Supplementary Materials

Table S1: Supporting information 1: PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4-5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	5
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	5
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	6
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	5-6
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	6, S2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	7
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	7
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	7-8
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	---
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	8

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	---
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	---
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	Fig. 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	9
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	11
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	11-23
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	---
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	---
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	---
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	24-30
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	30
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	31
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	N/A

Note: PRISMA figure adapted from Liberati A, Altman D, Tetzlaff J, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. Journal of clinical epidemiology. 2009;62(10). Creative Commons.

Supporting information 2: Search strategies

a) PubMed search strategy

#1.	Community[tiab] OR voluntary[tiab] OR mutual[tiab] OR micro[tiab] OR rural[tiab] OR prepaid[tiab] OR "informal sector"[tiab] OR "not-for-profit"[tiab]
#2.	Health insurance[tiab] OR health fund[tiab] OR health scheme[tiab] OR health finance[tiab] OR insurance scheme[tiab]
#3.	dropout[tiab] OR drop* out[tiab] OR renew*[tiab] OR retention[tiab] OR retain*[tiab] OR sustain*[tiab]
#4.	Afghanistan[tiab] OR Albania[tiab] OR Algeria[tiab] OR Angola[tiab] OR Argentina[tiab] OR Armenia[tiab] OR Azerbaijan[tiab] OR Bangladesh[tiab] OR Belarus[tiab] OR Belize[tiab] OR Benin[tiab] OR Bhutan[tiab] OR Bolivia[tiab] OR Bosnia[tiab] OR Herzegovina[tiab] OR Hercegovina Botswana[tiab] OR Brazil[tiab] OR Brasil[tiab] OR Bulgaria[tiab] OR Burkina Faso[tiab] OR Upper Volta[tiab] OR Burundi[tiab] OR Cabo Verde[tiab] OR Cambodia[tiab] OR Cameroon[tiab] OR Central African Republic[tiab] OR Chad[tiab] OR China[tiab] OR Colombia[tiab] OR Comoros[tiab] OR Congo[tiab] OR Zaire[tiab] OR Costa Rica[tiab] OR Cote dIvoire[tiab] OR Ivory Coast[tiab] OR Cuba[tiab] OR Djibouti[tiab] OR Dominica[tiab] OR Dominican Republic[tiab] OR Ecuador[tiab] OR Egypt[tiab] OR El Salvador[tiab] OR Equatorial Guinea[tiab] OR Eritrea[tiab] OR Eswatini[tiab] OR Swaziland[tiab] OR Ethiopia[tiab] OR Fiji[tiab] OR Gabon[tiab] OR Gabonese[tiab] OR Gambia[tiab] OR Georgia[tiab] OR Ghana[tiab] OR Grenada[tiab] OR Guatemala[tiab] OR Guinea[tiab] OR Guinea-Bissau[tiab] OR Guyana[tiab] OR Haiti[tiab] OR Honduras[tiab] OR India[tiab] OR Indonesia[tiab] OR Iran[tiab] OR Iraq[tiab] OR Jamaica[tiab] OR Jordan[tiab] OR Kazakhstan[tiab] OR Kenya[tiab] OR Kiribati[tiab] OR Korea Democratic[tiab] OR Kosovo[tiab] OR Kyrgyzstan [tiab] OR Kyrgyz[tiab] OR Kirghiz[tiab] OR Kirghizia Lao PDR[tiab] OR Laos[tiab] OR Lebanon[tiab] OR Lesotho[tiab] OR Liberia[tiab] OR Libya[tiab] OR Madagascar[tiab] OR Malawi[tiab] OR Malaysia[tiab] OR Maldives[tiab] OR Mali[tiab] OR Marshall Islands[tiab] OR Mauritania[tiab] OR Mauritius[tiab] OR Mexico[tiab] OR Micronesia[tiab] OR Moldova[tiab] OR Moldovia[tiab] OR Mongolia[tiab] OR Montenegro[tiab] OR Morocco[tiab] OR Mozambique[tiab] OR Myanmar[tiab] OR Burma[tiab] OR Namibia[tiab] OR Nepal[tiab] OR Nicaragua[tiab] OR Niger[tiab] OR Nigeria[tiab] OR Macedonia[tiab] OR Pakistan[tiab] OR Papua New Guinea[tiab] OR Paraguay[tiab] OR Peru[tiab] OR Philippines[tiab] OR Romania[tiab] OR Russia[tiab] OR Rwanda[tiab] OR Samoa[tiab] OR Sao Tome[tiab] OR Senegal[tiab] OR Serbia[tiab] OR Sierra Leone[tiab] OR Solomon Islands[tiab] OR Somalia[tiab] OR South Africa[tiab] OR Sri Lanka[tiab] OR St Lucia[tiab] OR St Vincent and the Grenadines[tiab] OR Sudan[tiab] OR Suriname[tiab] OR Dutch Guiana[tiab] OR Zanzibar Syria[tiab] OR Tajikistan[tiab] OR Tanzania[tiab] OR Thailand[tiab] OR Timor-Leste[tiab] OR Togo[tiab] OR Tonga[tiab] OR Tunisia[tiab] OR Turkey[tiab] OR Turkmenistan[tiab] OR Tuvalu[tiab] OR Uganda[tiab] OR Ukraine[tiab] OR Uzbekistan[tiab] OR Vanuatu[tiab] OR Venezuela[tiab] OR Vietnam[tiab] OR West Bank[tiab] OR Gaza[tiab] OR Palestine[tiab] OR Yemen[tiab] OR Zambia[tiab] OR Zimbabwe[tiab]
#5.	"health insurance" [Mesh]
#6	#1 AND #2
#7	#5 OR #6
#8	#3 AND #4 AND #7 –233 (limited to 2005 t0 2020, English)
#9	Last date of search – 09 Feb 2020.

