonia, the *impact of weight management on dyspnoea and quality of life* was rated highly by patients and policy-makers, but most clinicians rated it as having low importance. *Evaluation of the use of e-cigarettes for quitting smoking* had low overall ratings across most countries.

Variability in ratings between stakeholders was lowest in Brazil, with the majority of research topics being considered as very important by all stakeholders. China stakeholders demonstrated relatively consistent ratings for most topics, with the most variability seen for the handwashing and weight management topics, where clinicians rated these lower. Greater variation between stakeholder groups was observed in Georgia and North Macedonia, where less than half of the topics had reasonable agreement. In Georgia, patients were most likely to rate topics as very important and the policy-maker group more likely to rate topics as not important. In general, most stakeholders across all four countries rated research on e-cigarettes as not important or were unsure, although clinicians in Georgia and Brazil rated it more highly.

Research team participant scores were similar to the external stakeholders in terms of topics rating highest and lowest. Across the settings, the topics with the highest ratings (widest stars) included *improving clinical COPD education for primary care staff*, *communication of lung age for smoking cessation*, *feasibility of an adapted pulmonary rehabilitation programme* and *efficiency of COPD screening strategies* (*Figure 2*). The topics concerning e-cigarettes and handwashing received low ratings from the research teams in all four countries. Overall, the larger number of domains used in the research teams' ratings did not identify substantial differences, with topics tending to have similar ratings across all six domains. The study regarding the use of e-cigarettes for smoking cessation was an exception to this pattern, being rated as novel but relatively unimportant. In Brazil, across all research topics, the likelihood of attracting future funding was rated lower than the other five domains.

Rankings

Overall, in three out of four countries, the top ranked topic was *identifying efficient COPD screening test strategies* (*Figure 3*), and it was ranked second in the fourth country (North Macedonia). *Clinical education for primary care staff* was second ranked in China and Brazil and third ranked

TABLE 3 Description of patient, clinician and policy-maker/manager participants

	Patients		Clinicians		Policy-makers/managers	
Country	Age group (years)	Sex	Role	Work place	Role	Work place
China	70–75	M	General practitioner	Suburban community hospital	Department director	Urban university hospital
	70–75	M	General practitioner	Suburban community hospital	Department director	Urban community health service centre
	65–70	M	General practitioner	Suburban community hospital	Department director	Urban county health service centre
	50–55	M	General practitioner	Suburban community hospital	Director	Health commission
					Assistant dean	Suburban community hospital
Brazil	75–80	M	Nurse	Basic health unit	Department director	Primary care
	75–80	M	Nurse	Basic health unit	Department director	Secondary care
	60–65	M	Nurse	Specialty centre	Technical support	Secondary care
	75–80	M	Physiotherapist	Basic health unit	Hospital superintendent	Tertiary care
	55–60	F	Physiotherapist	Specialty centre	Medical co-ordinator	Urgency and emergency
	60–65	F	Family physician	Basic health unit	Care line manager	Office of the Secretary of Health
			Family physician	Basic health unit	Nursing co-ordinator	Urgency and emergency
			Pharmaceutical	Basic health unit		
Georgia	65–70	F	Family doctor	Primary care	Non-communicable disease department	National Centre for Disease Control and Public Health
	65–70	F	Family doctor	Primary care	Non-communicable disease department	National Centre for Disease Control and Public Health
	65–70	F	Family doctor	Primary care	Non-communicable disease department, head	National Centre for Disease Control and Public Health
	65–70	F	Family doctor, head of family medicine	Primary care	Advocacy in tobacco control	NGO
	75–80	M	Family doctor	Primary care		
	75–80	M	General practitioner	Primary care		
	70–75	M	General practitioner	Multi-profile hospital		
	70–75	M	General practitioner	Multi-profile hospital		
Macedonia	65–70	M	Head of department	University clinic	Director, pharmaceutical department	Government agency
	60–65	M	Head of department	Secondary care institute	Executive director	NGO
	65–70	F	Family physician	Primary care centre	National contact person	Government agency
	50–55	F	Head of department	General hospital	Head of department for primary care	Government agency

TABLE 3 Description of patient, clinician and policymaker/manager participants (*continued*)

	Patients		Clinicians		Policy-makers/managers	
Country	**Age group (years)**	**Sex**	**Role**	**Work place**	**Role**	**Work place**
	50–55	F	Hospital doctor	General hospital	Junior collaborator	Government agency
	60–65	F	Hospital doctor	Hospital	Financial manager	Government agency
			Family physician	Primary care centre	Manager of private health institution	Primary care centre
					Advisor to the director	Government agency

