Geo-ethnography in Segamat: Mapping Health Services and Understanding Choice in a Pluralistic System

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Introduction

This research report details the diverse health services available within Malaysia's Segamat district, with a particular focus on the regional communities of Bekok, Chaah, Gemereh and Sungai Segamat. This research was conducted in conjunction with the South East Asian Community Observatory (SEACO) located in Segamat, with the intention of documenting the spatial distribution of health services in the district and exploring attitudes towards the plural health care system in Malaysia. This report collates the data collected from our research encounters in each community and reflects on the health services available and their spatial distribution, as well as how varied factors in each community influence which services participants use and in which circumstances.

Aim

The aim of this research project is to understand how people access and use health services in a rural Malaysian context.

Objectives

- To identify the spatial distribution of traditional, conventional and complementary health services in the rural district of Segamat.
- To understand the social determinants influencing the variation of choices in regards to health care services.
- To explore community attitudes towards the pluralistic health sector and the variety of services available within communities.

Background

This research has been undertaken with the cooperation of SEACO, in line with their mission to conduct 'community based "whole of life research" that informs [...]

questions related to population health and wellbeing' (South East Asia Community Observatory [SEACO] 2014, para. 5). As a research platform, the work of SEACO has the potential to affect change in attitudes towards public health, from local community through to policy levels.

To reach the World Health Organisation's goal of delivering health services of a standard that meets the fundamental rights of every human being, it is suggested that seven platforms need to be addressed throughout the policy implementation stage; Non-discrimination, availability, accessibility, acceptability, quality, accountability and universality (World Health Organisation 2015). Of these seven vantage points, this research draws upon the following four lenses: availability, accessibility, acceptability and quality, to gain insight into the relationship between community members of the Segamat district and local health services. Through gaining an understanding of how people access, use and perceive health services in the Segamat district, this research has the potential to contribute to current understandings on the availability and accessibility of affordable health care, elements the World Health Organisation describe as 'critical for functioning health systems and fundamental for obtaining universal health coverage' (World Health Organisation 2016).

Standing literature asserts Malaysia to be a multiethnic society with a pluralistic health system that draws on both traditional and modern medicines in its approach to general health and wellbeing. A high proportion of existing literature is successful in describing the variety of health services available, but scope remains to investigate the factors which shape how people both approach and perceive the diverse health service sector. Conventional or Western biomedical practices, defined as being 'based upon the principles of modern science, in which the concepts of health and illness are viewed in terms of the organic, biological constitution of the human body' (Stoner 1986) form the basis of a well developed system of medicinal resources in Malaysia (Heng Leng & Heong Hong 2015, p.313). These span both the private and public realm (Heng Leng & Heong Hong 2015, p.313). With Krishnaswamy et al. (2009) contending that 97% of Malaysians have access to health care resources, the majority of which falls within three kilometres of their homes, this research further evidences the well developed system of conventional medicinal resources that are available through both private and public services. This research considers and

explores the avenues sought outside of the conventional system for health maintenance and health care purposes. Although, the research of Krishnaswamy et al. (2009) evidences the availability of health services, it may not be an accurate representation of the Segamat district and the availability of adequate health care within this geographical area. Our findings show that there are numerous factors other than pure proximity, which are influential in shaping health care usage.

Beyond the conventional health sector in Malaysia, a range of alternative health services exist (Heggenhougen 1980, p. 235; Siti et al. 2009, p.293), which can be categorised by the umbrella term 'complementary and alternative medicines' (CAM). This is inclusive of traditional medicine and nonstandard forms of medical intervention (Traditional and Complementary Medicine Division Ministry of Health, Malaysia 2011). Drawing on the World Health Organisation's (2016) definition, traditional medicine is the 'sum total of knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness". Existing literature comprehensively explores the origins of traditional practice, with Giok Ling Ooi (1993) describing its re-emergence in popularity as a direct response to the shortfalls of the conventional system. Heggenhougen's (1980) understanding differs slightly, recognising that the pluralistic nature of the Malaysian health care system is more so a reflection of the cultural and social diversity. Despite being recognised as two separate mediums of health care, CAM is increasingly being used alongside conventional health care practices with a multifaceted approach to health care an important phenomenon in Malaysia (Stoner 1986, p.45).

The government's Integrated Hospital Program, which seeks to advocate for better practitioner cooperation and public access in rural settings (Global Information Hub On Integrated Medicine, 2015), is reflective of the pluralistic nature of Malaysia's health care system and its importance to the people. With a 2009 study suggesting that 69.4% of Malaysian citizens use CAM within their lifetimes (Traditional and Complementary Medicine Division Ministry of Health, Malaysia 2011, p.2), a strong

case is made for its formal inclusion into the health sector and for further exploration into the existing perceptions and beliefs surrounding its current role.

As there are no significant nationwide studies on patterns of health service utilisation in Malaysia (Krishnaswamy 2009, p. 443), this research seeks to contribute to the body of existing knowledge surrounding complementary health seeking behaviours in the Segamat District and provide SEACO with a platform for further research in this domain.

Context

This study was conducted in the Malaysian communities of Bekok, Chaah, Gemereh and Sungai Segamat, each located within the Segamat district. These four communities were chosen based on their existing relationship with SEACO, with this research being undertaken within the scope of SEACO's existing partnership with the Segamat district to conduct 'research for a healthy community' (SEACO 2016).

It is important to acknowledge Malaysia as a plural society, composed of distinct ethnic groups each living within the political entity of Malaysia (Furnivall 1939, p. 446, 463). The ethnic composition of Malaysia comprises of 67.4% Malay, 24.6% Chinese, 7.3% Indian and 0.7% other ethnicities (Department of Statistics Malaysia, 2016). With traditional medical systems in Malaysia being reflective of this diverse population (Jayaraj 2010, p.10), it was important to approach the study and analyse the data through an ethnic lens.

In addition to ethnicity, other demographic characteristics of the research participants are of considerable significance, especially age demographics and health circumstances. The predominant age cohort represented in this study were those 60 years or above, a factor having considerable impact upon our research. With the Malaysian social health model entirely subsidising the premiums for citizens in this age bracket (Heng Leng & Heong Hong 2015, p.314), it is reasonable to conclude that health service use and sector choice was subsequently influenced. The health backgrounds of the research participants is also significant with a high proportion of participants having medical histories of cardiovascular disease. With only one fifth of cardiovascular specialists operating in the public sector (Heng Leng & Heong Hong

2015, p.313), choice between the public and private health spheres is considerably limited, once again a factor considerably informing choice.

Methods

The research involved a mixed methods approach; incorporating participatory rural appraisal (PRA) methods, transect walks and health mapping, with traditional qualitative data collection through the means of focus group discussions and semi-structured interviews. These varied methods ensured flexibility and multiple levels of engagement with participants, which allowed for a more in depth analysis of the use of, and attitudes towards the health services in each community (Chambers 1994). Qualitative research combined with transect walks and the use of Geographic Information Systems (GIS) allowed us to best meet our aim and objectives. The nature of qualitative research in exploring the behaviours and attitudes of participants provided the capacity to examine the diverse perspectives of the participants (Chambers 1994). The transect walk and health mapping were used to examine the spatial distribution of health services in each community and provided insight into the contextual factors that influenced participants' choices regarding health services.