b) Scopus search strategy

(TITLE-ABS-KEY (*community* OR *voluntary* OR *mutual* OR *micro* OR *rural* OR *prepaid* OR *"informal sector"* OR *"not-for-profit"*)) AND (TITLE-ABS-KEY (*"Health insurance"* OR *"health fund"* OR *"health scheme"* OR *"health finance"* OR *"insurance scheme"*)) AND (TITLE-ABS-KEY (*dropout* OR *"drop out"* OR *renew** OR *retention* OR *retain** OR *sustain**)) AND (LIMIT-TO (LANGUAGE, *"English"*)) AND (LIMIT-TO (PUBYEAR, *2020*) OR LIMIT TO (PUBYEAR, *2019*) OR LIMIT-TO (PUBYEAR, *2018*) OR LIMIT-TO (PUBYEAR, *2017*) OR LIMIT-TO (PUBYEAR, *2016*) OR LIMIT-TO (PUBYEAR, *2015*) OR LIMIT–TO (PUBYEAR, *2014*) OR LIMIT-TO (PUBYEAR, *2013*) OR LIMIT–TO (PUBYEAR, *2012*) OR LIMIT-TO (PUBYEAR, *2011*) OR LIMIT-TO (PUBYEAR, *2010*) OR LIMIT-TO (PUBYEAR, *2009*) OR LIMIT-TO (PUBYEAR, *2008*) OR LIMIT-TO (PUBYEAR, *2007*) OR LIMIT-TO (PUBYEAR , *2006*) OR LIMIT TO (PUBYEAR, *2005*))

<u>Search result = 788</u>

c) Hinari search strategy

((drop out) OR (dropout) OR (renewal)) AND ((community) OR (voluntary) OR (mutual) OR (micro)) AND ("health insurance") NOT (eye)

Limited

- Language: English,
- Discipline: public health, economics, social science
- Content type: journal articles, publication

Search Result = <u>1365</u>

Table S2: Supporting information 3: List of the excluded articles with reason for exclusion

Author	Country		Reason for exclusion
Kimani et al. 2012[1]	Kenya	Cross-sectional	Investigates the determinants for participation in a public health insurance program. Participation is operationalized as enrollment to the National Hospital Insurance Fund, Not outcome of interest (not on renewal)
Sane and Thomas 2017[2]	India	Cross-sectional	study the renewal of micro-insurance policies by low-income customers which is not a community-based health insurance initiative.
Mukangendo 2018[3]	Rwanda	Cross-sectional	Investigates the factors contributing for Low Adherence to Community-Based Health Insurance. Here adherence is determined by enrollment and renewal status
Van et al. 2016[4]	Vietnam	Cross-sectional	Social health insurance policy
Waelkens et al 2017[5]	Mauritania	Qualitative	Explores the effect of the different proposed solutions on the membership growth of the scheme, not specifically on renewal.
Kapologwe et al. 2017[6]	Tanzania	cross-sectional	The study investigates the of socio-demographic and social marketing strategies on enrollment and re-enrollment, Not outcome of interest (not on renewal)
Mirach et al. 2019[7]	Ethiopia	cross-sectional	Investigates the determinants of community-based health insurance implementation. Implementation is operationalized as the decision to join the scheme, Not outcome of interest (not on renewal)

1. Kimani JK, Ettarh R, Kyobutungi C, Mberu B, Muindi K. Determinants for participation in a public health insurance program among residents of urban slums in Nairobi, Kenya: results from a crosssectional survey. *BMC Health Serv Res.* 2012;12(66).
2. Sane R, Thomas S. From participation to repurchase: Low income households and micro-insurance. *Indira Gandhi Institute of Development Research.* 2016.
3. Mukangendo M, Nzayirambaho M, Hitimana R, Yamuragiye A. Factors Contributing to Low Adherence to Community-Based Health Insurance in Rural Nyanza District, Southern Rwanda. *J Environ Public Health.* 2018;2018:2624591.
4. Van MH, Quynh AT, Thuy NNT. Health insurance drop-out among adult population: findings from a study in a Health and demographic surveillance system in Northern Vietnam 2006–2013. *Global Health, Epidemiology and Genomics.* 2016;1(e16).
5. Waelkens M-P, Coppieters Y, Laokri S, Criel B. An in-depth investigation of the causes of persistent low membership of community-based health insurance: a case study of the mutual health organisation of Dar Naim, Mauritania. *BMC Health Serv Res.* 2017;17(1):535.
6. Kapologwe NA, Kagaruki GB, Kalolo A, et al. Barriers and facilitators to enrollment and re-enrollment into the community health funds/Tiba Kwa Kadi in Tanzania: a cross-sectional inquiry on the effects of socio-demographic factors and social marketing strategies. *BMC Health Serv Res.* 2017;17(1):308.
7. Mirach TH, Demissie GD, Biks GA. Determinants of community-based health insurance implementation in west Gojjam zone, Northwest Ethiopia: a community based cross sectional study design. *BMC Health Serv Res.* 2019;19(544).

Table S3: Supporting information 4: Characteristics and summary findings of the included studies

First author, year and setting	Objective/ focus of the study	Study Design and population	Sample Size and Sampling technique	Data collection	Method of Analysis	Results
Adu 2019[42] **Ghana**	To examine the effect of waiting time at national health insurance registration office on national health insurance renewal	Cross-sectional Individuals who experience illness in the past 3 months prior to data collection – classified as renewed and dropped out	636 individuals A region selected from each of the three ecological zones, under each region two districts selected purposively (with high and low renewal).	Secondary data (collected by a PhD candidate)	binary logit model	waiting time at NHIS registration centre was statistically significant at five (5%) (P-values = 0.017). There is negative relationship between travel time to the nearest formal healthcare facility and an individual's decision to renew the policy. The effect is significant at 95% CI. Older age, married, employed in formal sector, attain formal education, use the health insurance card to access healthcare, more likely to renew. **Reasons for dropout** - Poor quality of healthcare (poor drug quality) - Long distance to the nearest health facility - Lack of drugs - paid for most of the drugs - cannot afford the renewal payment - we're not benefited from the scheme
Andoh-Adjei et al. 2018[45] Ghana	To understand whether capitation payment influenced members' decision to renew their membership with the NHIS and further explore factors that influence people's	Mixed: The outcome of interest (factors affecting renewal decision) is explored using **qualitative** approach The quantitative part compares	. 50 subjects selected for in-depth interview . 10 respondents from each of the two district offices . 15 respondents from the surrounding areas of each of the two scheme offices	database review by analyzing the NHIA central administrative data on NHIS membership Individual in-depth	trend analysis independent-samples t-test to compare the sample means of growth rates between regions	Personal, scheme and provider factors were the most important factors that influence one's decision to enroll or renew their membership capitation payment is not a key factor in membership retention decision-making. Respondents expressed both positive and negative opinions about the capitation payment policy and the implementation process. **Personal factors:**

