1

**Health care prioritization in ageing societies:
Influence of age, education, health literacy and culture**

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ABSTRACT

Objectives. To examine how Chinese people in Hong Kong view health care prioritization and to compare the findings with those from a United Kingdom survey.

Method. A cross-sectional opinion survey was conducted in Hong Kong and 1,512 participants were interviewed.

Results. Data show that the highest rankings were accorded to "treatment for children" and "high technology services." Services for the elderly, whether in the community or in hospitals, and including end-of-life care, were ranked among the lowest. This view was also shared by healthcare professionals. Compared with the United Kingdom findings, there are stark contrasts in the low ranking of end-of-life care and the high ranking of high technology services among the Hong Kong population.

Conclusion. It is evident that most people would give priority to the young over the old in distributing a given amount of healthcare services. To meet the needs of ageing societies and to meet the needs of all users equitably, health care policy needs to acknowledge constraints and the needs for prioritization. Both the public and professionals should engage with policy makers in formulating a policy based on cost benefit considerations as well as overall societal view of prioritization that is not based on age alone.

Keywords: Elderly, Healthcare services, Priority setting

INTRODUCTION

One consequence of aging populations is the accumulation of chronic disease and disability burden on health and social care systems in many developed countries. Although there is a declining trend in incidence of many chronic diseases such as cardiovascular diseases, the more rapid decline in mortality rate as well as the increasing prevalence with age result in an increase in the absolute numbers of people with chronic diseases and disability [1,2]. At the same time, rapid advances in more expensive medical technologies enabling better treatment, together with increasing health literacy of the population, result in an exponential increase in public expectation for health care in most countries [3]. Furthermore many countries have experienced an economic depression, which has worsened the discrepancy between the public's expectations and the services a community can afford to offer. As a result some form of rationing in health services seems inevitable [4,5,6,7,8]. As in other countries, the Hong Kong (HK) government healthcare budget is unable to keep up with the demand, so that the issue of prioritization in some areas of healthcare such as the criteria for receiving liver transplants has been raised [9]. Nevertheless, there has been little informed societal discussion or official acknowledgement relating to the consequence of demand exceeding government healthcare budget, resulting in prioritization occurring in an arbitrary manner.

Two levels of prioritization have been described: horizontal or vertical [10]. Horizontal prioritization is carried out at the political level, for example, allocation of resources between non-institutional and hospital care or between different diseases groups. However, among the general public, the most commonly discussed level is vertical prioritization. This is concerned with how and how much care should be made for individuals.

The basis for prioritization has been discussed mainly in the use of age as a criterion. The growing number of older people is likely to place increasing demands on health services for access to effective

health technology in cases in which this can enhance the quality, not just the quantity, of life [11]. There is some evidence that age has been used as a criterion in allocating health care. Previous studies have documented age discrimination in healthcare systems [11,12,13,14]. Studies have shown substandard treatment of older people with acute myocardial infarction and other forms of heart disease [11,12] leading to premature deaths and unnecessary disability, as well as unavailability of breast screening for women aged 65 and over in Britain [15]. Care for older people with cancer is also poorer than that provided for younger patients [13,16]. It has been pointed out that medicine must be changed to serve an ageing society, in that health care is ill suited to perform well in a world with more elderly people, effectively resulting in 'arbitrary' discrimination. The special complex needs of elderly bear the brunt of rationing within the health service, this state of affairs being a poor reward for past contributions [17]. The media indirectly contributes to shaping negative ageist attitudes [18]. Nevertheless it has been pointed out that rationing of medical care by age may be inevitable, and the debate should be how government decides and whether the public should be consulted [19].

Callahan [20] stated that age is a legitimate basis for allocation of resources because it is a universal category and can easily be understood. He also stated that there should be an opportunity for every young person to become old and argued that to make that possible it is only fair to limit assistance to those who are already old. This view was supported by Daniels [21] who suggested that rationing by age is permissible under some conditions of scarcity. Williams [22,23] required greater discrimination against those who are older and asserted that everyone is entitled to a normal span of health and anyone who gets less than this has been cheated, while those who get more is living on borrowed time. Veatch [24] suggested guidelines for limiting care for people who are old and terminally ill and saw younger people as being worse off than older people because they have lived less of their lives [25]. On the other hand, several researchers [11,26,27,28,29,30,31] have argued against these theorists on the grounds of discrimination and ageism. As Giordano [29] stated that

"there is no valid reason, either theoretical or empirical, to deny the elderly full membership to the human family (p. 90)."

It can be seen that policy decisions relating to rationing, or prioritization of health care depend on healthcare systems and financing as well as public opinion, and these vary between different societies. Factor that may affect prioritization in any given society include the percentage of elderly people, the level of education or health literacy, and cultural factors determining the status of older people. Previous studies have been carried out in Western cultures. Among Chinese, the status of older people may be higher [32]. There is little information regarding how Chinese people in a developed economy view health care prioritization. Furthermore there may be a discrepancy between societal view and the view from individual sufferers, between healthcare professionals and the people they serve. Currently in HK, there is no official acknowledgement that there is limitation in health care resources or that there is a need for prioritization of services. To address these questions, we carried out a survey among Chinese people living in HK using a questionnaire that had been previously applied to the United Kingdom (UK) population [33], to obtain additional information on the influence of culture on health care prioritization.