With multiple researchers and the addition of staff from SEACO, multiple methods could be conducted simultaneously in order to collect a variety of data from each of our participant groups. The research team comprised of four students from Monash University, Australia and two local SEACO staff members. As well as the SEACO staff who acted as interpreters, we had the added benefit of two students, one Chinese and one Chinese-Malaysian being able to communicate in local languages. In Bekok and Sungai Segamat both of these students were able to draw upon their Chinese language skills, and in Chaah and Gemereh our Malay researcher was able to communicate in the local language, Bahasa Malaysia.[1] This allowed a significant level of flexibility, as members of our research team were able to conduct informal interviews whilst the field staff were acting as translators for our focus groups and transect walks. This provided our team with a greater number of research encounters and allowed more in depth discussions with many participants, ultimately adding to the depth of our data. This flexibility is evident in an unplanned research encounter at an Orang Asli school nearby to Bekok, where a series of informal conversations lead to us gaining another set of perspectives on our research questions.

The use of translators comprised an essential element of the research methods and it is important to acknowledge the potential influence this had on the research

[1] Due to the multiple dialects used during the research encounters, the term 'Chinese language' has been chosen to accommodate for all of these.

findings (Shimpuku & Norr 2012). The integration of translators into the research process is a key component of this study as they acted not only as translators but also as crucial members of the research team. The role of the translator extended to ensuring the engagement of participants, communicating a cultural understanding of responses and guiding the research direction by applying their own contextual knowledge to the situation. The process of building relationships with the SEACO staff and briefing them on our project objectives was therefore vital to the successful conduct of our research.

Alongside the SEACO field staff, the composition of our team having both 'insiders and outsiders' impacted not only our flexibility in the way we were able to conduct research but also demonstrated how the researcher can shape the information found (Kerstetter 2012). It is important as researchers to remember that our observations and interpretations are not entirely removed from our own individualities and positionality (Chavez 2008). This became evident through our research as discrepancies in data arose from our varied researchers. Whilst as outsiders there is the benefit of being a detached and neutral observer, insider researchers are able to engage participants more easily and better understand participant experiences in their cultural context (Kerstetter 2012). An insider researcher must however be aware of the added difficulty of separating one's own experiences from the research undertaken (Kerstetter 2012). Discrepancies in our data demonstrated how these differences played out in practice, but also suggested the benefit of having a team comprising of a variety of researchers as it allowed the data collected to be continuously triangulated. One participant provided a clear example of this, exhibiting scepticism and disbelief in response to one researcher's questions regarding traditional healers, but later confiding in the Malay researcher that she herself is a traditional healer. This highlighted the strong influence that the researcher's positionality can hold over the data collected.

Using qualitative methods of data collection it was possible to uphold a sense of empowerment for participants, as they were asked to lead conversations and focus on the factors important to them (Chambers 1994). Our focus group discussions constituted a primary element of the qualitative data produced. We used health mapping, asking participants to locate the health services in their community, not only as a tool to prompt discussion surrounding the use of health services, but as a way of clarifying and cross checking data with that collected on the transect walk. Whilst the transect walk identified the spatial distribution of health services, these focus group discussions allowed further investigation of which services are preferred, the way in which they are used and the influences that shape these decisions. With multiple researchers, we were also able to invite individual members of our focus groups to engage in concurrent informal interviews. These interviews allowed a more thorough discussion of personal stories and experiences and provided greater depth to the reasons behind participant decisions regarding health care.

The transect walks were important in providing an understanding of the varied health services available in each community. As well as providing a more thorough understanding of the distribution of services, the transect walk also allowed interaction with many of the health practitioners themselves, providing further information as to what each service provides. The presence of a community member on each transect walk not only ensured we were directed to relevant services, but also provided an insight into community perceptions of each health service. Whilst the original intention for our transect walk was to involve the physical mapping of services, the unexpected size and layout of the communities prompted an alteration in the initial plan. Without the ability to physically map the services throughout the transect walk, a greater emphasis was placed on our trial use of GIS mapping. This system allowed us to mark GPS coordinates at each health service and enter relevant data and photos. The GIS system provided the opportunity to link photos and information with a GPS location, but most importantly, it allowed triangulation to ensure the accuracy of services identified in the health mapping exercise, which was completed during focus groups.

Geographic Information Systems technology has the capability of mapping a breadth of data in an easily accessible format, allowing for the visual representation of health services in each community (Matthews et al. 2005, p. 76; Phillips et al. 2000, p. 971). The combination of GIS and qualitative ethnographic data provides the opportunity to visually represent and analyse the relationship of contextual elements, such as neighbourhood characteristics, with decisions towards the use of health services (Keddem et al. 2015). There are options to combine data through the combination of GIS and a qualitative data analysis tool (Jung & Elwood 2010). Transforming data for geovisualisation, incorporating hyperlinks, encoding data into GIS maps and producing layer maps are all potential methods which could be used to better represent and analyse the spatial distribution of health services, the services they offer and other contextual elements which may influence decisions regarding health care in a community (Jung & Elwood 2010; Keddem et al. 2015). The GIS application used for this research, “MapIt”, was user friendly, provided accurate location information and was non reliant on phone networks. Difficulties arose in transferring data to desktop format, as finding an appropriate open source software proved complicated. It has been particularly challenging trying to find software that is available in both app and desktop versions, as well as being accessible across operating systems. The information gathered through the MapIt application, including but not limited to photographs, GPS locations and opening times would ideally be incorporated into a GIS program in the manner suggested by Jung and Elwood. While the use of MapIt within our research demonstrated the potential for combined GIS mapping and qualitative research, restricted access to suitable software hindered our ability to create a final GIS product. A discussion of GIS software experimentation and difficulties may be found in Appendix 3. The maps and Appendix 1A through 1D attached in this report reflect the data that could be utilised in GIS software.

Multiple data analysis techniques were employed to interpret and analyse the information collected. Debriefing throughout the data collection process was important in the identification of emerging themes and key points of interest. This also allowed us to shape our lines of questioning around these themes. Writing up our field notes was another important aspect that allowed the processing of data, identification of discrepancies between data and the initial process of coding themes. After the collection of all data, mind mapping exercises were used to extract themes from each community and develop a snapshot of the use of services and influencing factors in each community. The themes identified became the headings used in one axis of our charting process, and focus groups, separated by community and gender, made up the other axis. Data from the field notes was then used to complete the chart, making use of our previous coding. This use of coding and charting allowed the reduction of data to manageable themes and provided a platform to analyse how various influences affected the participant's use of health services (Saldaña 2013).