	decision to renew their membership	only regions with regard to renewal and enrolment, without considering other variables. Population: scheme officials and community members (policyholders and non-holders)	(45 members and 5 non-members) . Selected systematically – every 5 individuals	interviews with residents	thematic analysis of qualitative data	- **Affordability** of membership renewal fee-some respondents found it affordable, not be a major factor to deter someone from renewing his/her membership - Expressed **need** for health insurance - few respondents did not feel in need of health insurance mentioned because (i) they do not fall sick often; (ii) they do not benefit by way of service utilization from the premium contribution they pay to the scheme, and (iii) that although they pay higher premium than others, they receive the same benefit as everyone else - **Peer influence:** had a positive effect on membership renewal as some respondents mentioned that they were influenced by peers to renew their membership. However negative influence on their renewal decision from health care providers who had negative perception of the NHIS due to delays in their claim's settlements - Subscriber expectations played a significant role in their renewal decision. Some respondents said their expectations were fulfilled while others experienced disappointment upon realization at the health facility that the NHIS did not cover every health condition - Lack of solidarity **Scheme factors** - The **benefit package** was a major issue that influences people's decision to enroll or renew their membership. Few people said that the benefit package is extensive enough. many respondents perceived the

						benefit package as too limited in scope - number of drugs is limited
						- Many respondents were positive about the **attitude of the scheme staff**,
						- Some positive about the **renewal process**. Some respondents who were unhappy about the renewal process mentioned long queues and waiting hours and rampant system downtime as factors that affect the attractiveness of scheme to most people.
						Provider factors
						- **Quality of care** was a key dimension of provider factors that influence renewal decision. Many respondents were satisfied with the quality of care they received from health care providers - doctors and nurses take enough time for you, friendliness of the hospital staff towards insured clients, quick response. Delays in settling providers' claims affect the service they received - "they will not treat you well, will not accept your card and will not even look at you". government facilities are overwhelmed with large number of patients and this affects the quality of service
Atinga et al. 2015[39] urban slums in the Accra Metropolitan Assembly, **Ghana**	To identify the factors/reasons influencing dropout from Ghana's health insurance scheme among populations living in slum communities	Cross-sectional Those dropped out of the scheme six months before the study were the study populations.	600 respondents (only dropouts) Three level multi-stage sampling(clusters), each level selected randomly	Structured, Self-administered questionnaire using the local language.	Four reasons for dropout were identified and taken as dependent variables. logistic regression	Reasons for dropout: unaffordability of the premium, rare illness, limited benefits of the scheme and poor service quality. But these reasons did not affect the different categories of the population equally. E.g., When compared to males, females were significantly less likely to report rare illness as a reason for dropping out of the scheme. Low-income earners were more likely to drop out on the basis of premium cost.

Atnafu et al. 2018[44] North-West **Ethiopia**	To examine the factors associated with willingness to renew CBHI membership	Mixed method (a cross-sectional household survey linked to health facility survey) and qualitative (FGD & In-depth interview) methods	810 CBHI member households 4 focus group discussions and 5 in-depth interviews 7 health centers A multi-stage sampling	structured questionnaire for household survey FGDs, in-depth interviews	a mixed effect two-level logistic regression model used	Female-headed households have nearly 2 times higher odds of willingness to renew membership than male-headed households Household heads with a poor self-rated health status have almost 2.6 times higher odds of willingness to renew membership than good self-rated health status Respondents with medium and good perceived quality of health services had almost 4.3- and 3.3-times higher odds of willingness to renew membership than the poor perceived quality of health services. Trust in public health facility, Trust in Community-Based Health Insurance and convenience of premium collection were significantly associated with renewal. For a one unit increase in the trust score of the public healthcare facilities, the odds of willingness to renew membership increases almost by 5 points Qualitative: HC professionals discriminate towards the uninsured, misbehavior of health professionals, no enough drugs, no good services; Reasons for not willing to renew membership - limited and poor health service availability - poor and unsatisfactory benefit package - registration fee and premiums are not affordable - illness and injury do not occur frequently
Basaza et al. 2008[50]	To investigate people's current perceptions of CHI	Qualitative methods	30 FGDs, 15 from each scheme was conducted	Focus group discussions	The framework method was	**Results concerning dropout** **Lack of information and poor understanding**

				and in-depth interviews	used in the data analysis	
Ishaka and SHU schemes **Uganda**	in both schemes and their reasons for joining and not joining schemes	Population: members and non-members of CHI schemes	A total of 30 initial focus group discussions and 18 in-depth interviews were held for both schemes. Stratified purposive sampling of discussants and interviewees was used After classifying each village into five sub-populations, discussants were selected randomly using the scheme register. Interviewees were randomly selected from a household list of women, widowers, orphans, the disabled and elderly in each sub-pop.			Many people have dropped out as a result of pooling. The discussants said: it hurts when one does not fall sick and utilize his contributions; for there are no benefits. Those who have not fallen sick and not utilized the funds feel that there are no 'benefits' in paying membership when not sick or without a patient. Some scheme members in SHU appreciate the value of pooling: "we need to help one another for we can never know when we will fall sick " **Ishaka scheme -** a majority of discussants expressed concerns about pooling: "some people drop out when it gets to three times of payment without falling sick "I am not happy with it because if I do not fall sick, I should not pay for someone else." A section of respondents: It has no harm because at one time you may also fall sick or your relative may get treated with that money **Quality of care**: behavior of nurses, cleanliness of hospital, discriminating the members (favoring the non-members), long queues, and absence of some prescribed medicines causes of dropout. **Benefit packages**: some joined without the knowledge that some diseases are not treated, and so they dropped out when they realized it
Bhat and Jain 2007[26]	Examine Factors Affecting the Renewal of Health Insurance Policy	**Cross-sectional** Member households.	145 respondents (74 renew & 71 dropouts)	Household survey using interviewer administered	Binary logistic regression (PROC LOGISTIC in SAS)	The effect of education is positive and significant Age dummy is significant for all ages except higher age groups (51 -62 yrs, >62 yrs)