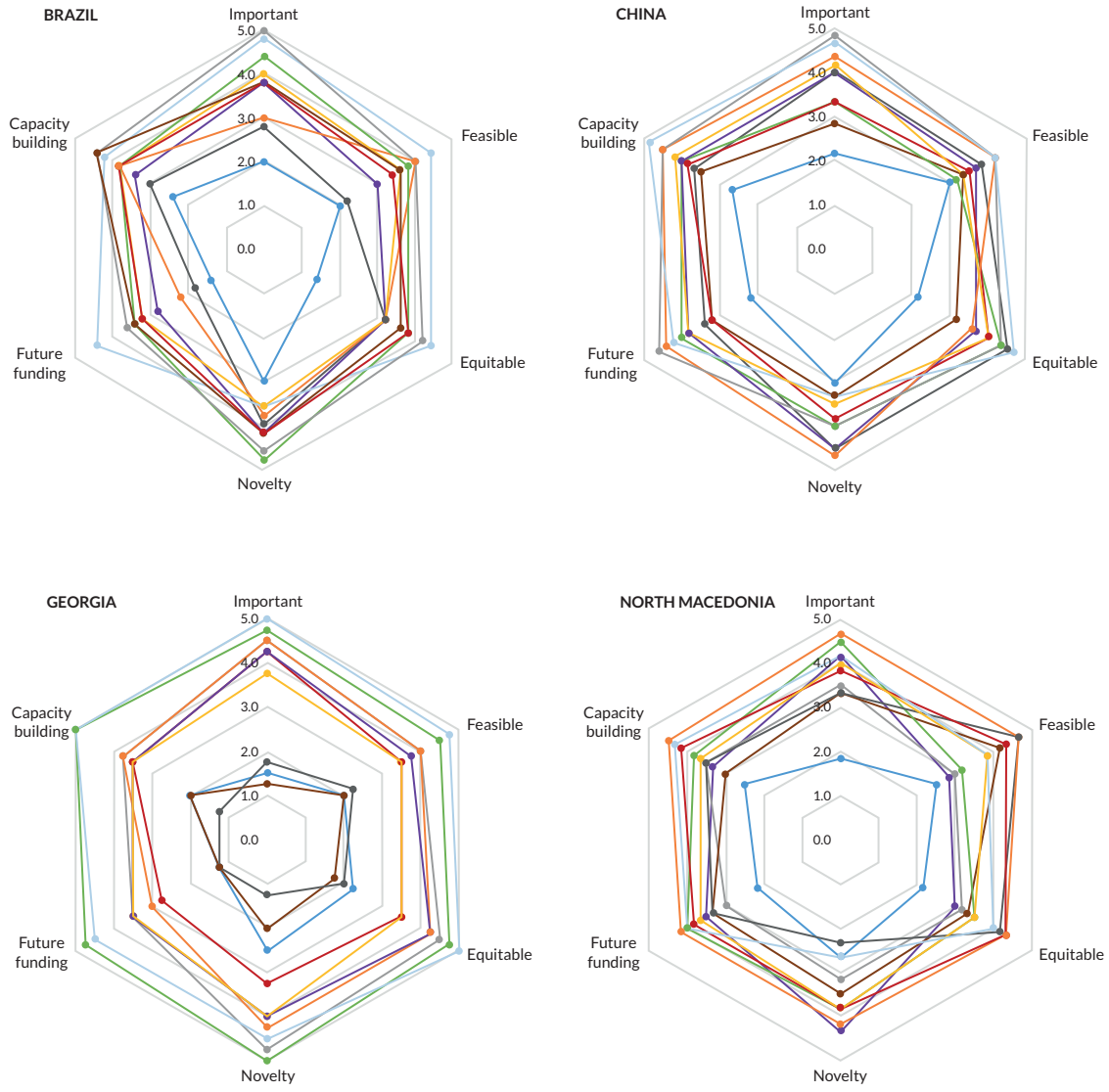


FIGURE 2 Star diagram (by LMIC country) summarising research team ratings for each of 10 research topics across 6 domains. Research study key: 1 = E-cigarettes; 2 = Lung age; 3 = Screening tests; 4 = Early treatment; 5 = Quality management; 6 = PR feasibility; 7 = PR outcomes; 8 = Weight management; 9 = Handwashing; 10 = HCP education.

in Georgia. *Evaluations of lung age to aid smoking cessation* was highest ranked in North Macedonia, and research on the *feasibility of locally adapted pulmonary rehabilitation* was second ranked in Georgia, and third in Brazil and North Macedonia. Topics concerning e-cigarettes, weight management and handwashing were ranked lowest across all countries. Differences between stakeholder groups were observable, both within and between countries.

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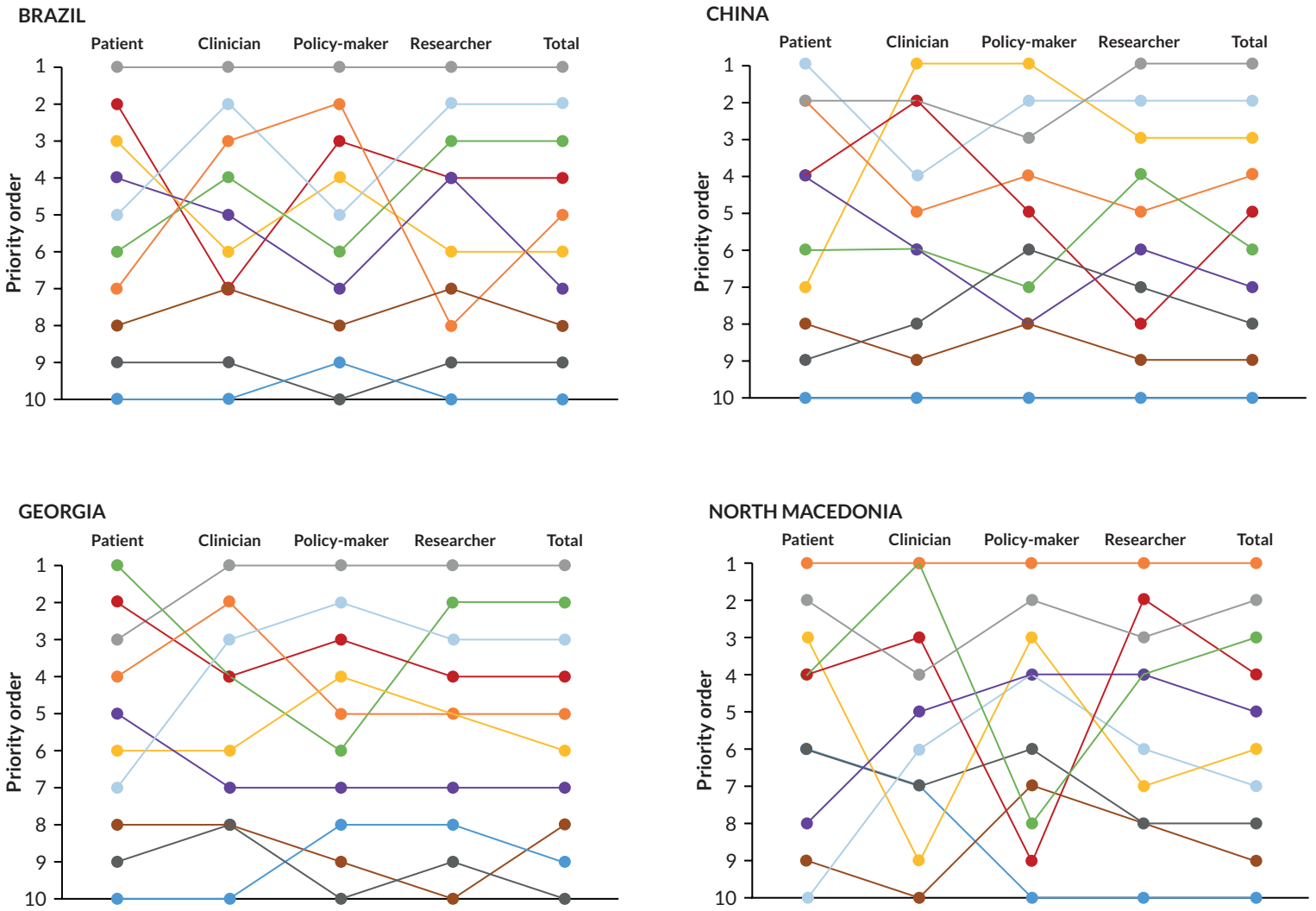