Findings

Services Available

This section presents the health services mapped in each of the communities, Bekok, Chaah, Gemereh and Sungai Segamat, where research was conducted. Our participant groups were ethnically divided and as such, the services mapped may be more reflective of the ethnic groups and their health seeking behaviours than the services available in a holistic sense. For instance, the Malay participants mapped a large number of Malay healers in Gemereh, while the Chinese participants in nearby Sungai Segamat revealed none. Given their relative proximity and population densities, it is unlikely that Sungai Segamat lacked Malay healers, suggesting instead that the participant groups chosen revealed only a subset of the range of services available. None the less, our research revealed a breadth of conventional and CAM health service providers and therefore offers a representative sample of those available in the Segamat district. The maps in this section provide the location of the GPS located services; the numbers correspond to the relevant tables presented in appendix 1A through 1D which provide further details on the services, as revealed through our research. Appendix 2 contains the maps from the focus group mapping activity, which reveal several additional resources that could not be entered into the GIS program due to a lack of accurate data on their locations.

Bekok

Bekok is a rural Chinese majority village. The participants interviewed were of an older generation and relied on nearby government and private clinics as well as traditional pharmacies. This research identified one *Klinik Kesihatan* in Bekok with the community relying upon the Segamat Hospital for any further consultation. In

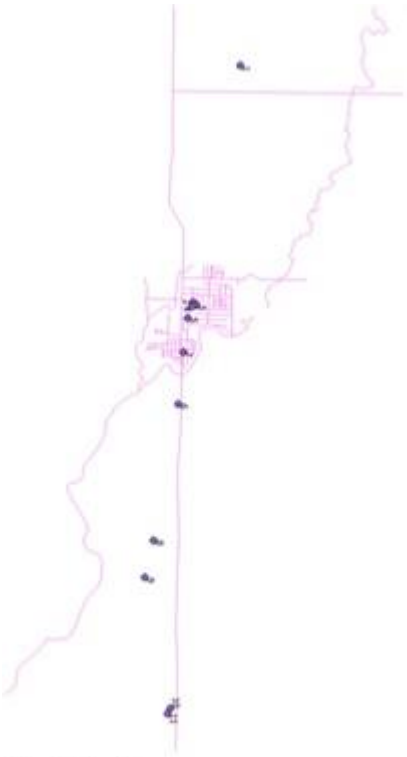
comparison to other communities, a greater number of traditional Chinese temples were identified. The temples were often explicit in their acceptance of either men or women, and were frequented by community members in their strive to achieve health and wellbeing. There are two traditional medication shops in Bekok, one stocking a combination of Western and Chinese medication, and the other retailing Chinese herbs exclusively. One Malay healer of Indonesian origins as well as a Malay masseuse was also identified.

Map 1: Bekok

Chaah:

This research identified that Chaah has one Estate Clinic and two dominating government services, the *Klinik Kesihatan* with a maternal health clinic adjacent to it and the *Klinik Desa*. Chaah does not have its own public hospital and instead relies upon the Segamat Hospital, which services the entire district. Two private clinics were identified in Chaah as well as four Chinese medication shops, some of which also acted as general retail stores in addition to their provision of health services and medications. External to the availability of products within regular stores, locals also sought out health products at the local market, which ran during both the morning and night.

One Malay Healer with a particularly good reputation was expressly discussed, with participants also suggesting the existence of a number of other healers in the Chaah area. One of the more unique traditional health services identified was the bee farm, a traditional method based upon the belief that bee stings and their subsequent removal can cure sinus issues.



Map 1: Chaah

Gemereh:

This research found that Gemereh has one *Klinik Kesihatan* and one *Klinik Desa*. The community's proximity to Segamat also made the Segamat hospital an easily accessible option. Gemereh is also heavily populated with traditional practices, particularly those offered by the ethnic Malay community. Malay Healers offer a range of different health services combining massage, herbal treatments and other alternate therapies into their practice. Depending on the Healer's specialisation, services were offered either exclusively to one gender group or open to the public. An example of this is one Malay healer who specialised in traditional midwifery practices and specialised in women's and postnatal health.

A number of unique traditional therapies emerged in Gemereh, each contributing to the subset of traditional health services available in this community. Spiritual healing is of importance, with bomoh and shamans drawing upon religion, ghosts and spirits in order to carry out their practice. On the other end of the scale, traditional techniques such as the retailing of coconut oil for use in healing both internal wounds and external injuries were present. Another example would be the honey farm, which utilised the honey produced by the Meliponini bee species to help regulate blood sugar levels, cure diabetes and supplement the need for vitamins. The honey farm also retailed a range of natural plant products such as *kachit fatura* and *tongkat ali,* which were renowned for being used in the treatment of both men's and women's private health issues.

Map 1: Gemereh

Sungai Segamat:

Sungai Segamat is the main centre of the Segamat district and houses the district hospital as well as public community clinics of varying accreditations. This research found a wider range of resources than those available in other nearby communities. Sungai Segamat has a high number of traditional medication shops and clinics. This research found several Chinese medicine shops, offering either Chinese medication, acupuncture, orthopaedics or a combination of these services. Another traditional health service available was a Malay massage therapist specialising in sexual health. General health massage was also available. Sungai Segamat differs from the other towns with the existence of its public haemodialysis centre. Mapping of health services found a trend of private health clinics opening in preference to traditional medicine stores. This reflected the trend suggested by participants in Sungai Segamat, that younger generations were not taking up traditional medical practices. This research found numerous conventional health centres in Sungai Segamat, including nine private clinics, three private pharmacies, two dental clinics, one orthopaedist and one reflexologist. With government grants, community groups in Sungai Segamat have been organising a trip to *Klinik Kesihatan* - Bandar Putra annually for pap smears and mammograms. The trip is organised free of charge and

draws a large patronage from within and without the Chinese community.

Map 1: Sungai Segamat

Map 2: Sungai Segamat

Choice of Health Services

The Segamat hospital provided a centralised health service, which was accessed by participants in all four communities. Each community also demonstrated use of their

local government clinics, including the *Klinik Kesihatan* and *Klinik Desa.* Whilst these local government health services were generally used in all communities, there remained distinct differences in the use of health services between communities. This suggests a reflection of the ethnic group in each community and their varied accessibility to particular services. In this section, the report will identify the health services that participants in each community decided to use in response to particular ailments.

Bekok

The majority of participants in Bekok attended the local *Klinik Kesihatan* for basic treatment. It was apparent that seniors and those suffering from diabetes attended the clinic every three months for a general health check up. The research participants in Bekok were of Chinese-Malaysian ethnicity, a factor that informed their choice to incorporate traditional Chinese medicine into their health practice, e.g. purchasing herbal treatment from the Chinese medicine stores in town. It was also noted that over the counter medicines were cheaper from Chinese stores, with many people purchasing pain relief such as paracetamol here, rather than the pharmacy.

The government clinic and two Chinese medicine shops are the three health services that our research participants chose to utilise in Bekok. However, many of these participants chose to travel outside Bekok for what were described as 'better' services, including the Segamat Hospital for serious health care and childbirth, private clinics for dental treatment as well as private services for women's health. A young woman shared her father's story, stating that if he were to fall ill or require a health check, his only choice would be a private clinic or hospital outside of Bekok, a direct result of his time restraints as a full-time employee.

In situations where conventional options had been exhausted and progress remained stagnant, Chinese traditional practices were often turned to in a final plea for health improvement. Multiple stroke victims recounted their traditional medicine journey and prescribed their improvement in physical capability to the Chinese therapies available, claiming that they rejuvenated the mind and body.