METHOD

Design. A cross-sectional opinion survey was conducted in HK from January to November 2009. A quota sample of 1,512 participants was recruited from the HK non-institutional population aged 18 years and over. To examine the discrepancy between societal view and the view of elderly people and between healthcare professionals and the people they serve, healthcare professionals and the senior population were purposefully over-sampled to support subgroup analyses Hence, unlike Bowling [33] who did a population-representative sampling in the UK, a non-representative sample was recruited for this study.

Questionnaire. The design of the questionnaire was based on the one used by Bowling [33]. There were three sections. In the first section (*Prioritization Exercises*), respondents were asked to prioritize 12 health services. In section two (*Attitudes about Health Priorities*), respondents were asked if they strongly disagreed to strongly agreed (on a five-point scale) with six statements about health priorities. In section three (*Priority Setting*), respondents were asked who they thought should set priorities and to select their preference from a list. They were also asked about how they themselves would allocate a health budget of HK$20 million. Furthermore, respondents were asked if they agree the general public's opinions, like this one, should be used in the planning of health services. Finally, sociodemographic data were collected. Details of the questionnaire were shown in Appendix 1. Measures on the reliability and validity of the questionnaire have not been estimated, as the major objective of this study was to examine how people prioritise healthcare resources and it was not intended to develop a scale of age disparity.

Procedure. Hardcopies of the questionnaire were distributed to the staff of selected hospitals, visitors to selected hospitals and universities, the staff and members of elderly centers, as well as the older visitors to the public parks in all 18 districts of HK. Respondents were given sufficient time to complete and return the questionnaires to the research assistants at the site of recruitment. For subjects with lower education level, in particular the older respondents, the trained research assistants read out the questions to them and helped complete the questionnaires. If the respondents had any queries, the research assistants would also provide explanations based on some standard answers so that misunderstanding of the questions was minimized. Web-based questionnaires were also sent to undergraduate students of selected universities and the staff of selected universities and large corporations through bulk email. Informed consent was obtained from the participants, and the study

was approved by the ethical committees of The University of Hong Kong and The Chinese University of Hong Kong.

Statistical Analysis. For each respondent, a score of 1 was assigned to the health service being given the first priority, 2 to the second and so on. The mean of the priority ratings of the sample were calculated for each of the twelve health services. These services were then sorted in ascending order of mean priority rating, with the smallest value indicating the highest priority.

In subgroup analysis, the priority ratings (1,2,…12) were divided into four groups of priority (very high, high, low, very low), which was used as the dependent variable of ordinal regression. For questions involving degree of agreement, "strongly agree" and "agree" were grouped as "agree", which was used as the dependent variable of binary logistic regression. Responses to questions with only two options were also analyzed by binary logistic regression. To control for confounding, gender, age, education level, economic and professional status as well as health status were included in the models as independent variables. SPSS version 17.0 was used for statistical analysis and a significance level of 0.05 was used.

RESULTS

Of the 1,512 respondents, about 45% were 18-49 years of age, 18% were 50-64 years and 37% were 65 years and over. This distribution was different from the HK population: 59% were 20-49 years of age, 25% were 50-64 years of age, and 16% were 65 years and over. This was mainly due to the over-sampling of the older population in order to investigate the discrepancy between societal view and the view of elderly people. The sociodemographic characteristics of the sample were shown in Table 1.

Prioritization Exercises

Table 2 shows the frequency distributions and the mean priority rankings for the 12 services and treatments. The table shows that the highest priority (rank 1) was accorded to "treatment for children with life threatening illnesses," the next highest priority (rank 2) was accorded to "high technology surgery, organ transplants and procedures which treat life threatening conditions." "Preventive screening services and immunizations" were ranked next highest (3) which was followed by "surgery, such as hip replacement, to help people carry out everyday tasks" (4). "Health promotion/education services to help people lead healthy lives" was given a middle ranking (5) as were "psychiatric services for people with mental illness" (6) and "district nursing and community services/care at home" (7); "long stay hospital care for elderly people" was given a middle to low ranking (8). The lowest priorities were assigned to "treatment for people aged 75 and over with life threatening illness" (rank 9), "special care and pain relief for people who are dying" (10), "intensive care for premature babies who weigh less than 680 g with only a slight chance of survival" (11) and "treatment for infertility" (12).

Attitudes about Health Priorities

Table 3 shows the respondents' attitudes about health priorities. Most respondents (58%) agreed or strongly agreed that "high cost technology should be available to all regardless of age," which somewhat contradicts the low ranking (9) of "treatments for elderly people" (Table 2), illustrating the complexity of prioritization by age group. However, it appears to be consistent with the high ranking (2) of "high technology surgery." Being consistent with the high ranking (1) of "treatment for children" and the low ranking (9) of "treatment for elderly people" in the priority ranking exercise (Table 2), about 44% of respondents agreed or strongly agreed that "if resources are to be rationed then higher priority should be given to treating the young rather than elderly people." However, in contrast to the low priority ranking (10) of "end-of-life care" (Table 3), most respondents (69%)

8

agreed or strongly agreed that "the patient's quality of life should be considered in determining whether or not to use lifesaving treatment/technology."