				structured questionnaire		If consumer perceives insurance plan provide good coverage of illness and services, satisfaction level from insurer is high and his experience from insurer was good, then there is higher chance of renewal of insurance policy
Anand district of Gujarat, **India**		Members of the "Krupa" health insurance scheme with its main target is lower and middle-income population				
Boateng & A. Vitor 2013[35] Volta region of **Ghana**	to assess individual's attitude towards health insurance policy and the factors that influence respondents' decision to renew their health insurance policy	**Cross-sectional** All adult above 18 years of age within the selected districts	A sample of 300 respondents Three level multi-stage sampling, each level selected randomly – districts-communities-households	Data was collected at the household level using structured questionnaire	Logistic regression model	Response rate is 94% Female respondents were significantly 2.3 times more likely to renew their insurance as compared to the male (OR=2.3; p<0.05). Belief on the benefit of the scheme, convenience of insurance card collection, and low premium payment significantly increase the likelihood of renewal. Perceived poor health status - increased the likelihood of renewing NHIS insurance
Boateng et al. 2017[36] Kumasi metropolis, **Ghana**	to analyze the factors associated with enrolment in and renewal and utilization of the NHIS	Cross-sectional migrant female head porters in the Kumasi metropolis	A sample of 416 individuals 309 individuals (renew and drop) Simple random sampling to get respondents	structured questionnaire used to collect data at the market place	binary logit regression model	Increased age, single respondents, number of years of education, small family size, shorter waiting time at NHIS office, significantly, low income, report health problem increase the likelihood of membership renewal Benefit Factors: supplied with drugs, undergoing diagnosis and receiving surgery services free of charge under the scheme significantly increased the tendency for renewal
Dartanto et al. 2019[32] **Indonesia**	exploring the important factors that affect the compliance behavior of informal sector workers (scheme members) in	Cross-sectional Scheme member households	A sample of 1210 households (members) Multistage random sampling method.	Household surveys using interviewer administered questionnaire	Logit regression	Family size is negatively associated with sustainable payments, while age positively affects sustainable payments Households that depend on the agricultural sector tend to pay more sustainably than other sectors.

	regularly paying their insurance premium.					Positive correlation between education and sustainable payments – not statistically significant
						The level of household income is found to be insignificant (with positive correlation); however, income stability matters. Households with more income stability tend to have an 11-percentage point higher probability of paying the premium regularly than households who have unstable income.
						Saving has positive relation to the dependent variable, but not significant.
						When households experience financial hardship, they prioritize expenditures essential for daily life over paying insurance premiums.
						Positive correlation between past inpatient cost expenditure and payment sustainability.
						Membership in other insurance and social protection schemes (not limited to health insurance), reduces the probability of households paying regularly significantly.
						Knowledge of the insurance benefit package provided by the NHIS seems to matter for payment sustainability.
						Households that never utilize insurance benefit services tend to pay the premium unsustainably, with the probability of paying premiums 5.4 percentage points lower than households that use the healthcare service. The availability of professional health workers significantly impacts payment behavior in a positive way.

						Negative correlation occurs between the distance to a hospital and payment behavior – not significant.
Dong et al. 2009[35] Nouna Health District, **Burkina Faso**	to identify the reasons why enrolled people decide not to renew their membership in following years	Cross-sectional Households are the study units	756 households from the rural area and 553 households from the town of Nouna were randomly selected by using a two-stage cluster sampling procedure.	Household survey and Information from CBI agency databank	Binary logistic regression used	The following factors all had a positive effect on drop-out, meaning that they increased the probability that a household did not renew its membership in CBI: female household head, higher household head's age, lower household head's education, larger household size, living in rural area, lower number of illness episodes in the past three months, fewer children or elderly in a household, poor perceived quality of care, less health care seeking in the month prior to the survey. A higher household expenditure and a shorter distance to the contracted health facility also increased the dropout. Only education, religion, place of residence, and the percentage of children in a household were found to be statistically significant. The household heads in the drop-out group had a significantly lower education than in the non-drop-out group The households in the drop-out group also had a significantly higher household size, were more likely to live in the rural area, more likely not to be Muslim and less likely to have under 5 children.
Duku et al. 2016[38] Greater Accra and Western regions in **Ghana**	Investigates the presence of adverse selection by assessing the effect of healthcare utilization and	Cross-sectional (retrospective) Members of the NHIS	2008(N = 939559) 2009(N=1045072) 2010(N=1384588) 2011(N=1753000) 2012(N=2079141)	Secondary data from the NHIS enrolment and utilization data covering from 2008 to 2013	Pearson Chi-square test and Logistic regressions used	Found evidence suggestive of the presence of adverse selection in the NHIS. The likelihood of renewal was significantly higher for those who utilize healthcare than those who did not. Increases in the frequency of healthcare usage were accompanied by corresponding statistically significant increases in the

	frequency of use on NHIS renewal		2013(N=2207459)			likelihood of NHIS renewal. E.g. A higher proportion of those that made 4 health facility visits renewed their membership than those that made 2 health facility visits.