In regards to prevention, outside of traditional Chinese herbal use and engagement in physical exercise, participants also provided information to suggest that prayer is a considerable contributor in Bekok. The participants identified several temples in the community, used as destinations for those wanting to incorporate prayer into their health routine. Some participants from the group suggested that people seek help from the temple, calling upon god and supernatural powers to assist them when both CAM and conventional therapies have failed to resolve issues.

Chaah

The Indian-Malaysian group presented different health service behaviours in comparison to the other communities. Participants in Chaah seemed more open to all types of CAM and conventional health services that were available to them. There was a large tendency to seek treatment at the *Klinik Kesihatan* instead of private clinics in this community. Most of the research participants expressed dissatisfaction with the health services in Chaah, with the data collected in the focus groups and individual interviews demonstrating that a high proportion of participants sought health services outside of those available in Chaah itself. One participant frequented Kuala Lumpur, visiting at least once every three months in order to seek diabetes treatment and purchase her medication. This story demonstrates the lengths some individuals will go to in order to do attain what they feel is appropriate health care.

According to the information that emerged through the focus group discussions, there was significant dissatisfaction with the *Klinik Kesihatan* in Chaah. Despite this expressed concern, the majority of participants still regarded this service to be their primary health provider, something that can be attributed to its affordability, a result of the heavy government subsidy. A young man from Chaah, who, alongside his father, experienced mobility issues, rated the private health services over the *Klinik Kesihatan* due to the extended services they offered. The private doctor offered the flexibility of providing treatment within the patient's home, adding an element of considerable convenience. These factors allowed the participant to justify spending 50RM per visit in comparison to what would have been just 1RM in the public sector.

A finding of particular interest in Chaah was the hesitance of the participants to rely upon CAM. Even though the participants were of Indian ethnicity, people from this community rarely discussed the explicit use of Indian traditional medicine. A few female participants eluded to the use of herbal treatments in post-natal care but beyond this only minimal reference was made. In regards to Traditional Malay and Chinese practices, the acceptance of such services was acknowledged and welcomed although usage remained low. Treatments from these services was confined to low risk health concerns such as broken bones, a pattern consistent across all four communities. In contrast to the participants who were totally dismissive of CAM techniques, others expressed their use of such services in extreme circumstances or as a last resort, showing their willingness to pursue all available treatment options if the need arose.

Gemereh

The participants in Gemereh provided an insight into how Gemereh's Malay community utilised health services. It is important to note that this community is

located close to the Segamat town centre, a factor that ensures this community have better access to the Segamat Hospital.

Almost all of the research participants attend the Segamat Hospital for the majority of health issues. There are few clinics located within the community, the most valuable being the *Klinik Kesihatan* which was formally the district hospital. Despite the capability of this government clinic, the participants still preferred to seek health advice and treatment at the Segamat Hospital.
Despite the *Klinik Kesihatan* being much better equipped than its counterparts in Bekok or Chaah, participants preferred the hospital due to its superiority in the health care ranks and the quality of service provided. Very few participants indicated usage of the *Klinik Desa* due to high levels of scepticism relating to the quality of services available, the exception to this rule was its provision of maternal health care, which was relied upon by the community. Our research also revealed that Islamic male circumcision is performed on infants at usual government clinics, however the procedure performed upon Islamic female infants is done outside of the conventional system by a traditional Malay Midwife.

The participants in Gemereh were more willing to use traditional Malay healers and Bomohs than the other communities interviewed. Many participants expressed their willingness to travel outside of Gemereh in order to seek treatment from a more renowned Bomoh. For example, one woman regularly travels up to two hours to visit her Bomoh, as she does not trust the Bomohs operating in Gemereh. Despite operating outside of the conventional sector, some Malay Healers impose their own regulatory measures on treatment, with one local bone specialist refusing to accept patients after they have sought conventional advice or treatment.

In regards to preventative measures taken, Gemereh is similar to Bekok in that people utilise traditional herbal treatments, rely on prayer for health and refer to exercise as being an important factor in preventing illness. Traditional Malay herbal treatments were especially popular in Gemereh with door-to-door salespeople finding a market in this community. The participants expressed a lack of trust in this retail avenue and stated that due to their expensive prices and infrequent presence it is preferred to purchase from local sources, including local Bomohs and a local retailer who is supported by the Malaysian Ministry of Health. The participants in Gemereh demonstrated a much greater reliance on religion as a crucial element of their health. Prayer five times per day was cited as the most important aspect of health care and was a practice subsequently increased if the need arose.

Sungai Segamat

As in Bekok, our focus groups in Sungai Segamat were comprised of Chinese-Malaysian participants. The proximity of Sungai Segamat to the Segamat town

centre means that participants had a diverse range of health services easily accessible to them.

Compared with the other communities, Sungai Segamat has the highest usage of private health services. Public clinics and the hospital are used for general health checks, but participants preferred the private sector for specialist services and better treatment of illnesses. Other participants preferred to use private clinics even for minor illnesses, suggesting they would only attend the government hospital if their physical condition was not serious and time permitted. The community centre also arranges for the administering of free services for local residents, such as free blood pressure checks and a group bus service for breast cancer screenings and pap smears. It was apparent that all of the participants involved utilised a combination of services from private, public and CAM sectors.

In relation to the use of traditional health services, participants from Sungai Segamat generally utilised traditional Chinese medicine as their secondary health option. One woman from the focus group discussed her son's former illness, stating that after two weeks of treatment at the Segamat Hospital he was making no improvement. They then sought out traditional Chinese treatments with her son recovering after only one month of receiving traditional treatment. Although the use of Chinese medicine in Sungai Segamat was limited in comparison to Bekok, the women discussed the use of traditional health maintenance methods, such as point therapy, as being vital to their maintenance of good health. Devices such as the Dodam-MS were used, a technological device incorporating traditional elements of heat therapy, massage and cupping and often used on a free trial basis by many participants.

Influences

The breadth of health services in the Segamat district creates a complicated decision making process for locals, with a range of factors influencing choice. These factors contributed not only to the choice between conventional and CAM treatments, but also between public and private services. Influences that played an evident role in choice included ethnicity; cost, time commitment and distance; and personal experience. While not all of these played the expected role, they contributed significantly to the decision making process. Other important influences, which appeared to play a role existed, however produced inconclusive data due to underdeveloped lines of questioning, time restrictions and a relatively homogenous participant group. These influences included generational differences and gender, and level of education and language barriers, factors consistent with those identified by Krishnaswamy et al. (2009, p.442).

Given the relatively segregated ethnic communities, it is unsurprising that ethnicity shaped the decisions people made surrounding healthcare. Individual preferences

played a significant role in choosing services resulting in outlying data within each community. Despite this, trends were discovered within each community that were not shared across all of those analysed. In Gemereh, the largely Malay population placed trust in Malay healers, while they were rarely spoken of in other ethnic communities. Similarly, while Chinese traditional medicine was spoken about in each community, its prevalence and breadth of use was wider among the Chinese majority communities of Bekok and Sungai Segamat. Our data suggests that ethnicity, while not the only factor, substantially influenced participant decisions.