Table 3 also shows that half of the respondents (55%) agreed or strongly agreed that "people who contribute to their own illness should have lower priority for health care." About half of the respondents (48%) agreed or strongly agreed that "the responsibility for rationing health care should rest with doctors," echoing a similar direct question about who should set priorities (as described below). Inconsistent with this, respondents were divided on whether "the government should issue guidelines to doctors about rationing lifesaving treatments," with 46% agreed or strongly agreed and 38% disagreed or strongly disagreed.

Priority Setting

Respondents were asked to rank who should set priorities, 43% ranked "doctors at local level" the first priority, 21% ranked "the public," 19% ranked "Hospital Authority," 11% ranked "hospital managers," and 6% ranked "politicians and the government." In addition, most respondents (77%) agreed that "surveys of the general public's opinions, like this one, should be used in the planning of health service," 10% disagreed with this, and 13% said that they did not know.

They were also asked how they themselves would allocate a spare HK$20 million health budget. Seventy one percent of the respondents selected "a health screening and education programme which could prevent a large number of people needing lifesaving operations in the future" and 29% selected "10 extra immediate lifesaving operations this year."

Subgroup Analysis

There were a few associations between health service priorities and sociodemographic characteristics (Table 4). For example, younger people (age groups: 18-49 and/or 50-64) tended to give a lower priority to health services for elderly people (such as, "community services," "long stay hospital care,"

9

and "treatment for elderly people") than older people aged 65 and over. However, for services concerning children (such as, "treatment for children" and "intensive care for premature babies") and services involving surgery (such as, "high technology surgery" and "hip surgery"), younger people (age groups: 18-49 and/or 50-64) gave a higher ranking than older people aged 65 and over.

Moreover, people with tertiary education set a higher priority to "health promotion" and "preventive screening" but a lower ranking to "hip surgery" and "infertility treatment" than those without tertiary education.

Professionals gave a higher ranking to "community services" but a lower priority to "treatment for elderly people" than non-professionals. Healthcare professionals set a lower priority to "intensive care for premature babies" but a higher priority to "health promotion" than non-healthcare workers.

There were also a few associations between attitudes to health priorities and sociodemographic characteristics (Table 5). Compared with older people (65 and over), younger people (age groups: 18-49 and/or 50-64) were less likely to agree that "people who contribute to their own illness should have lower priority for health care," "if resources are to be rationed then higher priority should be given to the young," and "patient's QOL should be considered in using lifesaving treatment." In allocating a spare HK$20 million health budget, more older people (aged 65 and over) preferred "10 extra lifesaving operations" to "a health screening and education programme" than younger people (aged 18-49 and 50-64).

Furthermore, in comparison to people with tertiary education, those without tertiary education tended to agree that "high cost technology should be available to all," "people who contribute to their own illness should have lower priority," and "the responsibility for rationing health care should rest with doctors." They were also more likely to choose "10 extra lifesaving operations" in allocating a spare HK$20 million health budget. On the other hand, people with tertiary education tended to agree that "patient's QOL should be considered in using lifesaving treatment." This finding suggests that

raising health literacy particularly among those with lower education levels may reduce the over reliance on high cost technology and operations, and on doctors only, for health management.

Healthcare professionals, in contrast to non-healthcare workers, were less likely to agree that "high cost technology should be available to all," and "the responsibility for rationing health care should rest with doctors." Nonetheless, they tended to agree that "if resources are to be rationed then higher priority should be given to the young," and "patient's QOL should be considered in using lifesaving treatment." In addition, healthcare professionals were less likely to agree that "surveys of the general public's opinions, like this one, should be used in the planning of health service."

International Comparison

To compare the present findings with those of a UK survey reported by Bowling [33], the HK sample is weighted in accordance to the UK sample's age composition. Results were shown in Table 6 and 7.

Table 6 indicates that respondents in HK and those in UK prioritised the 12 health services more or less the same way except that those in the HK sample set a lower priority to "end-of-life care" (rank 10) than people in the UK sample (rank 2). HK people also set a lower priority to "intensive care for premature babies" (rank 11) than UK people (rank 9). However, HK people gave a higher priority (rank 2) to "high technology surgery" than UK people (rank 7). They also gave a higher priority (rank 5) to "health promotion" than those in UK (rank 8). In prioritizing "treatment for elderly people," HK people set a higher priority (rank 9) than UK people (rank 12). Similarly, "long stay hospital care" was given a higher priority among HK people (rank 8) than that among UK people (rank 10).

Regarding the comparison between HK and UK people's attitudes to health priorities, Table 7 shows that substantially less HK people agreed that "high cost technology should be available to all" (56% vs. 80%), "the responsibility for rationing health care should rest with doctors" (47% vs. 75%), whereas more people in the HK sample agreed that "the government should issue guidelines to doctors" (46% vs. 14%). In contrast to the striking difference in ranking of "end-of-life care" (Table

7), the percentages of agreeing "patient's QOL should be considered in using lifesaving treatment" are similar between HK and UK people (69% vs. 74%).