Females, children under 1 year, the 70+ year exemption group, Social Security and National Insurance Trust (SSNIT) contributors and SSNIT pensioners, and pregnant women are more likely to renew. These are the exempted groups under the NHIS policy

People living in the Greater Accra region were also found to be more likely to renew NHIS membership.

All these findings were statistically significant at the 95 % confidence level. |
| Fenny et al. 2016[46]

Ghana

five selected districts

across the three ecological zones of Ghana | To understand what the major reasons why individuals did not enroll in the NHIS | Qualitative approach

Population: insured, previously insured and non-insured community members (FGD) and key stakeholders at the district, regional and national levels (KII) | 40 FGDs, the target groups were stratified by sex.

46 KIIs

Purposive sampling strategy used which sought to identify groups of individuals having knowledge and experience with the NHIS | KII and FGDs | inductive and content analytic approach | **Barriers for renewal**
Provider payment method (change from fee for service to capitation method) - under capitation they have to choose only one hospital and then cannot switch.
Lack of awareness of the risk sharing principle (solidarity) – lack of understanding about health insurance and the principles
It is painful when you don't use the insurance card (I dint get sickness) but have to renew it every year".
Delays in receiving insurance cards.
Quality of healthcare: differential treatment given to NHIS members – quick service for non-members; lack of drugs in the accredited health facilities |
| Herberholz & Fakihammed 2016[41] | Examines what causes informal sector families not to renew their | Cross-sectional

Informal sector households that | 588 households

196 dropouts

196 new enrollees | Household survey using structured interviewer | Logistic regressions | More **educated** household heads, households belonging to the **highest income** quantile, households that are located **more than 5 km** away from the nearest health facility, |

Kassala state; Eastern **Sudan**	voluntary National Health Insurance Fund (NHIF) membership	dropped out or remained insured	196 renewed multi-stage sampling design	administered questionnaire		households **satisfied** with the services provided at the nearest health facility, households that have at least one family member who suffers from a **chronic illness**, households with higher **illness ratios** and household heads that have a **good understanding** of the voluntary NHIF scheme are less likely to drop out. All these findings were statistically significant at the 95 % confidence level, except satisfaction with health services (p value=0.06)
Iqbal et al. 2017[31] Chakaria sub-district, **Bangladesh**	explores the determinants of membership renewal in a voluntary micro health insurance scheme	Cross-sectional Member households to the scheme, - dropped out and renewed	A sample size of 3189 households - 1138 outpatient package - 1375 inpatient package - 676 special outpatient packages	Data came from the real-time management information system (MIS) of the scheme and Health and Demographic Surveillance System of Chakaria, that collects data through quarterly household visits	cross-tabular and logistic regression analyses	Frequency of health service utilization, amount of benefit received, proximity of residence to the Village health posts (VHP), asset quintile, and years of schooling of household revealed significant associations with renewal of membership in the case of both inpatient and outpatient packages. Members who **visit health** facilities more frequently, who **received more benefit**, those whose residences were **within 3 km** of a VHP, those belonging to the **highest income quintile and** household heads having more years of **schooling**, were more likely to renew membership in both packages.
Kotoh et al. 2018[47] **Ghana**	to examine why enrolment and retention in the NHIS remains low.	Mixed method (descriptive quantitative and qualitative) **Renewal factors are examined qualitatively**	40 key informants purposely selected from two case study communities in the Central Region - 11 community members, 7 health providers and 2 DHIS' staff	Observation, in-depth interviews and informal conversations were used to collect	Qualitative data was analyzed using thematic content analysis	**Enablers of renewal** Benefits: access to healthcare and financial relief from catastrophic payments (I don't have to spend all my money paying hospital bills.) Positive Health Provider-Patent Interaction: they renew membership because of some

		Population: Community members, health providers and district health insurance schemes staff, staff of the Ministry of Health, Ghana Health Service (GHS) and National Health Insurance Authority	Several informal conversations in the other five communities in the region. Four in-depth interviews with higher officials Purposive sampling with maximum variation	qualitative data		health providers' positive behavior towards them. **Barriers to Retention** 'No money to pay premium'(the core poor) Extra payments for healthcare services and drugs. People who perceive themselves as healthy dropout of the scheme. Payment of Illegal fees for healthcare providers. Extra payment for drugs inside and outside health facilities - "Some of us sell drugs that are covered by the NHIS to insured patients, 'pocket the money' and charge the DHISs." Delay in getting their cards at NHIS office Give preference to uninsured patients Shortage of drugs on national health insurance drugs list which results members to pay for drugs
Macha et al. 2014[49] **Tanzania**	examine membership determinants and demand and supply side factors explaining enrolment and drop out of the Community Health Fund (CHF)	Mixed methods **Renewal factors are examined qualitatively** **Population**: CHF members, non-scheme members and members of health facility governing committees	12 focus group discussions 7 to 10 CHF members' cards were selected at random at the dispensaries and members invited to FGD. Village leaders helped to randomly locate non-members from the same area	focus group discussions	thematic analysis was done to analyze qualitative data.	**Low quality of health care:** shortage of drugs, lack of diagnostic equipment, long waiting hours. When drugs are out of stock, CHF members have to buy drugs at private pharmacies. The limited benefit package combined with the fact that cover is only provided at a single facility affect renewal Exclusion of referral service in the benefit package associated transport costs.
Mebratie et al. 2015[43] **Ethiopia**	To examine dropout in the case of Ethiopia's pilot CBHI scheme	Mixed method Cross-sectional, and qualitative	1203 households in 2012 (enrollment) and **1186 interviewed households in 2013 (renewal)**	Two rounds of household surveys, a health facility survey and	Logistic regression	Households with higher consumption levels are less likely to dropout but the effects are not statistically significant. Household heads with primary education and even those with informal education are less

		Member households who renew and dropped out of the scheme were the study population	Multistage sampling – villages and households selected randomly? 15 key informant interviews 8 FGDs	qualitative information from key informant interviews and focus group discussions.		likely to leave the scheme – significant at 95% CL. Participation in the PSNP, which is a program catering to food-insecure households is associated with a lower dropout. Experiencing a short-term illness significantly increases the chances of dropping out. Experiencing a prolonged illness significantly associated with a lower dropout rate. Having used the CBHI card is associated with a lower dropout rate – the usefulness of the scheme encourages renewal. Those holding an official position are less likely to drop out. Village officials, heads of traditional organizations, religions leaders, and other people of influence were provided detailed information on the design features of the pilot CBHI and were engaged in awareness raising activities. **Reason for not renewing** - Illness and/or injury does not occur frequently in our household - The registration fee and premiums are not affordable - Want to wait in order to confirm the benefits of the scheme from others - Lack of awareness about the detail of how the CBHI works - The quality of health care services is low - The benefit package does not meet our needs - CBHI management staff is not trustworthy Other

| Mladovsky 2014[40]

Senegal | Explores whether never having actively participated in CBHI is a determinant of dropout.