Cost, time commitment and, distance influenced the decision of health service, however, more often than not were intertwined rather than separate factors. Community members often balanced out these factors with consideration of the health issue at hand. For instance, an expensive private clinic in the neighbouring town would be chosen over the cheaper public clinic with a long wait time. One man from Sungai Segamat referred to his time as a source of value and hence something that is taken into consideration when deciding upon health sectors. This act of balancing such choice was further exemplified in Chaah, where participants explained their preference for the estate clinic situated outside of town, over the local government clinic. The estate clinic had a perceived better quality and shorter wait times; and offered a middle ground price, cheaper than private clinics though dearer than public ones. The participants at Gemereh deemed their Malay healers “ineffective and only useful for small illnesses” and hence travelled far away, up to one and a half hours, for other traditional healers, often recommended through word of mouth. Time and distance in this case are sacrificed for a perceived better quality. It is evident that cost, wait and travel times and distance shape decisions; however, they are intertwined and usually based upon individual circumstances rather than any identifiable trend within a community.

Generational and gender differences showed emergent trends in health service decisions. The participant groups consisted primarily of an older generation, often with links to cardiovascular illnesses, in order to meet the needs of a second research team. This older demographic shaped our data in a way that was reflective of their age and health. With an older demographic and focus groups split by gender, generational and gender trends emerged, however did not provide conclusive results. None the less, some analysis can be made of the trends noticed. The older generation was concerned with the decline of traditional medicine practitioners, suggesting both a firm trust in traditional medicine, as well as a shift toward conventional medicine usage in younger generations. The research reflects the free public healthcare available to citizens over the age of sixty, with high usage of public conventional medicine. This could again reflect a generational gap, however the cheap cost of the public system is unlikely to produce significantly different results across age groups. Gender differences provided less consistent results across communities, with some women claiming they preferred female doctors, while others had no preference. These preferences often played out in both generational and

gender spheres, as was the case in Chaah. The few younger women present tended to prefer female doctors while the older women were indifferent, stating they did not “have time for embarrassment”. A minority of women in each community preferred female doctors. This suggests that some level of gender bias contributes to service choice. Furthermore, if the Chaah trend proves consistent across each community, a generational divide may also exist. This would similarly reflect the overall trend of modern women receiving higher levels of education (Ministry of Women, Family and Community Development 2007); the generational divide is unsurprising given the likelihood of higher access to female doctors in the younger generation. These results provide a starting point for further research into more specific influences.

The level of education of participants, as well as language capabilities, appeared to affect their choice of health care, however our data was inconclusive in producing strong results. The Orang Asli school outside of Bekok gave insight into the education surrounding traditional medicine, with medicinal herbs being grown and learning programs regarding them firmly in place. Participants in Sungai Segamat cited their knowledge of conventional medicine to justify leaning away from traditional practitioners. Language education similarly seemed to shape how people chose health services, with participants in Bekok seeking outside care due to language barriers at the local government clinic. In Sungai Segamat, many participants identified a preference for private clinics where they could be guaranteed a doctor with Chinese language skills, opposed to the government clinics with predominantly Malay doctors. Chaah produced different results, with participants attending clinics with family members in order to translate. Despite these approaches providing a way around the difficulties encountered, education level appeared to play a role in the decisions people made surrounding health.

The use of spiritual based practices was evident in our research and proved an unexpected, though prevalent influence to health service choice. Spirituality relates to the religious and faith based health services (Speck 2005), which in Segamat incorporated Islam oriented Bomohs, belief in spirits and prayer at places of worship. The predominantly Chinese community of Bekok showed a higher level of faith based health than their Sungai Segamat counterparts. Temples were located in Bekok with descriptions of how prayer was used in conjunction with offerings as a last resort for good health. In contrast, the Malay community of Gemereh sought spiritual based healthcare for various conditions and at several stages of illness. Religion played a significant role in the health of the Gemereh community, with prayer five times a day being “the most important” part of their health regime. The Malay community of Gemereh would visit spiritual based health services for “supernatural” health issues, occasionally upon doctor referral, when no biomedical condition could be found. One account highlighted their belief in the supernatural when after suffering a stroke one man’s wife begged him to return to the plantation he worked at and beg the spirits for forgiveness. There was a highly regarded Malay Midwife in Gemereh who was able to predict the gender of a child as well as perform

post pregnancy massage. Prayer was often spoken of in conjunction with herbal remedies, such as a kaffir lime leaf bath coupled with Quran citation, a technique for improving general health. Participants often commented on the importance of diversity in health services due to the respect held for individual beliefs, something exemplified in the range of spiritual based practices available.

Personal experience emerged as potentially the largest factor to influence the choice of health care service. Participants often based their decision off recommendations from friends or family, trust in doctors previously seen, whether or not traditional medicine had worked in the past, and the perceived quality of the practitioner or medicine provided. An interesting finding from Gemereh is that one participant considers the hospital as one of the places to 'hang out' and 'catch up with good buddies'. Many participants expressed that, while they held their own preferences and beliefs, when faced with a medical issue 'people listen to each other', seeking advice from others before making a definitive decision regarding their choice of health care service. Trust of medical practitioners and the relationship built with them was also an apparent factor that influenced participants' choice of health services. One woman in Bekok specified that it was due to the relationship she had built with her doctor that she trusted the government clinic for any medical issues. Personal relationships also emerged as an influencing factor, with one man in Sungai Segamat citing his reliance on conventional medicine being his son's profession as a doctor, whilst another participant in Bekok relies on a Chinese medicine shop because her uncle owns it. Perhaps the most striking example of how past experience can shape health choice is that of a female participant in Chaah. Not long after losing her husband, she was required to call upon a doctor to make an emergency home visit to assist her gravely ill child. Feeling so helpless, even the arrival of an intoxicated doctor was a comfort, the mother relieved that some sort of medical treatment was being administered to her daughter. Although the child recovered, her realisation that expired medicine had been administered was alarming and prompted her submission of complaints and her dedication to finding a trusted doctor, which has incidentally led her outside the borders of Chaah.

Despite the many substantial factors which influence participants' use of health services, accounts of personal experiences were a recurring factor that appeared to influence almost all decisions regarding health care services. As such, our research suggests that personal experience is the largest driver as to which health services are chosen.

Conclusion

This research presents information regarding the health services and resources available within the Bekok, Chaah, Gemereh and Sungai Segamat communities within the Segamat district. The findings are intended for the use of SEACO to inform

their current work and any future research or work in these communities. This research enhances the current literature as to the factors, which affect an individual's choice to use a particular health care service as well as providing an insight into the availability of health care services in the selected communities. This could allow more open understandings of the existing healthcare systems to arise and may uncover ways in which the multiple systems could be used to complement each other.