DISCUSSION

This is the first study exploring the views of the public as well as health and social care professionals on how healthcare resources should be prioritized among a Chinese population living in a developed economy. The findings show that services for the elderly, whether in the community or in hospitals, and including end-of-life care, were ranked among the lowest. Older people who may be existing users or in need of these services tend to rate these services higher than younger age groups. It appears that there is a general view that older people have lower priority than younger people, yet those who currently stand to benefit from these services gave a higher priority, suggesting the existence of factors that may predispose to age disparities in the provision of these services. Furthermore, the findings may suggest that those who responded did so from their current perspective of needs, rather than from societal needs using an altruistic perspective. However, one may not draw the conclusion that Chinese society is necessarily self-centered, since factors such as lack of discussion and existence of elder care policies, under-developed elder care services, and predominantly negative media portrayal of elder issues may have major roles in contributing to this response. Notably views of those with higher education were not different from the general public in regards of the elderly services. While healthcare professionals gave lower priority to long stay hospital care for elderly people and treatment for people aged 75 and over, they gave higher priority to nursing and long term care, as compared to other economic and professional groups.

Other surveys of public opinion have similar results in that most people would give priority to the young over the old in distributing a given amount of health care benefit [33,34]; an attitude also shared

by healthcare professionals [34,35,36]. Several studies have indicated that age is a criterion that people generally use to prioritise healthcare services and physicians use even more often [11,34,35,36]. For example, Myllykangas and others [35] found that physicians were less willing to prioritise older people than were nurses, politicians and the general public. Physicians were less willing than other groups to refer older patients for elective surgery [34], and ageism also exists in access to cardiology services [11].

The stark contrast in the low ranking of end-of-life care compared with the UK findings, where it is ranked second, may represent a cultural difference between Chinese and Caucasians. In general among Chinese, death is still a taboo subject and even healthcare professionals may not be comfortable in discussing it openly. As a result there may be much misconception about the importance of these services in achieving a measure of quality of life at the end, or placing importance on the quality of dying. This finding is somewhat unexpected given the results of a previous survey where over 95% of the public would like to have an input regarding end-of-life care [37], and about 60% would like to discuss the issue of euthanasia [38]. One possible explanation is that while palliative care for cancer patients is well developed, services for those dying of chronic diseases have not been developed in a comparable way. Surprisingly, this study showed that around 70% of HK and UK people agreed that patient's quality of life should be considered in determining whether or not to use lifesaving treatment or technology. One possible explanation is that while HK people are interested in end-of-life care, they do not see the importance of it when priority has to be given.

Another striking contrast to the UK finding is the much higher ranking accorded to high technology services among the HK population, particularly among the younger age groups. This may reflect the perception that technology is effective in dealing with many commonly encountered diseases accompanying ageing. Again the media may have contributed to this collective thinking,

since discoveries that are reported by media, in particular local media, tend to be sensational and promote the view that many problems can be solved by technological advances. Given limited budgets and the expense of high technology services, disparities with respect to age may well occur. A systematic audit with respect to the extent of prioritization using age in the public health care sector may be indicated if inequalities in healthcare are to be reduced, similar to the initiative to reduce health inequalities due to socioeconomic factors advocated by the World Health Organization [39].

With respect to preventive services, those with higher education level and professionals accorded these higher rankings. Since preventive services are of key importance to public healthcare systems, the findings suggest that more public education should be carried out to show the importance of prevention, in raising the general health literacy of the population. Comparison with UK findings suggests that the level of health literacy may be lower. It is also interesting that the Chinese population appears to take a slightly more judgmental view about people who have chronic diseases as a result of their lifestyle, compared with the survey in the UK, in that a lower priority should be given to spending public money on treating these diseases. However issues such as whether those who continue to smoke will have lower priority in receiving coronary revascularization procedures have not been raised.

The findings of this survey may be useful for health policy planners. A majority of those surveyed thought that such surveys should be used in the planning of health services. However, unlike other studies where the general public placed confidence in physicians but not in politicians as decision makers in setting priority [33,40,41], there is no clear pattern of opinions regarding whether it should be the public, the government, managers or doctors who set priorities. In order to avoid any inappropriate rationing of healthcare based on low health literacy regarding age-related issues and the perverse incentives of project based funding in health and social care sectors, the reality of financial

constraints in the public healthcare system should be openly acknowledged; the health needs of ageing populations and what services could be provided listed comprehensively; the cost benefit of treatment involving new technology articulated; and then a consensus reached regarding prioritization that would result in an explicit policy being incorporated into the current healthcare system. Such a direction may also encourage the development of service models that involve co-payment or self-financing, thereby countering the view the health is the responsibility of the government alone, and at the same time promoting public participation in shaping services for their own ageing.