FIGURE 3 Stakeholder and research team rankings of the 10 research topics, by country. 1 = E-cigarettes; 2 = Lung age; 3 = Screening tests; 4 = Early treatment; 5 = Quality management; 6 = PR feasibility; 7 = PR outcomes; 8 = Weight management; 9 = Handwashing; 10 = HCP education.

Among patients, *exploring how to improve clinical education for primary care staff* was ranked as most important in China, but relatively low in Georgia and North Macedonia. *Evaluation of lung age to aid smoking cessation* was ranked highly by patients in China, but not by those in Brazil. In contrast, clinicians and policy-makers in Brazil ranked this highly. The study with the most discrepant rankings across countries concerned *barriers and enablers to good-quality COPD management*. With the exception of Georgia, there was between a five- and seven-point difference in rankings between stakeholder groups for this particular study, with no consistent pattern by stakeholder group. Among the researcher group, patterns were similar to the overall summary, although the *study exploring views on the barriers and enablers to good-quality COPD management* was more prominent.

Qualitative analysis from transcripts to explain and learn from RAPID-RP

Participant engagement

Levels and nature of the engagement with each of the projects varied across the different countries and types of stakeholders. This was in part related to the experiences and research literacy of the stakeholder participant and in part a reflection on the experience and background of the facilitator.

Although evidence vignettes were provided to accompany each research study, participants usually needed further clarification about the meaning of specific research topics. Redirection by the facilitators was also required if participants were focused on general or unrelated topic areas rather than the study-specific topic (e.g. smoking cessation rather than e-cigarettes), or they were unnecessarily concerned about possible difficulties in methodologies. These concerns sometimes dominated other aspects and could have adversely influenced ratings/rankings.

While discussing research topics, stakeholders often reflected on their own experiences to support their perspective. Patients, for example, talked extensively about their experiences of smoking cessation and e-cigarette use, citing family pressure to quit smoking and discussing the cost of e-cigarettes. Some clinicians commented that, in their experience, multicomponent smoking cessation interventions appeared more successful than simple interventions such as e-cigarettes, while some secondary care clinicians discussed their view of the importance of improving clinical education to avoid inappropriate referrals and misdiagnoses.

BOX 1 Recommendations based on 'what worked'

- Ensure research topics are articulated clearly with a clear message about potential importance/impact.
- Ensure participants have the opportunity to ask questions to help them understand the problem, relevance and potential impact of each research topic before full group discussion.
- Ensure participants are reminded about the three domains (importance, feasibility and equity) to consider when discussing and rating each topic.

Box 1 provides recommendations for engagement drawn from our learning.

Additional research questions

Participants made few suggestions for additional research topics beyond the 10 proposals, although those which arose naturally evolved from the discussions. The relatively fixed structure of meetings may be responsible for this, with facilitators focusing mainly on the prescribed content.

Facilitator style

The structured nature of the discussions, ordered around the 10 proposals and the ranking/rating process, meant that overall the process was facilitator-led. However, within that broad structure, a range of facilitative styles were noted, with some facilitators being more effective at engaging all participants (see *Box 2* for examples of prompts used) and generating debate and discussion, while others were more directive. In all cases, participants were able to share their views on the possible research projects to some extent.

BOX 2 Examples of useful prompts used by facilitators

- 'Can you elaborate on this?' (China patient group, researcher 1)
- 'Do you see any negative reactions? How likely is this study to be cost-effective?' (Georgia doctors/policy-maker group, researcher 1)
- 'Does anyone have a slightly different opinion?' (Macedonia patient group, researcher 1)
- 'Someone else want to share their opinion, or should I ask you some questions?' (Macedonia patient group, researcher 1)
- 'Can we please hear your opinion?' (Macedonia patient group, researcher 2)

Facilitation style seemed to be more closely related to the facilitators themselves than to the stakeholder group, for example open facilitators adopted the same approach whether it was healthcare professionals, policy-makers or patients in the group. We did not observe differences by stakeholder group in terms of engagement or interaction.

Key challenges for facilitators included managing participant misunderstanding about the process, and difficulties in encouraging non-contributors to participate,

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or disagreements to be voiced in the group. There was little evidence of participant disagreement across all stakeholder groups, and therefore a key suggestion is to ensure more in-depth facilitator training before conducting the prioritisation exercise.

Participant views on prioritisation process

Overall, participants were supportive of the prioritisation process, acknowledging the importance of identifying topics that could have an impact on health in different countries. It appeared that some clinicians and policy-makers had previously participated in similar processes, with varied opinions about their success. However, such involvement was a novelty for patients in all countries, who were very enthusiastic about these meetings and the potential to inform future research.

Contextual issues affecting decision-making

The rationale for decisions about ratings and rankings for the topics varied across the different stakeholder groups and countries. However, it was clear from discussions that decisions were shaped (as intended) by demographic, organisational, socio-cultural, economic and other contextual issues, allowing the team to gain insight into differences across settings. For example, some participants considered that informing smokers of their lung age would likely encourage smoking cessation while others thought that information alone would be insufficient, and the respective ratings/rankings reflected these differing opinions. Overall, the perceived acceptance, feasibility and impact of interventions, were they to be implemented in real life, seemed to be the strongest factor influencing ranking/ratings. Within this, themes arising from the discussions that influenced decisions are summarised below and illustrated by selected translated quotes (*Box 3*).