The mapping element of this research demonstrated the prevalence of both conventional medicine and CAM in each of the four communities. It is evident that the participants use these services in varying ways. The majority of participants, regardless of the health service they would otherwise access, uses the free check-up service provided by government clinics for over 60-year-olds. A tendency to travel for higher quality health care was also recurring across all communities. However, overall the research revealed that participants used health services in incredibly varied ways which was shaped by a variety of factors. The research made evident a number of factors that influenced participant choice of health service provider. Social determinants, such as gender, ethnicity, education and generational differences, all emerged as significant influences over the participants' decisions regarding health care. However, due to the homogenous composition of our participant groups' further research would be required to confirm the emerging trends. Cost, time commitment and distance all contributed substantially to choices regarding health care, in that they were factors which were balanced against each other in the decision making process. The spirituality of participants was an outstanding factor that was evident in the research encounters with almost all participants. It is evident that some factors play a more influential role than others do, however it was personal choice, trust, individual circumstances, relationships with practitioners and past experience that appeared to shape people's choices most significantly.

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Appendix

1A)

Bekok

	Location	Details
1	Orang Asli School	Grows medicinal herbs for educational purposes
2	Government clinic	*Klinik 1Malaysia* with a typical 9-5 schedule with an after hour emergency service
3	Malay massage	An Indonesian woman providing Malay massage
4	Chinese Temple	One of the three or four Chinese temple used to pray for health
5	Chinese medicine store	A combination of chinese and western medication
6	Chinese medicine store	Sells only traditional Chinese herbs. However, this shop is in the process of closing down due to limited interest from the younger generation in inheriting the business.
7	Indian temple	An Indian temple used for prayers however, unsure whether does the temple provide health services.

B)

Chaah		
	Location	Details
1	Estate clinic (private)	This is the workers clinic for the surrounding plantation. It is located out of town on the road to Bekok. The clinic has its own pharmacy and an ambulance to transport patients to hospital. The medicine from this clinic is considered to be of 'better quality', however no reasoning was provided for this. The clinic is cheaper for workers who are part of the estate. The clinic is important for the foreign workers at the estate as it is very expensive these workers to visit a government clinic (500RM).For citizens it is considered cheaper than a private clinic, but more expensive than the government clinics.

2	Chinese medicine store	This store sells only Chinese herbal medicines. Most of the medicines are ordered from China and re-packaged in the shop; however, some are prepared within the shop. Many people come to see the Chinese medicine practitioner for broken bones. Some people go to the hospital for an X-ray first, but others trust him entirely.
3	Chinese medicine store	This store mostly sells Chinese medicines, however other pharmacy and general products are also sold here.
4	Private clinic (Rajoo)	The clinic is visited by Chinese, Malay and Indian patients, as well as patients from the Orang Asli community in Bekok. The clinic is free for patients who hold insurance with particular insurance companies. For patients with insurance it can be between 30-50RM per consultation.
5	Public clinic with attached maternity clinic	There is a list of emergency scenarios for which patients do not need to wait to see a doctor. The clinic closes at 5pm; however, a doctor will be on call for emergencies. The maternity clinic is a separate clinic for maternal and children's health.
6	Massage Reflexology	
7	Massage and beauty therapist	
8	Malay massage	The best healer in the area. A trained government midwife cum healer for the past 12 years, and believes in the coexistence of traditional and contemporary medicine.
9	Malay massage	
10	Mosque	
11	Klinik Desa	A community clinic with the lowest ranking nurses serving to approximately 1000 population in the Malay community.

C)

Gemereh		
	Location	Details
1	Honey farm	Sell honey from *Kelutut* bee species for high blood pressure and diabetes, and natural roots and plant materials for health issues
2	Malay Healer	A popular and well-respected Islamic teacher, with healing abilities, specialising in healing broken bones for more than 30 years. Pay is determined by patient so is an accessible service for all people because the healer will accept any offering and it is expected this offering aligns with one's capability to remunerate. Opening Hours: 9-11:30, 2:30-5:30, 9 onwards. Open late hours to accommodate working people.
3	Malay Midwife	She was previously a traditional midwife but now is a specialist in ladies massage, especially pregnancy massage and treatments. She is able to turn the baby in the womb, can predict and treat infertility and can also assist women with breast feeding and breast massage to release milk. She also performs circumcision of female infants. Although services are mainly provided from home, she will also attend the homes of patients if they arrange travel for her. Her skills and services are used in conjunction with Western techniques and they are complementary to one another. Now it is regulation to deliver a baby at the hospital, therefore her services are limited to antenatal and postnatal care. One consultation costs approximately 25-30RM.
4	Shaman	Client base is 95% Malay with the other 5% comprised of varied ethnic backgrounds. A

		treatment session normally lasts between 2-3 hours and sometimes longer if required. This allows spirits to be warned away and fended off. This is done by reciting passages of the Quran and drinking herbal water. The price is negotiable. It is expected that people pay what they can afford and can also pay with offerings. The healer doesn't want to turn anyone away but will only use his talent if he thinks it can help.
5	Klinik Desa	A community clinic used mainly for maternal health. The nurses received special training to be qualified to provide reliable maternal health programs, including visiting new mothers' home. The clinic is also available for smaller illnesses such as flu, cough, and fever. The opening times are unreliable due to the nurses conducting home visits. There was some concern about the quality of services provided, with some participants suggesting they would only go here for maternal health.
6	Klinik Kesihatan	KK Segamat is located approximately 6km from Gemereh and is open daily 8am-4pm. It was the former Segamat hospital and is therefore well equipped with some specialist equipment including pharmacy, maternity, cardio, X-ray, TB and dentistry, and has its own ambulance. The clinic is accessible by bus, motorbike or car. There are often long wait times with clients referred to the hospital if needed.

D)

Sungai Segamat		
	Location	Details
1	Chinese medicine	Ramp accessible. Perceived as an expensive retailer.
2	Haemodialysis clinic (public)	
3	Chinese medicine and acupuncture	

4	Pharmacy	
5	Hospital	Segamat hospital provides a centralised health service that can be accessed by participants in all four communities. Has significant parking spaces, ambulance availability, ramp and wheelchair access. Public prescription pharmacy attached.
6	Klinik Kesihatan Banda Putra	The clinic is accessible by ramp and stairs, and has ample parking available. They also have an ambulance available.
7	Occupational health clinic (private)	This clinic has ties with businesses to offer healthcare to for workplace related injuries and ailments.
8	Private clinic	
9	Chinese Medicine	A family run Chinese medicine store offering traditional and conventional products for sale. Traditional mixtures are prepared to the script written by sinsehs.
10	Chinese Medicine and sinseh	A Chinese medicine store offering traditional herbs as well as some conventional medical products. A sinseh was available with formal training from the Kuala Lumpur Academy of Traditional Medicine. The sinseh also offered iridology services.
11	Pharmacy	Largest pharmacy in Sungai Segamat. Ramp access is available nearby but not at the immediate entrance. On street parking is available however quite full when visited.
12	Private clinic	These clinics were located along the same business strip. On street parking was available for each, however was relatively full when visited. Ramp access was available to each, though not necessarily at the immediate entrance.
13	Private Dentist	
14	Private dentist	
15	Private clinic	
16	Private clinic	
17	Private clinic	