There are limitations in this study. In examining the influence of culture, we did not carry out an exhaustive primary comparison with many countries, but used the findings of a previous UK survey. This allowed a more in depth comparison using a similar questionnaire. The UK survey was not designed to specifically address the issue of prioritization of services based on age. It is recognized that it is not easy to distinguish between age discrimination per se and prioritization based on other cirtieria that are associated with age. For example denying thrombolytic treatment for acute stroke to a patient who is 85 years old is justified because of the high risk of cerebral haemorrhage from the treatment. Denying treatment based on fewer expected quality of life-adjusted years may also be considered a valid reason for denying treatment to some elderly patients. In the questionnaire, age was not specifically referred to. Therefore the role of age as a factor for prioritization for services may not be clearly ascertained from the responses, since it is uncertain how a particular question was understood by the respondents. Although the sample was weighted for age between this survey population and that in the UK survey, the sample was not matched for education and employment. The study purposely over-sampled older age groups as well healthcare professionals in order to elicit subgroup differences. Furthermore, the UK survey was carried out over ten years ago, and the responses may have changed. Inherent to this type of survey, there is bias of non-responders. Completion of the questionnaire requires a higher level of education and health literacy; frail or

15

institutionalized elderly would have been excluded. Furthermore, although the purposeful sampling included a category of policy makers, of all the questionnaires sent to government legislators, there was only one response. Nevertheless, in spite of all these differences, there are striking similarities between the rankings of the UK and HK population, with the exception of two items, the low ranking for end of life care and high ranking of technology in the HK population, that have been discussed above.

Moreover, it is possible that there were mode effects in adopting different data collection methods in a study [42,43,44], like the paper and web-based self-administrated questionnaires and face-to-face interviews used in this study. To minimize the mode effects, we have taken some measures. First, the present study investigated how people prioritise healthcare services. We noted that the concept of health prioritization, unlike some socially undesirable issues, was quite neutral in HK. Second, the format of the web-based questionnaire was the same as the paper form. Third, for respondents with lower education level, the trained research assistants would read out the questions to them and helped clarify the questions when needed.

In conclusion, to meet the needs of ageing societies and to meet the needs of all users equitably, health care policy needs to acknowledge constraints and the needs for prioritization. Both the public as well as professionals should engage with policy makers in formulating a policy based on cost benefit considerations as well as overall societal view of prioritization that is not based on age alone. The findings of this study may be of relevance to East Asian countries that are ageing rapidly where financing of health and social care are becoming major issues, such as mainland China, Taiwan, Singapore, Japan, Korea, and Malaysia [45].

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17

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Appendix 1: Questionnaire

Section I: Priority rating of health services

Please arrange the below 12 twelve health services, in the order from highest priority to lowest priority by filling in the boxes with the corresponding codes.
1. District nursing and community services/care at home
2. Treatment for infertility
3. Psychiatric services for people with mental illness
4. Surgery, such as hip replacement, to help people carry out everyday tasks
5. Treatments for children with life threatening illnesses
6. Special care and pain relief for people who are dying
7. Preventive screening services and immunizations
8. Long stay hospital care for elderly people
9. Treatment for people aged 75 and over with life threatening illness
10. High technology surgery, organ transplants and procedures which treat life threatening conditions
11. Health promotion/education services to help people lead healthy lives
12. Intensive care for premature babies who weigh less than 680 g with only a slight chance of survival

Priority Rank

Highest Priority   Lowest Priority

Section II: Attitude about health priorities
Please cross "X" with the appropriate boxes to indicate the extent of your agreement or disagreement to the following six statements.
1. High cost technology (for example, transplantation and kidney machines) should be available to all regardless of age.

☐ Strongly disagree   ☐ Disagree   ☐ Neither disagree or agree   ☐ Agree   ☐ Strongly agree

2. People who contribute to their own illness – for example, through smoking, obesity, or excessive drinking – should have lower priority for their health care than others.

☐ Strongly disagree   ☐ Disagree   ☐ Neither disagree or agree   ☐ Agree   ☐ Strongly agree

3. The responsibility to ration health care spending should rest with the doctor rather than a hospital manager, health authority, politician, or government minister.

☐ Strongly disagree   ☐ Disagree   ☐ Neither disagree or agree   ☐ Agree   ☐ Strongly agree

4. The government should issue guidelines to doctors about when not to use lifesaving medical treatment/technology.

☐ Strongly disagree   ☐ Disagree   ☐ Neither disagree or agree   ☐ Agree   ☐ Strongly agree

5. If resources must be rationed, higher priority should be given to treating the young than the elderly.

☐ Strongly disagree   ☐ Disagree   ☐ Neither disagree or agree   ☐ Agree   ☐ Strongly agree

6. The patient's quality of life should be considered in determining whether or not to use lifesaving treatment/technology.

☐ Strongly disagree   ☐ Disagree   ☐ Neither disagree or agree   ☐ Agree   ☐ Strongly agree

Section III

If health services rationing is inevitable, Please arrange from who should have most say in setting priorities for health services. (1 – Should have the most say, 5 – Should have the least say)

☐ Doctors at local level
☐ Hospital managers
☐ The public
☐ Hospital Authority
☐ Politicians and the government

If you were in charge of the Hospital Authority with HK$20 million left to allocate for your health budgets, which of the following would you choose to do? (Please cross "X" for the appropriate.)

☐ A health screening and education programme which could prevent a large number of people needing lifesaving operations in the future (for example, screening for cancers)

☐ 10 extra immediate lifesaving operations this year (for example, heart bypass or organ transplants)

Do you agree surveys of the general public's opinions, like this one, should be used in the planning of health services? (Please cross "X" for the appropriate.)

☐ Agree   ☐ Disagree   ☐ I don't know

Please fill in the form below. (Please cross "X" for the appropriate.)