Hypothesized that active participation in CBHI and its potential intermediary benefits, such as trust, information and solidarity are negatively correlated with drop-out. | **Cross-sectional**

Member households (households that were up-to-date with premium payments and ex-members) | Planned sample size was 487 scheme members (213 active and 274 ex-members)

Total sample size is 382 households, with a response rate of 78%. The sample contains 227 members and 155 ex-members

stratified random sampling | Household survey

Interviewer administered structured questionnaire | logistic regression. | The more active the mode of participation in the CBHI scheme, the stronger the statistically significant positive correlation with renewal.

Training is the most highly correlated, followed by voting, participating in a general assembly, awareness raising/information dissemination, and informal discussions/ spontaneously helping - statistically significant

All the odds ratios for the following variables measuring perceptions or knowledge of scheme management were greater than two and significant, with members being more likely than ex-members to: be informed of mechanisms of controlling abuse and/or fraud by scheme staff, members and/or health providers; think they could influence scheme operation; be satisfied with the trustworthiness of scheme management and/or president; know the scheme President, Secretary, Manager and/or another staff member and rate the operation of the scheme as excellent or satisfactory

Members may have higher levels of social capital than ex-members, as households nearly eight times more likely to belong to six or more community associations other than CBHI than ex-members

Household heads with higher age category are more likely to drop out of the scheme, with significant effect

Health status and health service variables

Member households were twice as likely to have had an **illness**, **accident** or **injury**, and nearly twice as likely to have a **disability** than |

						ex-member households, pointing to adverse selection,
						They were more than twice as likely to be situated **closer to** a health service provider, three times more likely to report that health care access is **an advantage** of membership and had a much higher probability of reporting that the **quality of health service** providers was satisfactory. All these variables have significant odds ratios, with quality of care being the strongest in the study.
						Perception of poor quality of health services is identified as the most important determinant of drop-out.
N.Boateng et al. 2019[37] Ashiedu Keteke district, **Ghana**	examines policy design factors associated with enrolment and dropout of the scheme in an urban poor district using routine secondary data.	**cross-sectional** Members of the NHIS	Sample size - 39532	Used secondary data-enrolment data of members of the Ashiedu Keteke district NHIS office	multivariate logistic regression analyses	being an indigent (OR = 2.27, 95% CI: 1.68–3.07) was significantly associated with dropping out of the NHIS. Likewise, an interaction between individual and policy related characteristics shows that being **a male informal sector employee** (OR = 2.47, 95% CI: 2.17–2.79); **male aged** (OR = 2.10, 95% CI:1.47–2.64); or **male SSNIT contributor** (OR = 1.97, 95% CI: 1.47–2.64) was significantly associated with dropping out of the scheme. However, **being a male** (OR = 0.61, 95% CI: 0.56–0.66); **informal sector employee** (OR = 0.77, 95% CI: 0.71–0.83); **SSNIT contributor** (OR = 0.55, 95% CI: 0.44–0.69) **or aged 70 years or older** (OR = 0.33, 95% CI: 0.27–0.39) was significantly associated with retention of membership in the scheme.
Nshakira-Rukundoet al. 2019[34]	To understand what influences households to enroll and renew	cross-sectional survey	A sample of 464 households Multistage Simple	Household survey using structured questionnaire	logistic and zero-inflated negative binomial	Parental age plays an important role in renewing decisions. Households with older mothers are more likely to renew CBHI by an additional year (IRR: 1.045, CI: 1.021-1.069)

Kabale and Rukungiri districts in south-western **Uganda**.	their CBHI membership	Households having children under 5 years of age – both members and non-members	random sampling was applied		(ZINB) regressions to understand the determinants of enrolment and renewing membership in CBHI, respectively	however; renewing is less likely when as mothers get older as shown by the quadratic term of mother's age. Enrolled catholic households were more likely to renew CBHI Richer households were more likely to renew membership. Having a neighbor in CBHI, belonging in an additional voluntary group *(a measure of social capital and connectivity),* households who knew the correct premiums levied, with more access to information, households in villages with more burial groups, households residing in a village with a school significantly associated with renewal. Households having a woman employed in casual labour were less likely to renew. Distance has a negative effect on renewal. an extra kilometer from health facilities reduces the likelihood of renewal significantly. Feeling the social influence of leaders and relatives was associated with increasing the likelihood of renewal
Ozawa & Walker 2009[24] Northwest Cambodia	To understand the role and influence of villagers' trust for the health insurer on enrollment in a CBHI scheme	Mixed methods approach **Note**: the association between insurer trust and renewal is explored quantitatively The study population included	Sample size = 560/ data taken from 535 Cluster random sampling, and Stratified sampling employed	Household surveys	Factor analysis for development of trust scale **Multinomial** logistic regression - associations between the insurer trust scale and four	With multivariable analysis (after controlling for demographic factors, health care utilization, and socio-economic status), significant associations were found between insurer trust levels and insurance status. People who dropped out, newly enrolled and renewed the insurance scheme had significantly higher insurer trust scores than those who had never had insurance. Villagers who renewed the insurance scheme were found to have statistically significantly