BOX 3 Contextual issues influencing decisions

- *Socio-cultural*: 'It is social culture and sometimes cigarettes are indispensable in social situations, it is true … At home, … I do not smoke, but … guests may say that, you did not even prepare a cigarette for me when I visit you? … So, as for quitting smoking, even if I quit, I can't live without cigarettes. Because wherever I go, I have to give other people cigarettes' (China patient group)

  'Maybe quitting with an electronic cigarette can work in urban areas, but in the rural even if they are free of charge people will not use them. Not from the perspective that is something new, but because of a long tradition we have, 500 years under the Ottoman Empire in these areas they use rolled tobacco cigarettes as a ritual and would not be acceptable and there would be no effect as one that we are looking for'n (Macedonia policy-maker group)
- *Practical barriers*: 'People in Tbilisi … know this but you should see what's going on in less developed regions of Georgia. They don't even have water to wash hands' (Georgia patient group)
- *Organisational*: 'I think it's [clinical education on COPD] important, because it will make it easier for the doctor himself to treat the patient' (Brazil patient group)

Practical barriers

Participants did not prioritise topics that they deemed to have little chance of being accepted or adhered to long term. For example, non-availability of clean water in some rural areas was considered a barrier to interventions to promote handwashing in Georgia and Brazil. Exploration of views on e-cigarettes for smoking cessation was opposed in Brazil, China and Georgia as participants discussed that they were either not available or were too expensive. Some participants acknowledged practical barriers to other topics, such as lack of provision of pulmonary rehabilitation in small hospitals/cities.

Regional factors

Others alluded to attitudinal and socio-cultural factors influencing implementation and acceptability in different regions of their countries. Participants discussed research needs being heterogeneous, with some topics being more relevant or important in some subgroups of the population or in certain geographical areas. For example, urban populations were perceived as more accepting of new initiatives, while smoking cessation interventions were considered unlikely to succeed in rural areas as smoking was ingrained in the culture. Patients in more deprived or rural areas were considered to have lower health awareness and worse health education, leading to poor self-management of their COPD and delayed consultations with clinicians.

Organisational factors

Healthcare organisational issues were considered in participants' decision-making. For example, research on *clinical education of primary care staff* was anticipated to facilitate expansion of access to medical treatment by giving patients confidence to visit doctors in rural locations rather than relying on hospital doctors. Conversely, the poor reputation of primary care clinicians' ability and knowledge in several of the countries caused patients to have a clear preference to consult secondary care doctors or those in major hospitals, rather than those in primary care or smaller hospitals. The divide between primary and secondary care was also apparent in clinician group discussions, with secondary care doctors in North Macedonia citing misdiagnoses and inappropriate referrals from primary care counterparts. Although ranked highly, interventions such as *lung age for smoking cessation* and *screening for*

undiagnosed COPD were thought by some to potentially impact negatively on patient consultations due to the perceived increased time required, and interventions to promote *handwashing* could harm doctor patient relationships by causing offence.

Socio-cultural factors

Cultural issues informed some decisions, such as the pervasiveness of tobacco use in some communities like Macedonia and China, making smoking cessation interventions more challenging to accept.

Economic factors

Economic factors influenced discussion around various research topics, particularly among clinicians and policy-makers, with the *test accuracy* study prioritised due to the perceived need to identify cost-effective strategies for identifying undiagnosed COPD in resource-limited settings. Cost implications were discussed in relation to the future implementation of interventions, with clinicians and policy-makers in several countries citing costs as a barrier for purchasing required equipment, and there was an acknowledgement that patients in more deprived areas would not be able to afford some interventions. While affordability was a key reason for the e-cigarette study receiving poor ratings, legal and regulatory issues were also cited, due to licensing and regulation not being in place in most countries.

Reflections of research teams

The prioritisation activity was new for the research teams, but all found this a successful approach for deciding on research priorities. Attendance of relevant stakeholders was secured by flexibility and direct invitations, including personal invitation of patients from their own doctors. Feedback from patients after attendance was extremely positive, some citing this as the only time they had been asked for their opinions.

In order to mitigate against potential power imbalances, patient stakeholders were consulted in a separate group, but research teams emphasised parity of all stakeholders' contributions, with one team giving patients name cards at the prioritisation meeting, naming them 'patient experts' to demonstrate that they were valued members of the meeting.

All research teams reflected on the importance of good facilitation during the meeting, in terms of rephrasing study material using lay terminology to optimise understanding, ensuring engagement of all participants, and refocusing discussion to the specific research topics in question.

Outcomes

The prioritisation process was successful in identifying the top research priorities in each country, which both informed the successfully delivered Breathe Well research programme[14–17] and provided the rationale for subsequent and future projects. Informed by country-specific priorities, the Breathe Well programme included topics to identify the most efficient screening strategies for undiagnosed COPD in Brazil and China, a study to adapt and evaluate the feasibility of delivering pulmonary rehabilitation in Georgia, and a trial to evaluate the effectiveness of providing information on lung age on quitting among smokers in Macedonia. Subsequently, two teams explored developing topics to improve education on respiratory disease for primary care staff. Aside from the selection of research topics, the prioritisation process had additional beneficial impacts for the teams, including being a springboard for patient and stakeholder involvement that continued throughout the research topics, increasing awareness of the respiratory research programme within the locality and influencing national policy.[18]

Discussion

We developed a rapid prioritisation process which was successfully implemented across four distinct settings with stakeholder groups that had no prior experience of inputting to research ideas. Local research teams successfully convened and conducted this rapid prioritisation exercise with minimal support. Four to eight members of each stakeholder group (individual groups of patients, clinicians and managers/policy-makers, or combined where locally appropriate) participated in a 3- to 4-hour meeting, prioritising the research questions most important to their local context.

Our simple metrics-based approach was pragmatic, accessible and acceptable, and of particular value in LMIC settings where stakeholder involvement in prioritisation is a relatively novel concept and patient organisations for either peer support or inputting to service or research activities rarely exist. It provided an objective approach to prioritisation based on majority ranking but also allowed us to highlight differing perspectives among stakeholders. Using qualitative analysis of the discussions, we gained insights into factors influencing prioritisation decisions.

