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12 **Abstract**

13 Recruitment and selection are critical components of human resource management, and influence both
14 the quantity and quality of the healthcare workforce. In this article, we use two different examples of
15 primary care workers, General Practitioners in the UK and Community Health Workers in low- and
16 middle- income countries, to illustrate how recruitment and selection are and could be used to
17 enhance the primary care workforce in each setting. Both recruitment and selection can be costly, so
18 when funding is limited, decisions as to how to spend the human resources budget must be made. It
19 could be argued that human resource management should focus on recruitment in a *seller's market* (an
20 insufficient supply of applicants) and on selection in a *buyer's market* (sufficient applicants but
21 concerns about their quality). We use this article to examine recruitment and selection in each type of
22 market, but also to highlight the interactions between these two human resource management
23 decisions. We argue that both recruitment and selection must be considered in both types of market,
24 particularly in sectors when workers' labour impacts upon population health. We also note the paucity
25 of high quality research in recruitment and selection for primary care and the need for rigorous study
26 designs such as randomised trials.

27 **Key words**

28 General practice, Community Health Workers, selection, recruitment, primary care

29

30 **Introduction**

31 Human capital, in terms of both the quantity and quality of health workers, is a critical resource for
32 any health system and primary care is no exception.(1) Maximising the contribution of human capital
33 requires attention to all of the components of human resource management, including training,
34 supervision and performance management, but must begin with the building blocks of recruitment and
35 selection. *Recruitment* is primarily concerned with increasing the number of qualified individuals
36 applying for the posts available and *selection* with choosing which of these applicants should be
37 offered posts. The importance of recruitment and selection should not be under-estimated, because all
38 subsequent human resource management activity can only work with the “raw materials” available
39 following these processes. In this article, we aim to use two very different examples of primary care
40 providers, General Practitioners (GPs) in the UK and Community Health Workers (CHWs) in low-
41 and middle- income countries (LMICs), to illustrate why and how recruitment and selection can be
42 used both separately and conjointly to positively influence the quantity and quality of the primary care
43 workforce. While we use the existing evidence to guide our arguments where available, we identify
44 and justify a need for further research in this area. We provide more information on the two types of
45 primary care provider in Box 1.

46 We have chosen these providers because of our personal experiences of working with them on
47 research projects related to service provision, recruitment, selection and training (see Davison et al.(2)
48 and Thomas et al.(3) for UK General Practice, Plowright et al.(4) for CHW training in South Africa
49 and Taylor et al.(5) for CHW service provision in sub-Saharan Africa; an MRC-funded study on
50 CHW selection in Kenya, Malawi and Ghana is currently on-going). Such research stems from the
51 challenges associated with recruitment and selection faced by each provider, making them appropriate
52 examples to use in this article. There is a lack of GPs in the UK(6), with around one vacancy reported
53 for every two practices in England between April and September 2016(7) and 10% of UK GP training
54 posts unfilled between 2015 and 2017.(8) In contrast, there is often high competition for CHW posts
55 in many LMIC CHW programmes because the role confers status to those selected and provides an

56 income and opportunities for career progression, but there are also concerns about the quality of care
57 provided by CHWs.(9).

58 **Box 1: UK General Practice and CHWs in LMICs**

59 *UK General Practice*

60 Those wishing to practise as GPs in the UK must successfully complete a three-year training
61 programme and obtain membership of the Royal College of General Practitioners via examination. To
62 gain entry into the General Practice training programme, doctors need at least two years of post-
63 graduate experience in the health service (or, for international applicants, be of equivalent
64 professional standing). The national selection process has three stages: (1) A check of eligibility to
65 train as a GP, (2) computer-based tests of clinical problem solving and professional dilemmas, and (3)
66 a face-to-face selection centre comprising three simulated scenarios and a written exercise. More
67 details can be found at: <https://gprecruitment.hee.nhs.uk/>

68 *CHWs in LMICs*

69 CHWs provide basic health advice and care, and linkage to formal health care for individuals and
70 families living in their own communities. There are a wide variety of CHW programmes in LMICs,
71 with their scale and scope determined by local needs as well as provider objectives and funder
72 priorities. (Many programmes are funded and/or operated by international Non-government
73 organisations although some, such as the Ghanaian programme, are led by the national government.)
74 The health areas most frequently addressed by CHWs are antenatal and neonatal care, child health and
75 HIV/AIDS. The initial training programme for CHWs is usually short (2-3 weeks), after which CHWs
76 tend to work alone with minimal supervision but some on-going training. There is no standardised
77 approach to recruitment and selection across programmes, although almost all include some form of
78 community involvement. The CHW programmes with which we have worked have also used various
79 combinations of written tests and face-to-face interviews to select CHWs.