		community members above 18 years of age who were currently, formerly or never enrolled			insurance status groups: renew, new, drop out, and never	higher trust levels compared to those who were new to the scheme and those who dropped out of the scheme
Panda et al. 2016[29] Uttar Pradesh and Bihar **India**	to identify the factors that determine scheme renewal	Longitudinal data Outcome of interest measured **Cross-sectionally** CBHI members of three schemes in India	The sample used to carry out the econometric analysis: (1) 1665 individuals who enrolled in 2011 and renewed or dropped out in 2012, (2) 1339 individuals who enrolled in 2012 and renewed or dropped out in 2013 and (3) 674 individuals who joined the scheme in 2011, renewed in 2012 and renewed or dropped out in 2013.	household surveys combined with information on enrolment, renewal, premium payments and claims from Micro Insurance Academy's Management Information System (MIS) -longitudinal data	Logit regression: separate analysis for the three schemes and a combine full sample analysis	An increase in the time taken to access outpatient care reduces the renewal of insurance (the study site with maximum average travel time and the full sample) In two of the three sites, individuals in the highest tertile of the consumption distribution are more likely to renew their subscriptions. Education of the household head is also positively linked to renewal and indicates that for the sample as a whole, **secondary education** is associated with a 15%-point increase in renewal. The direct effect of scheme use is captured by the coefficients on the incidence of having received benefits through the scheme. Individuals who have received benefits through the scheme more likely to renew their contracts and statistically significant Both insurance knowledge and a greater understanding of the insurance scheme are associated with a higher probability of renewing contracts. A greater understanding of the CBHI scheme are significantly associated with a higher probability of renewing contracts. For all three illnesses related indicators; long-term, short-term and hospitalization, the coefficients for the full sample indicate that

						such events lead to a reduction in the probability of renewing contracts, except short-term illnesses, and long-term illness events - there is a positive link in one study site for each. the use of inpatient care is statistically significant and indicates that having been hospitalized in the year that an individual was insured leads to a reduction in the probability of renewal.
Raza et al 2016[28] Uttar Pradesh and Bihar **India**	investigates the determinants of enrolling and dropping-out of the scheme.	Longitudinal data Outcome of interest measured **Cross-sectionally** Respondents: members of the scheme or the head of the household	Three consecutive surveys use the following sample size: 3685, 3318 & 3307 in 2010, 2012 & 2013	household level data	Logistic regression	Households with members who are chronically ill are much less likely to drop out suggesting problems of adverse selection Households belonging to scheduled-castes or tribes are also less likely to drop out from the scheme. Household size is negatively associated with the likelihood of dropping out
Savitha 2017[25] Karnataka **India**	Evaluate the factors that influence renewal decisions in a Micro health insurance program	Cross-sectional Households which are members of a micro-health insurance	A sample size of 500 households (340 renewed and 160 non-renewed) A five-stage cluster sampling design with random selection procedures	household level data	Logistic regression analysis	Households with chronic illness among family members were 1.892 times more likely to renew compared to those without chronic illness. The odds of renewal compared to not renewing were high for households living in semi-urban areas compared to those in rural areas. Households in Q3 income quintile were 1.93 times, and those in Q5 were 1.927 times more likely to renew compared to those in Q1 income quintile – indicates affordability of premium to be a deterrent to renewal. All the above have statistically significant associations.

						Households in '**High risk of having chronic illness and low income'** are 1.935 times more likely to renew the policy compared with households with 'Low risk and low income' as well as 'Low risk and high income'
						Inconvenient timing of collection of premium and long distance to hospitals as inhibiting factors for renewal.
Tara et al 2007[27] Gujarat, **India**	examines factors that may explain dropout from a CBI scheme targeting poorer self-employed women in Gujarat	**cross-sectional** Annual members of a CBI scheme - The Self-Employed Women's Association (SEWA) NB: SEWA Insurance provides life, accident, **hospitalization** and asset insurance as an integrated package.	A total of 220 individuals with equal numbers of dropouts and renewed members (n=110 for each) obtained using simple random sampling from lists of dropouts and renewed members.	Household survey	Chi-squared test for proportions and the two-sample t-test for means were used in comparing dropouts and renewed members	Dropouts were more likely to report that they had belonged to the Insurance only during the previous year (had a shorter duration of association with the scheme) compared to those stayed for 2 and 3 years as a member. At the level of the entire household, the mean percentage of adults who had completed secondary school (i.e., 10th standard) was significantly higher in renewed member households than in dropout households Dropout households were more likely to have insured only the woman, not other household members Dropout households were significantly less likely to have submitted any insurance claim to Insurance scheme during the previous year **Reasons for dropout** - No one came to collect premium - No money at the time of renewal - Dissatisfied with the Insurance rules - Have not suffered loss in previous years - Do not understand scheme - Dissatisfied as previous claim rejected - Unable to submit claim, despite loss
T. Tremblay et al. 2012[48]	To document (1) the process that led to the selection	Qualitative approach	Snowball to select participants for interview	Interviews using a semi-structured	Content analysis	People's dissatisfaction with insurance packages – the exclusion of some health risks,

Benin	and implementation of initiatives to increase membership, (2) the challenges and facilitating factors associated with the implementation of these initiatives, and (3) how these initiatives influenced membership levels in comparison with MHO actors' expectations.	(multiple case-study design	23 Interviews (10 promoter representatives, 2 coordinators, 1 technical assistant, 8 elected members, 1 healthcare worker, and 1 health center manager Non-structured interviews with 1 medical doctor, 8 elected members, and 6 healthcare workers.	interview guide		valued health services from the benefit package. Low healthcare quality (negative behavior of health professionals - rude to them and sometimes withholding medication. Low awareness about the benefit of the insurance plans - door-to-door activities increase renewal. Lack of motivation of elected MHO members – community mobilizers for enrollment and renewal.