While the summary ratings produced variable results across stakeholders and between countries, rankings were more consistent, more easily interpretable and likely to better represent the discussions. The ratings and subsequent discussion probably allowed people to reflect about the

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topics before deciding on the final rankings. There were five research topics which were consistently highly ranked (*identifying effective COPD screening test strategies*, *exploring how to improve clinical education for primary care staff*, *evaluating adapted pulmonary rehabilitation programmes*, *testing of lung age to aid smoking cessation*, *and exploring barriers and enablers to good-quality COPD management*). The ordering varied a little across the countries, generally reflecting the final selected research projects, but screening for undiagnosed COPD was the lead priority in Brazil, China and Georgia and the second priority in North Macedonia. In Georgia, priorities were more consistent between the different stakeholder groups than in the other three countries but overall there were no particular patterns of note. With a simple descriptive process and limited data, it was not possible to unpick any clear trends of differences between groups. There were three research questions which were consistently at the bottom of the rankings (*evaluations of handwashing to reduce exacerbations*, *the impact of weight management on dyspnoea and quality of life*, and *the use of e-cigarettes for quitting smoking*).

Observations and reflections about the rapid process of prioritisation revealed important learning. Researchers and participants engaged well and gave very positive feedback about the process. Patients in particular were enthusiastic about the opportunity to inform future research on their own illness. Having a structured approach was helpful to ensure adequate discussion of the 10 proposed topics. The evidence briefs provided a useful starting point, although facilitators needed to further clarify the topics or context during the meeting, especially for patient participants. Facilitator style varied, and it was important to maintain a balance between avoiding being too directive and ensuring focus on the topics and domains of relevance. Participants found equity to be the most difficult domain to consider, and feasibility sometimes dominated conversations, although eventually decisions were often based on likely research impact. Facilitators were able to find prompts to encourage participants to give their views but recognised the need for good communication skills and more training in this area.

It was clear from both the differences in priorities and the recorded discussions that this process truly reflected local needs, that context was influential during decision-making and that the perceived acceptance and impact of interventions were the strongest factors influencing the decision-making. Economic factors were also important for clinicians and managers/policy-makers.

Comparison with other literature

Our method brings together and adapts the most useful aspects of previously published prioritisation methods to provide an approach suitable for rapid prioritisation with a range of different stakeholders in LMIC settings. The CHNRI method[6] requires research ideas to be suggested by expert participants or the management team based on current evidence and these are scored using five standard criteria: answerability, equity, impact, deliverability and effectiveness. Our tool also uses research ideas generated by experts, but uses a simpler framework with only three criteria, which may be simpler for participants. Another advantage over the CHNRI process is the ability for discussion and clarification of the research synopsis provided while still maintaining independent grading by participants. This type of social process can add value over a purely technical approach, as observed in other prioritisation approaches such as the Socio-Technical Allocation of Resources (STAR) process for distributing funding for patient treatments because it recognises that successful resource allocation processes depend on transparent stakeholder engagement and discussion that elicits their different weighting of judging criteria.[18,19] The addition of discussion and reflection prior to the final ranking allowed some degree of consensus building.

Our research teams considered six criteria, but this did not add particular value over the three criteria used by the other participants. In contrast with the James Lind Alliance approach,[8] an extensive systematic review of the evidence was not required; we used topic and methodology experts' knowledge of the literature, and local practitioner input of their context, to create accessible vignettes to discuss with participants. All consensus building processes were completed in less than one day, which is much faster than the multistep, time-consuming process required by other methods.[6,7,9]

Strengths and limitations

To our knowledge, this rapid, pragmatic approach is novel, especially when applied to LMIC settings. Other researchers have adapted the James Lind Alliance method to a more rapid approach,[20] mainly focusing on efficient literature review methods, but our approach was closer to an adaptation of the CHNRI method, bringing in aspects of consensus building. We relied on the knowledge of topic, methodology and local practitioner experts all working in respiratory health to identify topics for prioritisation. We assumed that their expertise and knowledge of the literature was sufficient to identify relevant research gaps within the context of the project remit. However, it is possible that a more thorough literature review would have identified additional topics.

While some local LMIC research teams had previously collaborated with clinicians and policy-makers, particularly

those with policy roles, no teams had prior experience of involving patients in this way. With no established patient support groups in these countries (nor in many other LMICs), recruiting and involving appropriate patients was a new challenge. Although a range of patients were recruited successfully through personal invitations, this approach may have limited the type of patients who participated and doctors' subconscious biases may have influenced patient selection. Nevertheless, this pragmatic approach resulted in a range of patient views to be considered, and benefit to the involved patients was also reported. Anecdotal evidence as well as qualitative data demonstrated that all participants engaged in the process, valued the contribution of all stakeholders and were willing to participate in such initiatives in the future.

All research teams were able to recruit sufficient numbers and choose appropriate participants from all stakeholder groups and were able to implement the prioritisation process in their localities with minimal support. The meetings were relatively quick and cheap to organise, suggesting it could be a sustainable model to use in the future. We tested our process in four diverse LMICs with different demography, social and political situations and healthcare structures, which suggests that our approach is transferable to multiple settings. Learning could also be tested for transferability to high-income settings where a pragmatic rapid approach is required.

Despite efforts to obtain participants' perceptions of the selected research topics, it is possible that the facilitators' own views may have influenced the discussions or decisions of the groups. While facilitator intervention was required on occasions to refocus discussion or clarify meanings, it is possible that their input will have influenced the discussions.

As participant recruitment took place in one geographical area of each country, the results of the prioritisation process are not necessarily representative and the results therefore need interpreting with caution. The process therefore could be repeated in localities with different socio-demographic characteristics, to capture the views of the wider society.

Implications for future practice

While we gave brief training to all facilitator teams in advance of the meetings, and this was sufficient for delivering the process, our findings suggest that additional targeted training would have been beneficial, focusing on how to orientate participants at the start of the session regarding the purpose, how best to facilitate active and inclusive discussion, and clarifying the meaning and purpose of each study proposal. In addition, the importance of a supporting role for the facilitator team was noted, that is an external person attending the meetings, with a clear awareness of the overall process, with an ability to generate good working relationships with facilitators and to discuss the practicalities of running the process.