18	Private clinic	Muslim Indian doctor available. Wider accessibility with regard to language and religious factors.
19	Chinese medicine	
20	Reflexologist	
21	Chinese orthopaedics	Reasonably priced. Open from 10-12:30 and 2-4 daily. Will work outside of these hours for those waiting during opening hours. Well signed, off the main road, with several car spaces and accessible. Will only treat fractures and sprains, serious breaks are referred to a doctor; x-rays are required before treatment is offered for these injuries.
22	Malay massage	Husband and wife massage therapists offering gendered massage services. Male services specialise in sexual dysfunction. Massage for general health is similarly available.
23	Orthopaedics	
24	Pharmacy	A Muslim owned pharmacy, that is ramp accessible, has on street parking.
25	Klinik Kesihatan	
26	Private maternity clinic	Perceived as very expensive, primarily used by people with health insurance policies.
27	Private clinic	

Appendix 2

GIS Software

MapIt
This phone application was chosen for use in the field for its free access and user-friendly functionality. The layer function was unfortunately difficult to apply in the field with a learn as you go approach. The ability to take photos was advantageous as this allowed documentation of physical barriers to access such as ramps or stairs. Opening hours could also be photographed or quickly added via the notes function of the application. The app unfortunately lacks a photo upload function, requiring the user to take photos only on location. The app has no desktop counterpart and therefore is likely inappropriate for use by SEACO.

QGIS (app)
The QGIS mobile application is in its beta stages and was experimented with in the field. The application was difficult to use and appeared to require additional downloads or transfers from the desktop version to function. Further exploration of this application was not undertaken, however may prove useful alongside the QGIS desktop software with appropriate research and staff training.

QGIS:
This software was utilised with SEACO in mind, having been advised that the software is available to them. The software proved challenging to navigate, with its open source format leading to a number of confusing tutorials and forums in order to use the program. This presents the significant hurdle of training and appropriate allocation of staff resources. Additional plugins were required to reach the stage of mapping evident in the above report. This included the download of a plugin for the base map, which unfortunately did not include all the streets and roads of the relevant communities. Despite these challenges, once established QGIS may prove promising. With the appropriate plugins and staff training, the desktop version may be synchronised with the mobile version for enhanced usability.

Google Earth:
This service was briefly discussed as an option due to previous experiences yielding the functionality that we desired. That is the ability to use layers, drop accurate location markers with photographic and textual data, and access this across devices, both mobile and desktop. Use of this software was not further explored as a recent update appears to separate publication abilities into free and paid services. For the purposes of SEACO and confidential data collection, the paid Google Earth Pro would be required.

Appendix 3

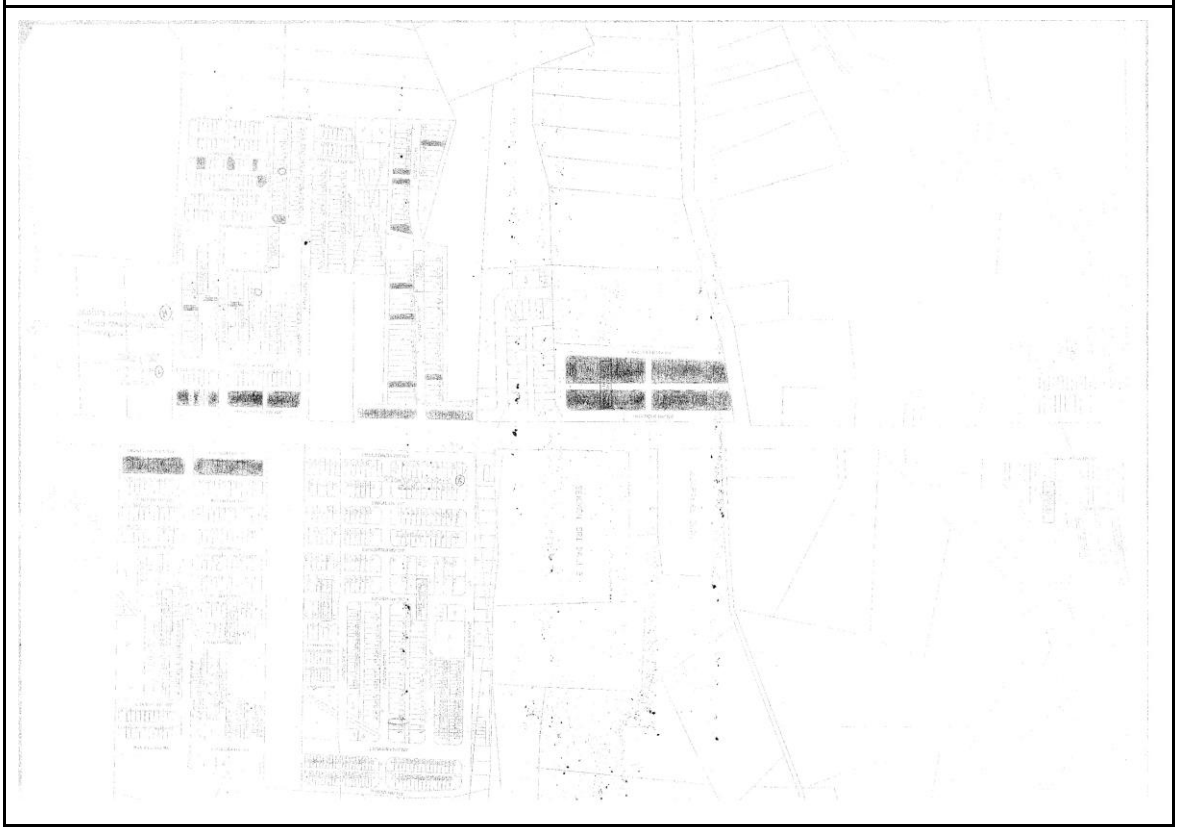
The following tables detail services mapped in the focus group discussions that were not located with GPS data.

A)

Bekok		
	Location	Details
A	Government Clinic	See appendix 1(a)(2)
B	Chinese Medicine Shop	
C	Chinese Medicine Shop	See appendix 1(a)(5)
D	Chinese Medicine Shop	See appendix 1(a)(6)
E	Klinik Raja	Only open two hours per day in the evening. Doctor travels from Chaah.
F	Acupuncture	Lady no longer lives there.
G	Temple	See appendix 1(a)(4)
H	Malay massage (Indonesian)	See appendix 1(a)(3)
I	Malay massage	
J	Malay massage	For pregnant women.