80

81 **The interaction between recruitment and selection in determining the quantity and quality of**
82 **the primary care workforce**

83 It could be argued that human resource management should focus on recruitment when there is a
84 *seller's market*, i.e. an insufficient quantity of health workers, as for UK General Practice, and on
85 selection when there is a *buyer's market*, i.e. sufficient supply (or high competition for posts) but
86 concerns about health worker quality, as for CHWs in many LMICs. However this can never be an
87 unequivocal distinction, particularly in health systems where there are concerns about *quantity* and
88 *quality*. Where there is high competition for posts (a buyer's market), recruitment strategies should
89 target those most likely to be excellent health workers to discourage "have a go" applicants who are
90 unlikely to be successful. All selection processes need to consider *gating*, i.e. identifying applicants
91 who would not be competent in post. This is important to protect patients and the public from below-
92 standard health workers: those responsible for selection – particularly in a seller's market - may need
93 to balance leaving posts unfilled with "lowering the bar" and enhancing the pre-service training
94 provided.

95 **The recruitment/selection interaction in practice**

96 Efforts to enhance recruitment to UK General Practice have involved changes to the selection process.
97 For example, a "Stage 3 bypass" system was introduced in 2016, whereby the top-scoring applicants
98 on the Stage 2 computer-based tests of clinical problem solving and professional dilemmas would
99 automatically be offered posts rather than having to attend the Stage 3 face-to-face selection centre.
100 This may mean junior doctors are more likely to accept an offer because they feel "wanted" by
101 General Practice. Another GP recruitment strategy is enabling more detailed geographical preferences
102 (i.e. choosing a district rather than just a region). This second strategy may encourage junior doctors
103 to apply for General Practice rather than to other specialties (particularly if they continue a regional
104 system), because location – and not just the job role - does matter to potential applicants.(2) However
105 the selection process may need to be adapted to ensure that the "extra" applicants (those who would
106 otherwise have applied to other specialties) are truly motivated to be GPs in the long-term rather than
107 being attracted by the benefits being offered by the recruitment initiatives. This may be pertinent

108 given attempts to make transferring between specialty training programmes easier. To consider the
109 potential impact of such strategies on both recruitment and longer-term outcomes, studies of junior
110 doctors' motivation may be relevant, and future strategies could be designed using behavioural theory
111 to help achieve the desired outcomes and mitigate undesirable ones. We can learn from work on CHW
112 motivation here, with good studies examining the determinants of motivation(10) and using
113 behavioural theory to inform intervention design.(11) Similarly, changes to selection processes for
114 CHWs may have impacted on the recruitment of potential CHWs. For example, a policy change led to
115 women being prioritised in the CHW selection process in Kitgum district of Uganda(12). However,
116 well-intentioned initiatives can have unintended consequences: this policy could discourage those
117 males who would make excellent CHWs from applying.

118

119 **Designing effective recruitment and selection strategies**

120 Designing effective recruitment and selection strategies – and striking the right balance between them
121 - is important because both are costly activities. It is also challenging because a selection process
122 needs to be more than just cost-effective: it also needs to be acceptable – and trade-offs between cost-
123 effectiveness and acceptability may be required. For example, the need for members of the local
124 community to be involved in the selection of their CHWs is frequently highlighted.(13) However, in
125 terms of maximising CHW performance, such involvement can be detrimental if nepotism influences
126 decision-making.(14) The use of Stage 2 scores only to select GP trainees involves a very different
127 trade-off as there is evidence that this approach is cost-effective, with no impact on training outcomes
128 (15), but acceptability could be low because of the high face validity of the relatively expensive face-
129 to-face Stage 3 selection centres.

130 There is relatively little evidence on the recruitment and selection of CHWs in LMICs. We have been
131 unable to find any peer-reviewed studies comparing the effectiveness of different selection criteria for
132 CHWs. In terms of recruitment, there is one RCT of different strategies for attracting applicants for
133 CHW posts.(16) The selection process for General Practice in the UK, meanwhile, has been well

134 studied,(2, 17) although there are some concerns about the quality of this work.(2, 18) A recent
135 systematic review which considered the effectiveness of strategies to enhance GP recruitment
136 reported a scarcity of studies examining specific recruitment practices; those that were identified were
137 reported to be of poor methodological quality with no RCTs.(19) More well-designed mixed-methods
138 research is therefore needed to identify the most cost-effective, fair and acceptable recruitment and
139 selection processes, particularly for CHWs. Yet having to wait for the results of such research would
140 not help those who need to use recruitment and selection to enhance the primary care workforce in the
141 immediate future.