Specific lessons learnt include:

- Plan timings and location to optimise attendance and participation.
- Personal invitation especially from doctors is helpful to engage patients, although this should be balanced by ensuring inclusivity of a diverse range of patients.
- Local context is important in terms of determining group membership and whether stakeholder groups can be combined or remain separate. Potential power imbalances should also be considered.
- Simple criteria for driving discussions are more easily understood than multiple domains; equity was found to be a difficult concept.
- A simple traffic light system was good for ratings, but rankings were eventually the most discriminatory.
- Hold sufficient training sessions before the prioritisation meeting to ensure all facilitators are fully prepared.
- Build in time and prompts to allow for additional topics to be contributed.
- Double-check translation to maximise clarity and understanding of the process and vignettes.

Recommendations for future research

Although we successfully adapted and simplified the prioritisation process, this needs replication in other contexts. Based on our experience, there are several aspects of the rapid prioritisation process that need further exploration to allow validation and potentially further simplification. These include:

- The research topic identification was led by expert knowledge and gaps filled by checking the list against knowledge of other stakeholders during the prioritisation workshops. A comparison of this approach against a formal systematic literature review is needed to validate it.
- We used a summary of rankings from different stakeholder groups to decide on priorities. The ranking was undertaken after a group discussion and reflection on each topic. A comparison of this approach against independent ranking (i.e. with no prior group discussion) would allow us to understand to what extent the discussion process contributes to consensus building.

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- Rating against different domains by researchers showed little discrimination between domains and all participants struggled with equity as a domain. Future research should tease out whether and to what extent explicit rating against domains is helpful or whether a simpler single rating with implicit consideration of domains would be sufficient.
- We held meetings with only one group of each type of stakeholder in each country. Further validation should be obtained by assessing replicability of rankings in other identity-specific stakeholder groups with different compositions, or by asking another set of stakeholders to check and comment on the rankings obtained.

Conclusion

We developed an efficient, comprehensive approach for health research priority setting within a time-limited research programme that was successfully implemented in four countries. Despite some limitations, it was well-received by participating stakeholders and enabled comparison of views from different stakeholder groups. The process allowed researchers and policy-makers to focus on research that would be of most value to each country, although stakeholder participation was geographically limited to the centres where local researchers were based, and may not be fully representative of the needs of everyone. Due to the minimal resources required and the brevity of the process, it may be attractive to other investigators in LMICs, and would also be transferable to higher income settings.

Additional information

Contributions of authors

Andrew P Dickens (https://orcid.org/0000-0002-7591-8129) (Epidemiologist Research Fellow) conceptualised and designed the process and trained the research teams; contributed to identification of the research topics for prioritisation and the development of the prioritisation process; qualitative analyses; wrote the first draft of the paper; approved the final draft.

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Data-sharing statement

All available data are held securely and enquiries for access can be made through the corresponding author.

Ethics statement

This report is based on the description of a process of stakeholder consultation to establish research priorities, rather than a research study. As such, no ethical approval was sought.

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List of abbreviations

CAM	Combined Approach Matrix
CHNRI	Child Health and Nutrition Research Initiative
COPD	chronic obstructive pulmonary disease
HCP	primary health care professionals
IPCRG	International Primary Care Respiratory Group

LMIC	low- and middle-income countries
NIHR	National Institute for Health and Care Research
PR	pulmonary rehabilitation programme
RAPID-RP	rapid research prioritisation approach
STAR	Socio-Technical Allocation of Resources

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This article should be referenced as follows:
Dickens AP, Gale N, Adab P, Cheng KK, Chi C, de Sousa JC, *et al.* Development and application of a rapid research prioritisation process for identifying health research priorities in low- and middle-income countries: the RAPID-RP stakeholder analysis. *Global Health Res* 2026;**2**(5):55–80. https://doi.org/10.3310/CTHF1385

Appendix 1 Example of a lay summary vignette

A study to find the most efficient screening test strategy for identifying new cases of COPD

'Chronic obstructive pulmonary disease (or COPD) is a very common condition across the world. It is a lung disease caused mainly by smoking or exposure to indoor or outdoor air pollution. Patients with COPD do not recover and many suffer ill health and many admissions to hospital. However, we also know that at least half of people with the disease do not know they have it, and therefore we could try to identify them earlier and give them appropriate care. We could offer screening, or testing, to many people to try to find those affected who don't yet know it. There are several different tests we can use, such as offering different symptom questionnaires and simple breathing tests on a large scale to people who might be at risk. But we do not know which test or combination of tests is the best, or the best value for money, particularly in lower resource countries. We could plan a study to compare all of these test. With the results, we could identify the best and most cost-effective approach to use to identify new patients.'

Appendix 2 Participant rating form

Breathe Well research prioritisation: rating

BREATHE WELL RESEARCH PRIORITISATION: RATING

Name:	**Please circle: Patient / Clinician / Policy-maker**
Job role:	**Date:**

As part of the prioritisation, you will be asked to rate each of the proposed research studies as: 'very important', 'unsure', 'not important'. Please tick the relevant column for each study.

RESEARCH STUDY	 **Very important**	 **Unsure**	 **Not important**
PREVENTION			
1. A study to explore the views of patients and healthcare professionals on the use of e-cigarettes for quitting smoking			

2. A study to assess the additional effectiveness of communicating "lung age" to adult smokers in primary care to promote smoking cessation			
DIAGNOSIS/SCREENING			
3. A study to find the most efficient screening test strategy for identifying new cases of COPD			
4. A study to assess the effectiveness of treatment for people with newly case-found COPD			
MANAGEMENT			
5. A study to explore the views of patients, healthcare professionals and policy-makers on the barriers and enablers to good-quality COPD management			
6. A study to assess the feasibility of a new pulmonary rehabilitation programme adapted to local needs in low-resource settings			
7. A study to assess whether an adapted pulmonary rehabilitation programme improves outcomes in patients with case-found and mild COPD, in settings where medication is suboptimal			
8. A study to assess whether a weight management programme improves dyspnoea and quality of life among COPD patients			
9. A study to assess whether a simple behavioural intervention to promote handwashing and reduce transmission of infections can reduce exacerbations among COPD patients			
10. A study to explore how to improve clinical education about COPD for primary care staff			

This article should be referenced as follows:
Dickens AP, Gale N, Adab P, Cheng KK, Chi C, de Sousa JC, *et al.* Development and application of a rapid research prioritisation process for identifying health research priorities in low- and middle-income countries: the RAPID-RP stakeholder analysis. *Global Health Res* 2026;**2**(5):55–80. https://doi.org/10.3310/CTHF1385

Appendix 3 Participant ranking form

Breathe Well prioritisation: ranking

Name:	Please circle: patient/clinician/policy-maker
Job role:	Date:

In the previous session, you were asked to rate the importance of each proposed research question.