1. Age _____

2. Sex ☐ Male ☐ Female

3. Marital status
   ☐ Single ☐ Married or cohabiting ☐ Divorced / separated ☐ Widowed

4. <u>District of residence</u>：
   ☐Central & Western ☐ Eastern ☐Southern ☐Wan Chai ☐Yau Tsim Mong
   ☐Sham Shui Po ☐Wong Tai Sin ☐ Kwun Tong ☐ Sai Kung ☐Kowloon City
   ☐Sha Tin ☐Tai Po ☐Tsuen Wan ☐ Kwai Tsing ☐Tuen Mun
   ☐Yuen Long ☐North ☐Islands

5. <u>Housing tenure</u>：
   ☐Owner-occupier ☐Tenant ☐Provided by employer ☐Rent free
   ☐Others, please specify:
   _____

6. <u>Educational level</u>：
   ☐ Informal education ☐No schooling / Pre- school ☐Primary
   ☐Lower secondary ☐Upper secondary ☐Matriculation
   ☐Tertiary (non-degree) ☐Degree ☐Postgraduate

7. <u>Economic activity</u>：
   ☐Retired ☐Home-makers ☐Managers and administrators ☐Professionals
   ☐Associate professionals ☐Clerks ☐Service workers and shop sales workers ☐Craft and related workers
   ☐Plant and machine operators and assemblers ☐Elementary occupations ☐Unemployed ☐Others, please specify : _____

8. Self rated state of health
   ☐Excellent ☐Very good ☐Good ☐Poor ☐Very poor

9. Health status
   ☐Longstanding illness ☐Disability or infirmity ☐Longstanding illness & infirmity
   ☐None

10 Ethnic group

☐ Chinese ☐ Non-Chinese

Table 1 - *Sociodemographic characteristics of sample. Figures are percentages (numbers)*

Characteristic	Percentage% Frequency
Age:	
18-49	45.4 (687)
50-64	18.0 (272)
≥65	36.6 (553)
Sex:	
Male	38.5 (582)
Female	61.5 (930)
Marital status:	
Married	58.7 (887)
Single	31.3 (474)
Widowed, divorced or separated	10.0 (151)
Ethnic group:	
Chinese	98.7 (1492)
Non-Chinese	1.3 (20)
Housing tenure:	
Owner-occupier	59.9 (905)
Tenant	34.3 (519)
Provided by employer	1.0 (15)
Rent free	3.1 (47)
Others	1.7 (26)
Economic activity:	
Working (full or part-time)	45.1 (682)
Unemployed or inactive	54.9 (830)
Economic activity (Position):	
Retired	42.1 (636)
Home-makers	3.2 (49)
Managers and administrators	4.5 (68)
Professionals	23.1 (349)
Associate professionals	3.9 (59)
Clerks	7.6 (115)
Service workers and shop sales workers	2.3 (35)
Craft and related workers	0.6 (9)
Plant and machine operators and assemblers	0.5 (7)
Elementary occupations	1.3 (20)
Unemployed	2.6 (39)
Others	2.0 (30)
Student	6.3 (96)
Health Status:	
Longstanding illness	31.1 (470)
Disability or infirmity	0.7 (11)
Longstanding illness & infirmity	1.1 (17)
None	67.1 (1014)
Regroup	
None reported	67.1 (1014)
Reported longstanding illness, disability or both	32.9 (498)
Self-rated state of health:	
Excellent	5.8 (88)
Very good	25.6 (387)
Good	32.1 (485)
Poor	32.0 (484)
Very poor	4.5 (68)
Educational Level:	
Informal education	2.4 (37)
No schooling or Pre-primary	8.1 (122)
Primary	18.0 (272)
Lower secondary	11.7 (177)
Upper secondary	14.2 (214)
Matriculation	2.8 (43)
Tertiary (non-degree)	7.9 (119)
Degree	21.0 (318)
Postgraduate	13.9 (210)
Total	1512

Table 2 - *Priority rating of health services. Figures are percentages (numbers)*