142 **Potential interim solutions for sellers' and buyers' markets**

143 A seller's market, such as UK General Practice, may require innovative recruitment strategies.
144 Recruitment may begin sometime before applications are made; the importance of General Practice
145 experience in medical schools for encouraging students to consider it as a career has been
146 highlighted.(2) Such strategies should be subjected to thought experiments or pre-implementation
147 evaluation (20) to consider if they may attract those motivated by the strategy and not the role itself.
148 Selection processes need to focus on gating; at a local level, data to help design selection processes to
149 achieve this aim could be obtained by reviewing the selection performance of those who are currently
150 struggling on the job with those who are excelling to identify if any particular component of the
151 selection process can be used to distinguish between these groups; a case-control style study. In the
152 UK, the UKMED database (21) is now enabling national-level cohort studies with similar aims of
153 predicting future performance. Ensuring a minimum standard is achieved during selection is
154 important, but determining what that standard should be is not a simple task.

155 In a buyer's market, such as for CHWs, the recruitment strategy does not have to be so extensive. To
156 minimise selection costs recruitment strategies should nevertheless be targeted at those most likely to
157 be excellent performers (as opposed to "have a go" applicants) based on current knowledge. Selection
158 processes should be tuned to distinguish excellent from merely competent performers, and therefore
159 need to be more challenging than those focusing on distinguishing competence from incompetence in
160 a seller's market. Relatively more investment in selection vis-à-vis recruitment is therefore likely to

161 be fruitful in a buyer's market providing it is directed at methods with evidence of predictive validity,
162 such as multiple mini interviews.(18) However such methods need to be culturally-sensitive and
163 context-specific. A cost-minimisation strategy in LMICs could include using school examination
164 results based on evidence of an academic backbone for UK medical careers, although the
165 generalisability of this finding to LMICs would need to be considered.(22) A further option advocated
166 for CHWs is to over-appoint and then formally hire those who meet the required standard in the end-
167 of-training assessments.(23) The aims and requirements for recruitment and selection in each type of
168 market are summarised in Table 1.

169 **Conclusion**

170 Research and taking immediate action are not mutually exclusive; recruitment and selection cannot
171 wait, but the need for research to support future development is clear and such research needs to
172 consider and therefore evaluate the interactions between recruitment and selection.(13) Designing a
173 recruitment and selection strategy that is cost-effective, fair, acceptable and has the intended effects
174 on the applicant pool is a challenging undertaking. Yet even small steps towards this goal would help
175 the house of human capital for primary care to be built on rocks rather than on sand. Such work
176 requires collaboration, for example between medical schools, Foundation Schools and the Royal
177 College of General Practitioners in the UK to promote General Practice during initial medical training
178 or between different CHW programme providers in LMICs to share good practice and avoid
179 reinventing the wheel (although of course variability between CHW programmes means that any
180 potential changes need to be assessed against local context prior to implementation). The idea of
181 sharing good practice is partly taken from efforts at undergraduate level, where the UK Medical
182 Schools Council Selection Alliance is aiming to develop multiple mini interview stations for sharing
183 across medical schools; all such collaborations would benefit from early engagement with researchers.
184 Ultimately, recruitment and selection are like many other things in healthcare, in that they can often
185 only be properly evaluated using RCTs, rare as such studies are in medical education. Such RCTs
186 should include a qualitative component so that both context and mechanisms can be explored, as well
187 as outcomes evaluated.

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197 Conflicts of Interest/Disclosure statement

198 The authors declare that they have no conflicts of interest.

199 Biographical note

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210 people who live in slums.

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268

269 **Table 1: Recruitment and selection in a seller’s and a buyer’s market**

	Seller’s market	Buyer’s market
Recruitment	<p><u>Aim</u>: Encourage those who may not have considered the career to apply</p> <p><u>Requires</u>: Innovative, intensive strategies <i>before</i> posts are advertised</p>	<p><u>Aim</u>: Discourage “have a go” applicants</p> <p><u>Requires</u>: Targeting at those most likely to perform well</p>
Selection	<p><u>Aim</u>: Distinguish competence from incompetence</p> <p><u>Requires</u>: Focus on gating by establishing a minimum standard that balances sensitivity and specificity appropriately</p>	<p><u>Aim</u>: Distinguish excellence from competence</p> <p><u>Requires</u>: Intensive, challenging selection process and/or over-appointing and use of a probationary period</p>

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271