B)

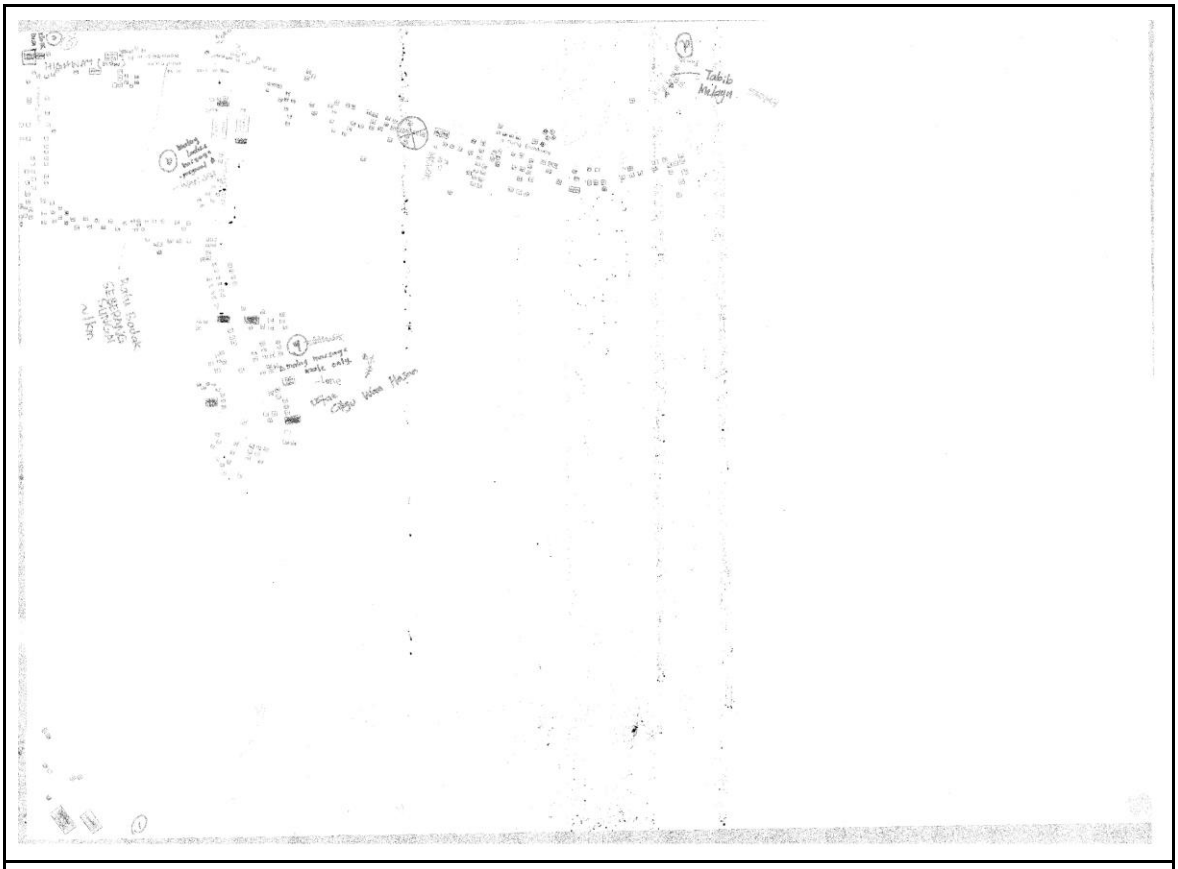
Chaah		
	Location	Details
A	Government clinic	See appendix 1(b)(5)
B	Clinic Krishna	Some participants expressed that this clinic has a poor reputation.
C	Night market	Malay medicine can be purchased here.
D	Chinese medicine/massage	
E	Morning markets	Malay medicine can be purchased here.
F	Clinic Rajoo	See appendix 1(b)(4)
G	Chinese Medicine shop	See appendix 1(b)(3)
H	Chinese Medicine shop	See appendix 1(b)(2)
I	Estate Clinic	See appendix 1(b)(1)
J	Labis Bee Biting Centre	This is a bee farm where bee stinging treatment occurs. This involves being bitten by bees and sucking the sting out. The process is believed to help with sinus problems.
K	Massage Centre	See appendix 1(b)(6)

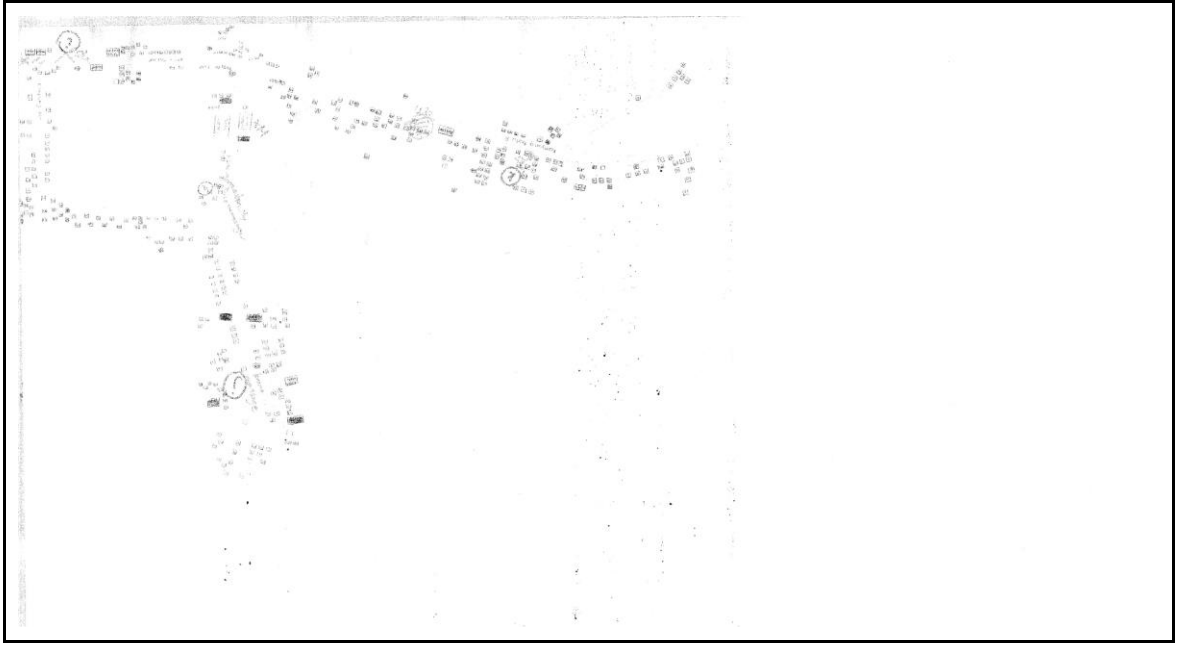


C)

Gemereh		
	Location	Details

A	Malay Ladies Massage	See Appendix 1(C)(3)
B	Malay Massage Male Only	See Appendix 1(C)(2)
C	Klinik Desa	See Appendix 1(C)(5)
D	Bomoh	This bomoh is visited for illness, stomach and headaches, sleeping problems, or issues with ghosts and spirits. The bomoh blesses the water with words from the Quran and urges people to drink the water.
E	Malay Massage	
F	Malay Ladies Massage	
G	Malay Ladies Massage	
H	Coconut Oil	Retailer of coconut oil that is believed to heal injuries. The oil can also be consumed to heal internal issues and provide relief.
I	Shaman	See Appendix 1(C)(4)
J	Malay Healer - Bone masseuse	Bone specialist, healing through massage. Requires 3-4 appointments for healing.
K	Shaman	
L	Honey Farm	See Appendix 1(C)(1)
M	Klinik Kesihatan	





D)

Sungai Segamat

As there was no map available for the health mapping activity in the community of Sungai Segamat, this resource is not available and the GPS data provides the full extent of our service mapping.