Priority	Priority rank												N	Mean	Mean p rank
	1	2	3	4	5	6	7	8	9	10	11	12			
Treatment for children with life threatening illnesses	30.22 (457)	15.15 (229)	12.76 (193)	9.59 (145)	7.80 (118)	6.08 (92)	5.49 (83)	5.16 (78)	2.91 (44)	2.84 (43)	1.39 (21)	0.60 (9)	1512	3.69	1
High technology surgery, organ transplants and procedures which treat life threatening conditions	9.72 (147)	15.01 (227)	12.96 (196)	11.64 (176)	9.19 (139)	8.53 (129)	7.54 (114)	7.54 (114)	6.15 (93)	6.35 (96)	3.90 (59)	1.46 (22)	1512	5.15	2
Preventive screening services and immunisations	9.99 (151)	13.89 (210)	10.05 (152)	7.67 (116)	7.67 (116)	8.20 (124)	7.94 (120)	8.99 (136)	9.33 (141)	8.40 (127)	5.49 (83)	2.38 (36)	1512	5.71	3
Surgery, such as hip replacement, to help people carry out everyday tasks	4.10 (62)	9.52 (144)	10.25 (155)	12.83 (194)	13.62 (206)	12.10 (183)	10.52 (159)	9.06 (137)	7.61 (115)	4.43 (67)	4.43 (67)	1.52 (23)	1512	5.72	4
Health promotion/education services to help people lead healthy lives	19.25 (291)	8.13 (123)	5.95 (90)	7.41 (112)	7.34 (111)	7.01 (106)	7.28 (110)	6.55 (99)	7.41 (112)	8.33 (126)	7.67 (116)	7.67 (116)	1512	5.92	5
Psychiatric services for people with mental illness	5.16 (78)	6.22 (94)	9.39 (142)	9.72 (147)	12.24 (185)	11.90 (180)	9.99 (151)	11.18 (169)	8.86 (134)	6.35 (96)	5.89 (89)	3.11 (47)	1512	6.22	6
District nursing and community services/care at home	8.47 (128)	7.21 (109)	7.80 (118)	8.13 (123)	8.93 (135)	10.58 (160)	9.79 (148)	8.40 (127)	9.26 (140)	7.54 (114)	8.27 (125)	5.62 (85)	1512	6.40	7
Long stay hospital care for elderly people	4.56 (69)	6.68 (101)	8.00 (121)	8.60 (130)	9.52 (144)	10.85 (164)	12.50 (189)	11.57 (175)	11.84 (179)	8.53 (129)	5.49 (83)	1.85 (28)	1512	6.44	8
Treatment for people aged 75 and over with life threatening illness	3.70 (56)	9.52 (144)	10.45 (158)	9.85 (149)	6.94 (105)	7.14 (108)	7.28 (110)	9.13 (138)	8.66 (131)	12.76 (193)	10.05 (152)	4.50 (68)	1512	6.65	9
Special care and pain relief for people who are dying	2.31 (35)	3.31 (50)	6.55 (99)	6.28 (95)	9.46 (143)	8.93 (135)	11.71 (177)	9.59 (145)	12.83 (194)	13.36 (202)	9.79 (148)	5.89 (89)	1512	7.41	10
Intensive care for premature babies who weigh less than 680g with only a slight chance of survival	2.25 (34)	4.56 (69)	4.70 (71)	6.55 (99)	4.89 (74)	5.42 (82)	4.76 (72)	7.01 (106)	7.01 (106)	9.52 (144)	20.90 (316)	22.42 (339)	1512	8.55	11
Treatment for infertility	0.26 (4)	0.79 (12)	1.12 (17)	1.72 (26)	2.38 (36)	3.24 (49)	5.22 (79)	5.82 (88)	8.13 (123)	11.57 (175)	16.73 (253)	42.99 (650)	1512	10.15	12

Table 3 - *Attitudes about health priorities. Figures are percentages (numbers)*

Possible answers	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
High cost technology (for example, transplantation and kidney machines) should be available to all regardless of age	3.90 (59)	15.94 (241)	21.76 (329)	47.16 (713)	11.24 (170)
If resources must be rationed, higher priority should be given to treating the young than the elderly	7.14 (108)	27.31 (413)	21.56 (326)	36.71 (555)	7.28 (110)
The patient's quality of life should be considered in determining whether or not to use lifesaving treatment/technology	2.71 (41)	15.61 (236)	12.50 (189)	47.88 (724)	21.30 (322)
People who contribute to their own illness--for example, through smoking, obesity, or excessive drinking--should have lower priority for their health care than others	3.90 (59)	21.96 (332)	19.51 (295)	39.15 (592)	15.48 (234)
The responsibility to ration health care spending should rest with the doctor rather than a hospital manager, health authority, politician, or government minister	6.55 (99)	27.18 (411)	18.52 (280)	36.90 (558)	10.85 (164)
The government should issue guidelines to doctors about when not to use lifesaving medical treatment/technology	9.39 (142)	28.57 (432)	16.34 (247)	39.29 (594)	6.42 (97)

Table 4 - *Factors associated with lower or higher priority of the services in HK survey, based on ordinal regression model*

	Special care & pain relief for people who are dying	District nursing & community services/ Care at home	Long stay hospital care for elderly people	Treatment for people aged 75+ with life threatening illness	Treatment for children with life threatening illnesses	Intensive care for premature babies who weigh less than 680g with only a slight chance of survival	Preventive screening services & immuni-zations	Health promotion/ education services to help people lead healthy lives	Surgery, such as hip replacement, to help people carry out everyday tasks	High technology surgery, organ transplants and procedures which treat life threatening conditions	Psychiatric services for people with mental illness	Treatment for infertility
Age group												
Aged 18-49		Lower	Lower		Higher	Higher			Higher	Higher	Lower	
Aged 50-64		Lower	Lower	Lower				Higher	Higher	Higher		
Aged 65+ (ref)												
Education level												
Informal education, no schooling & primary							Lower	Lower	Higher		Lower	Higher
Lower & Upper secondary & Matriculation							Lower	Lower	Higher			Higher
Tertiary (non-degree), degree & postgraduate (ref)												
Econ & Prof Status												
Retired, homemakers, students or Unemployed		Lower	Higher	Higher		Higher		Lower				
General Workers		Lower		Higher		Higher		Lower		Higher		
Professionals in non-HA sector						Higher		Lower				Lower
Professionals in HA (ref)												

Note: While different levels of a factor may be significantly different from the reference level, none of the above factor showed significant differences between different levels (except ref).

Age group, gender, educational level, professional status and health status were included in the model.