Now, with the previous exercise in mind, please rank all studies in priority order for research. Mark the highest priority with a '1' and the lowest priority with a '10'.

Please rank all studies (1 = highest priority, 10 = lowest priority)
Prevention
1. A study to explore the views of patients and healthcare professionals on the use of e-cigarettes for quitting smoking
2. A study to assess the additional effectiveness of communicating 'lung age' to adult smokers in primary care to promote smoking cessation

Please rank all studies (1 = highest priority, 10 = lowest priority)
Diagnosis/screening
3. A study to find the most efficient screening test strategy for identifying new cases of COPD
4. A study to assess the effectiveness of treatment for people with newly case-found COPD
Management
5. A study to explore the views of patients, healthcare professionals and policy-makers on the barriers and enablers to good-quality COPD management
6. A study to assess the feasibility of a new pulmonary rehabilitation programme adapted to local needs in low-resource settings

Please rank all studies (1 = highest priority, 10 = lowest priority)
7. A study to assess whether an adapted pulmonary rehabilitation programme improves outcomes in patients with case-found and mild COPD, in settings where medication is suboptimal
8. A study to assess whether a weight management programme improves dyspnoea and quality of life among COPD patients

Please rank all studies (1 = highest priority, 10 = lowest priority)
9. A study to assess whether a simple behavioural intervention to promote handwashing and reduce transmission of infections can reduce exacerbations among COPD patients
10. A study to explore how to improve clinical education about COPD for primary care staff

Appendix 4 Research team rating form

Breathe Well research prioritisation: research team scoring (Part 1)

Name:	Group session facilitated (please circle): Patients Clinicians Policy-makers Clinicians/policy-makers (combined)
Date:	

Please score each of the proposed research studies in three different categories: local importance, feasibility and equity. The table below gives some guidance on what the categories could include from the viewpoint of patients, clinicians and policy-makers:

	Important: In an ideal world, how important is this? Is this a priority?	Feasible: In the real world, how feasible/acceptable is this idea?	Equitable: Will this benefit all patient groups? Will it be accessible to all?
Patients	Would this make your quality of life better? Is this important to you? Is this a short- or long-term priority?	Would you realistically be able to participate in this kind of project? Or in the longer term would you be able to participate in the proposed service?	Would you and other patients all be able to access this service and participate in the project? Would it be of benefit to all patients who took part?
Clinicians	Would you feel you could provide a better service? Would it improve your professional satisfaction?	Would this be technically feasible? How complex would implementation be? Would this work within your relationship with patients?	Could you set up this project and the service in locations which would reach all types of patients?
Policy-makers	How does this compare in importance to other international, national and local goals?	Are the resources available for this? Are the knowledge and skills available for this? Is the workforce available for this?	Will this lead to benefit for all eligible patients? Will it help to reduce health inequalities?

Please rate the below research studies on a score from 0 to 5, where 0 = not at all and 5 = very much for each category.

Research study	0 = Not at all, 5 = Very much																	
	Important						Feasible						Equitable					
Prevention																		
1. A study to explore the views of patients and healthcare professionals on the use of e-cigarettes for quitting smoking	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
2. A study to assess the additional effectiveness of communicating 'lung age' to adult smokers in primary care to promote smoking cessation	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5

Research study	0 = Not at all, 5 = Very much																	
	Important						Feasible						Equitable					
Diagnosis/screening																		
3. A study to find the most efficient screening test strategy for identifying new cases of COPD	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
4. A study to assess the effectiveness of treatment for people with newly case-found COPD	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
Management																		
5. A study to explore the views of patients, healthcare professionals and policy-makers on the barriers and enablers to good-quality COPD management	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
6. A study to assess the feasibility of a new pulmonary rehabilitation programme adapted to local needs in low-resource settings	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
7. A study to assess whether an adapted pulmonary rehabilitation programme improves outcomes in patients with case-found and mild COPD, in settings where medication is suboptimal	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
8. A study to assess whether a weight management programme improves dyspnoea and quality of life among COPD patients	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
9. A study to assess whether a simple behavioural intervention to promote handwashing and reduce transmission of infections can reduce exacerbations among COPD patients	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5
10. A study to explore how to improve clinical education about COPD for primary care staff	0	1	2	3	4	5	0	1	2	3	4	5	0	1	2	3	4	5

Please write any comments here (continue overleaf):

Breathe Well research prioritisation: research team scoring (Part 2)

Name:	Group session facilitated (please circle): Patients Clinicians Policy-makers Clinicians/policy-makers (combined)
Date:	

Please score each of the proposed research studies in three different categories:

- Novelty of research study internationally
- Potential for future funding (local or international)
- Capacity building.

Please rate the below research studies on a score from 0 to 5, where 0 = not at all and 5 = very much for each category.

Research study	0 = Not at all, 5 = Very much Novelty	Future funding	Capacity building
Prevention			
1. A study to explore the views of patients and healthcare professionals on the use of e-cigarettes for quitting smoking	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
2. A study to assess the additional effectiveness of communicating 'lung age' to adult smokers in primary care to promote smoking cessation	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Diagnosis/screening			
3. A study to find the most efficient screening test strategy for identifying new cases of COPD	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5

Research study	0 = Not at all, 5 = Very much Novelty	Future funding	Capacity building
4. A study to assess the effectiveness of treatment for people with newly case-found COPD	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Management			
• A study to explore the views of patients, healthcare professionals and policy-makers on the barriers and enablers to good-quality COPD management	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
6. A study to assess the feasibility of a new pulmonary rehabilitation programme adapted to local needs in low-resource settings	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
7. A study to assess whether an adapted pulmonary rehabilitation programme improves outcomes in patients with case-found and mild COPD, in settings where medication is suboptimal	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
8. A study to assess whether a weight management programme improves dyspnoea and quality of life among COPD patients	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
9. A study to assess whether a simple behavioural intervention to promote handwashing and reduce transmission of infections can reduce exacerbations among COPD patients	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
10. A study to explore how to improve clinical education about COPD for primary care staff	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5

Please write any comments here (continue overleaf):

Appendix 5 Research team ranking form

Breathe Well prioritisation: research team ranking

Name:	Group session facilitated (please circle): Patients Clinicians Policy-makers Clinicians/policy-makers (combined)
Date:	

In the previous session, you were asked to rate the importance of each proposed research question.