Table S4: Supporting information 5: Quality appraisal of the included studies

Quality appraisal of included studies – Quantitative studies (cross-sectional) on policy renewal

	Adu 2019[42]	Atinga 2015[39]	Bhat 2007[26]	Boateng 2013[35]	Boateng 2017[36]	Dartanto 2019[32]	Dong 2009[35]	Duku 2016[38]	Herberholz 2016[41]
1. Was the sample representative of the target population?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Were study participants recruited in an appropriate way?	No	Yes	Unclear	Yes	Unclear	Yes	No	Yes	Yes
3. Was the sample size adequate?	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
4. Were the study subjects and the setting described in detail?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5. Was the data analysis conducted with sufficient coverage of the identified sample?	Unclear	Yes	No	Yes	Yes	Yes	No	Yes	Yes
6. Were objective, standard criteria used for the measurement of the condition?	Unclear	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes
7. Was the condition measured reliably?	Unclear	No	Unclear	Unclear	Unclear	Unclear	Unclear	Yes	Yes
8. Was there appropriate statistical analysis?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9. Are all important confounding factors/subgroups/differences identified and accounted for?	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10. Were subpopulations identified using objective criteria?	Unclear	Yes	Yes	Yes	Yes	Yes	Yes	yes	Yes
Percentage score (criteria met)	30%	80%	60%	90%	80%	90%	60%	90%	100%
Overall quality	Low	High	Moderate	High	High	High	Moderate	High	High

Answers: Yes, No, Unclear or Not/Applicable

Table S4: Supporting information 5 … continued

	Iqbal 2017[31]	Mladovsky 2014[40]	N.Boateng 2019[37]	N.Rukundo 2019[34]	Ozawa 2009[24]	Panda 2016[29]	Raza 2016[28]	Savitha 2017[25]	Tara 2007[27]
1. Was the sample representative of the target population?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Were study participants recruited in an appropriate way?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Was the sample size adequate?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
4. Were the study subjects and the setting described in detail?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5. Was the data analysis conducted with sufficient coverage of the identified sample?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
6. Were objective, standard criteria used for the measurement of the condition?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7. Was the condition measured reliably?	Yes	Unclear	Yes	Unclear	Unclear	Yes	Unclear	Unclear	Yes
8. Was there appropriate statistical analysis?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
9. Are all important confounding factors/ subgroups/ differences identified and accounted for?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
10. Were subpopulations identified using objective criteria?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Percentage score (criteria met)	100%	90%	100%	90%	90%	100%	80%	90%	60%
Overall quality	High	High	High	High	High	High	High	High	Moderate

Answers: Yes, No, Unclear or Not/Applicable

Notes: Source: Reproduced from Munn Z, Moola S, Riitano D, Lisy K. The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. Int J Health Policy Manag. 2014;3(3):123-8. https://dx.doi.org/10.15171/ijhpm.2014.71

Table S5: Quality appraisal of included studies – mixed-methods studies on policy renewal

Quantitative (Munn et al. 2014) Answers: Yes, No, Unclear or Not/Applicable	Atnafu 2018[44]	Mebratie 2015[43]	Qualitative part (MMAT 2018 Criteria) Answers: 1) Yes 2) No 3) Can't tell	Atnafu 2018[44]	Mebratie 2015[43]
1. Was the sample representative of the target population?	Yes	Yes	1. Is the qualitative approach appropriate to answer the research question?	Yes	Yes
2. Were study participants recruited in an appropriate way?	Unclear	Unclear	2. Are the qualitative data collection methods adequate to address the research question?	Yes	Yes
3. Was the sample size adequate?	Yes	Yes	3. Are the findings adequately derived from the data?	Yes	Yes
4. Were the study subjects and the setting described in detail?	Yes	Yes	4. Is the interpretation of results sufficiently substantiated by data?	No	Yes
5. Was the data analysis conducted with sufficient coverage of the identified sample?	Yes	Yes	5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Can't tell	Yes
6. Were objective, standard criteria used for the measurement of the condition?	Yes	Yes	**Mixed methods (MMAT 2018 Criteria)** Answers: 1) Yes 2) No 3) Can't tell		
7. Was the condition measured reliably?	Yes	Unclear	1. Is there an adequate rationale for using a mixed methods design to address the research question?	Yes	Yes
8. Was there appropriate statistical analysis?	Yes	Yes	2. Are the different components of the study effectively integrated to answer the research question?	No	Yes
9. Are all important confounding factors/ subgroups/ differences identified and accounted for?	Yes	Yes	3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	No	Yes
10. Were subpopulations identified using objective criteria?	Yes	Unclear	4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	Can't tell	Can't tell
			5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	No	No
Percentage score (criteria met)	-	-		65%	75%
Overall quality	-	-		Moderate	High
Notes: Source: Reproduced from Munn Z, Moola S, Riitano D, Lisy K. The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. Int J Health Policy Manag. 2014;3(3):123-8. https://dx.doi.org/10.15171/ijhpm.2014.71			**Notes**: Source: reproduced from Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.		

Table S6: Quality appraisal of included studies – qualitative studies on policy renewal

Quality criteria	Andoh-Adjei 2018[45]	Basaza 2008[50]	Fenny 2016[46]	Kotoh 2018[47]	Macha 2014[49]	Tremblay 2012[48]
1. Is the qualitative approach appropriate to answer the research question?	Yes	Yes	Yes	Yes	Yes	Yes
2. Are the qualitative data collection methods adequate to address the research question?	Yes	Yes	Yes	Yes	Yes	Yes
3. Are the findings adequately derived from the data?	Yes	Yes	Yes	Yes	Yes	Yes
4. Is the interpretation of results sufficiently substantiated by data?	Yes	Yes	Yes	Yes	Can't tell	Yes
5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Yes	Yes	Yes	Yes	Yes	Yes
Percentage score (criteria met)	100%	100%	100%	100%	90%	100%
Overall quality	High	High	High	High	High	High

Answers: 1) Yes   2) No   3) Can't tell

Notes: Source: reproduced from Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, Gagnon M-P, Griffiths F, Nicolau B, O'Cathain A, Rousseau M-C, Vedel I. Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552), Canadian Intellectual Property Office, Industry Canada.