Table 5 *-Factors associated with agreement to statements of attitudes towards health prioritisation in HK survey (based on binary logistic regression)*

	High cost technology should be available to all regardless of age			People who contribute to their own illness--for example, through smoking, obesity, or excessive drinking--should have lower priority for their health care than others			The responsibility to ration health care spending should rest with the doctor rather than a hospital manager, health authority, politician, or government minister			The government should issue guidelines to doctors about when not to use lifesaving medical treatment/technology			If resources must be rationed, higher priority should be given to treating the young than the elderly			The patient's QoL should be considered in determining whether or not to use lifesaving treatment/technology			Who should set the priority (choosing doctors)			How to allocate budget between two choices (choosing 10 extra operations)			Do you agree surveys of the general public's opinions, like this one, should be used in the planning of health services? (choosing agree)		
	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper	OR	95% C.I.for Lower	Upper
Age Group				*									*									*					
Aged 18-49				0.4	0.3	0.6							0.6	0.4	0.9	0.6	0.4	0.9				0.4	0.3	0.7			
Aged 50-64				0.6	0.5	0.9																0.6	0.4	0.9			
Aged 65+ (ref)																											
Education level	*			*			*									*						*					
Informal education, no schooling &	1.8	1.3	2.7	1.5	1.0	2.1	1.5	1.1	2.2							0.6	0.4	0.9				2.6	1.7	3.8			
Lower & Upper secondary & Matriculation							1.5	1.1	2.0							0.5	0.4	0.8				1.8	1.3	2.5			
Tertiary (non-degree), degree & postgraduate (ref)																											
Econ & Prof Status	*						*						*			*									*		
Retired, homemakers, students or	2.3	1.4	3.7				2.0	1.2	3.1				0.4	0.3	0.6	0.3	0.2	0.6							1.9	1.2	3.1
General Workers	2.4	1.5	3.7				1.7	1.1	2.6	0.6	0.4	1.0	0.3	0.2	0.5	0.2	0.1	0.4									
Professionals in non-HA sector	2.2	1.4	3.4				1.7	1.1	2.7				0.3	0.2	0.5	0.4	0.2	0.8							2.4	1.5	4.0
Professionals in HA (ref)																											

Note: While different levels of a factor may be significantly different from the reference level, none of the above factor showed sig

Age group, gender, educational level, professional status and health status were included in the model.

* Taking all levels together, the factor is significantly associated with the odds of people agreeing.

Table 6 - *Comparison of priority ranks for services*

	Bowling, 1996	HK sample (weighted)
Treatments for children with life threatening illnesses	1	1
High technology surgery, organ transplants and procedures which treat life threatening conditions	7	2
Preventive screening services and immunisations	3	3
Surgery, such as hip replacement, to help people carry out everyday tasks	4	4
Health promotion/education services to help people lead healthy lives	8	5
Psychiatric services for people with mental illness	6	6
District nursing and community services/care at home	5	7
Long stay hospital care for elderly people	10	8
Treatment for people aged 75 and over with life threatening illness	12	9
Special care and pain relief for people who are dying	2	10
Intensive care for premature babies who weigh less than 680g with only a slight chance of survival	9	11
Treatment for infertility	11	12

Table 7 - *Comparison of Attitudes towards Health Services. Figures are percentages (numbers)*

	Bowling, 1996	HK sample (weighted)
High cost technology (for example, transplantation and kidney machines) should be available to all regardless of age.		
Strongly disagree	2% (32)	4% (63)
Disagree	11% (216)	16% (246)
Neither disagree nor agree	7% (133)	24% (359)
Agree	55% (1092)	45% (685)
Strongly agree	25% (505)	11% (159)
People who contribute to their own illness--for example, through smoking, obesity, or excessive drinking--should have lower priority for their health care than others.		
Strongly disagree	10% (188)	4% (65)
Disagree	33% (656)	24% (365)
Neither disagree nor agree	15% (289)	21% (320)
Agree	33% (656)	36% (542)
Strongly agree	9% (186)	14% (219)
The responsibility to ration health care spending should rest with the doctor rather than a hospital manager, health authority, politician, or government minister.		
Strongly disagree	1% (30)	7% (101)
Disagree	14% (271)	27% (402)
Neither disagree nor agree	10% (196)	20% (302)
Agree	48% (946)	36% (544)
Strongly agree	27% (524)	11% (163)
The government should issue guidelines to doctors about when not to use lifesaving medical treatment/technology.		
Strongly disagree	28% (548)	8% (124)
Disagree	49% (962)	28% (429)
Neither disagree nor agree	8% (165)	18% (265)
Agree	12% (245)	39% (592)
Strongly agree	2% (47)	7% (102)
If resources must be rationed, higher priority should be given to treating the young than the elderly.		
Strongly disagree	5% (94)	7% (100)
Disagree	24% (476)	29% (432)
Neither disagree nor agree	21% (422)	23% (343)
Agree	40% (776)	36% (540)
Strongly agree	10% (203)	6% (97)
The patient's QoL should be considered in determining whether or not to use lifesaving treatment/technology.		
Strongly disagree	2% (52)	3% (40)
Disagree	12% (237)	16% (236)
Neither disagree nor agree	12% (227)	13% (193)
Agree	51% (1004)	47% (706)
Strongly agree	23% (451)	22% (337)