Now, with the previous exercise in mind, please rank all studies in priority order for research. Mark the highest priority with a '1' and the lowest priority with a '10'.

Please rank all studies (1 = highest priority, 10 = lowest priority)

Prevention

1. A study to explore the views of patients and healthcare professionals on the use of e-cigarettes for quitting smoking
2. A study to assess the additional effectiveness of communicating 'lung age' to adult smokers in primary care to promote smoking cessation

Diagnosis/screening

3. A study to find the most efficient screening test strategy for identifying new cases of COPD
4. A study to assess the effectiveness of treatment for people with newly case-found COPD

Management

5. A study to explore the views of patients, healthcare professionals and policy-makers on the barriers and enablers to good-quality COPD management

Please rank all studies (1 = highest priority, 10 = lowest priority)

6. A study to assess the feasibility of a new pulmonary rehabilitation programme adapted to local needs in low-resource settings
7. A study to assess whether an adapted pulmonary rehabilitation programme improves outcomes in patients with case-found and mild COPD, in settings where medication is suboptimal
8. A study to assess whether a weight management programme improves dyspnoea and quality of life among COPD patients
9. A study to assess whether a simple behavioural intervention to promote handwashing and reduce transmission of infections can reduce exacerbations among COPD patients
10. A study to explore how to improve clinical education about COPD for primary care staff

Please write any comments here:

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Appendix 6

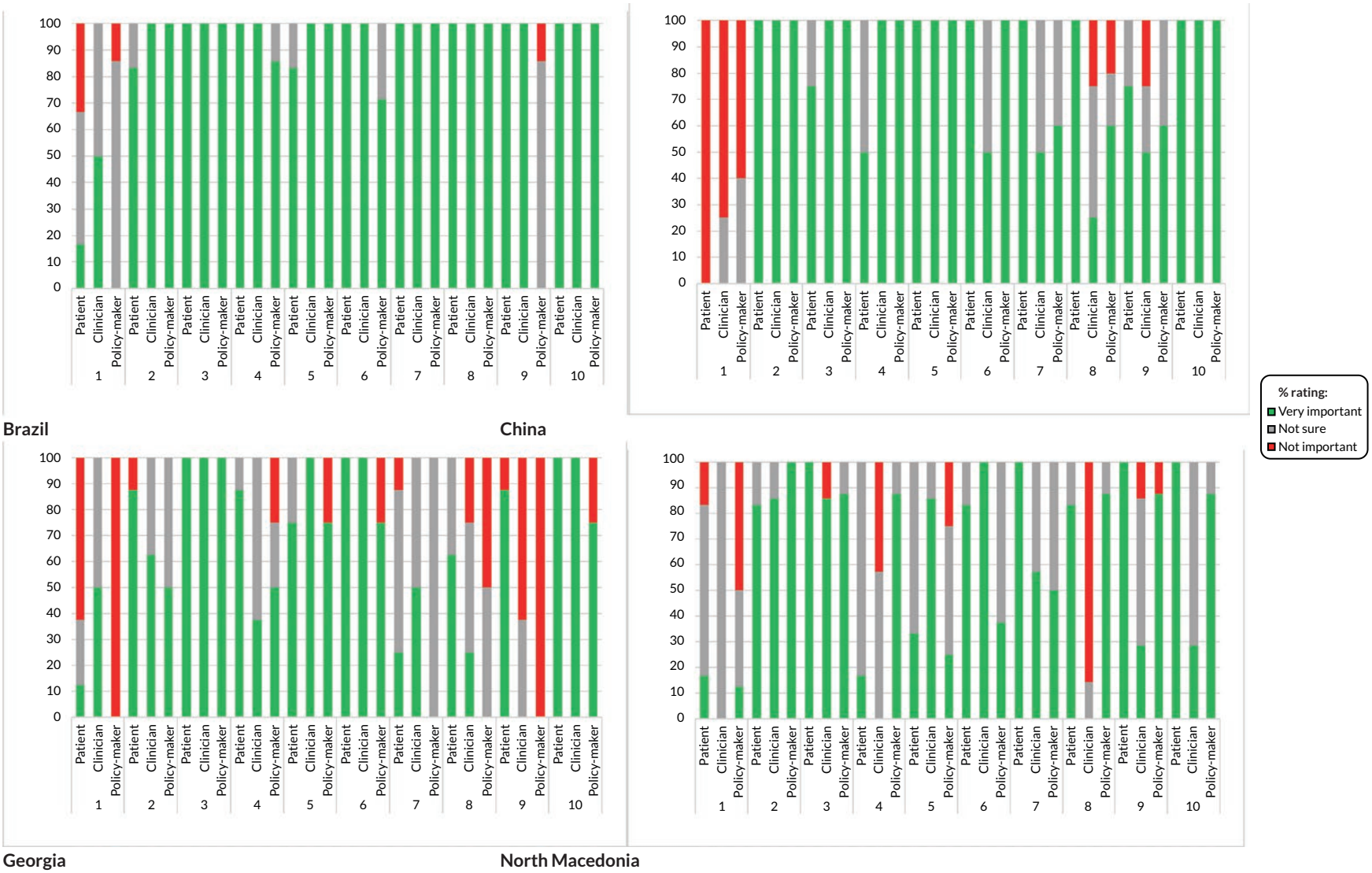


FIGURE 4 Stakeholder ratings, by country. 1 = e-cigarettes; 2 = lung age; 3 = screening tests; 4 = early treatment; 5 = quality management; 6 = PR feasibility; 7 = PR outcomes; 8 = weight management; 9 = handwashing; 10 = HCP education.