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STUDY PROTOCOL

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1
2 **Evaluating the implementation related**
3 **challenges of *Shasthyo Suroksha***
4 ***Karmasuchi* (health protection scheme) of**
5 **the government of Bangladesh: a study**
6 **protocol**

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8 Andrew J. Mirelman³, Clas Rehnberg², Jahangir A. M. Khan^{2,4} and Mahbub Elahi Chowdhury¹

13 **Abstract**

14 **Background:** Rapidly increasing healthcare costs and the growing burden of non-communicable diseases have
15 increased the out-of-pocket (OOP) spending (63.3% of total health expenditure) in Bangladesh. This increasing OOP
16 spending for healthcare has catastrophic economic impact on households. To reduce this burden, the Health
17 Economics Unit (HEU) of the Ministry of Health and Family Welfare has developed the *Shasthyo Suroksha Karmasuchi*
18 (SSK) health protection scheme for the below-poverty line (BPL) population. The key actors in the scheme are HEU,
19 contracted scheme operator and hospital. Under this scheme, each enrolled household is provided 50,000 BDT (620
20 USD) coverage per year for healthcare services against a government financed premium of 1000 BDT (12 USD). This
21 initiative faces some challenges e.g., delays in scheme activities, registering the targeted population, low utilization of
22 services, lack of motivation of the providers, and management related difficulties. It is also important to estimate the
23 financial requirement for nationwide scale-up of this project. We aim to identify these implementation-related
24 challenges and provide feedback to the project personnel.

25 **Methods:** This is a concurrent process documentation using mixed-method approaches. It will be conducted in the
26 rural Kalihati Upazila where the SSK is being implemented. To validate the BPL population selection process, we will
27 estimate the positive predictive value. A community survey will be conducted to assess the knowledge of the card
28 holders about SSK services. From the SSK information management system, numbers of different services utilized by
29 the card holders will be retrieved. Key-informant interviews with personnel from three key actors will be conducted to
30 understand the barriers in the implementation of the project as per plan and gather their suggestions. To estimate the
31 project costs, all inputs to be used will be identified, quantified and valued. The nationwide scale-up cost of the project
32 will be estimated by applying economic modeling.

(Continued on next page)

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(Continued from previous page)

Discussion: SSK is the first ever government initiated health protection scheme in Bangladesh. The study findings will enable decision makers to gain a better understanding of the key challenges in implementation of such scheme and provide feedback towards the successful implementation of the program.

Keywords: *Shasthyo Surokhsha Karmasuchi* (SSK), Health protection scheme, Implementation challenges, Implementation research, Process documentation, Research protocol, Bangladesh

Background

Rapidly increasing healthcare cost and the growing burden of non-communicable diseases have increased the out-of-pocket (OOP) spending (63.3% of total health expenditure) in Bangladesh [1]. This increasing OOP spending for healthcare has catastrophic economic impact on households, especially on the poor [2–4]. The National Health Policy of 2011 acknowledged that health is a human right and to achieve universal health coverage, it is necessary to ensure health services for the poor at an affordable cost [5]. For achieving this, the high burden of OOP payment must be decreased and financial protection for healthcare should be ensured. The Government of Bangladesh adopted the Health Care Financing Strategy 2012–2032 with a view to bringing all the citizens under the financial protection for healthcare by 2032 [6]. To achieve this goal, the Health Economics Unit (HEU), a wing of the Ministry of Health and Family Welfare (MoHFW) of the Government of Bangladesh has developed *Shasthyo Surokhsha Karmasuchi* (SSK), a health protection scheme [6]. Although the SSK has a comprehensive plan to cover all population, initially it is implementing targeting the below poverty line (BPL) population only.

Shasthyo Surokhsha Karmasuchi (SSK)

The HEU of the MoHFW has developed the social health protection scheme (SSK) with the support from German Development Cooperation through KfW (German Development Bank) and GFA Consulting Group. Adopting the mechanism of health insurance model, the scheme was developed over a three-year period of extensive consultations with the experts. Currently, the scheme is being implemented at rural Kalihati sub-district. The key actors in the scheme are HEU, contracted scheme operator, and Kalihati Upazila Health Complex (UpHC) [7].

The SSK cell

The SSK Cell (a group of personnel) has been formed by the HEU to work as the key management body for implementing the SSK project. The SSK Cell performs like an insurance providing organization. It formulates policy decisions and responsible for implementing the

scheme activities through engaging hospitals and a Scheme Operator (SO). The SSK Cell performs administrative tasks, namely, project co-ordination, finance management, target population management, benefit package management, grievance process, and monitoring and evaluation.

Scheme operator (SO)

The SSK Cell contracted an insurance agency for providing SSK service management support to them at the UpHC and Tangail District Hospital (DH). Currently, the Green Delta insurance company has been contracted as SO. The SO is responsible for visiting the BPL households (enlisted based on selection criterion) to provide health card. They also facilitate the UpHC in claim reimbursement process, assist card holders in receiving healthcare services from UpHC and DH, and monitor the scheme activities.

SSK benefit package

Under the scheme, SSK members receive only inpatient healthcare at the UpHC and structured referral care from the DH. An electronic health card is provided to each enrolled household ensuring 50,000 BDT per year equivalent healthcare service coverage for 70 different disease groups (Table 1). The premium for this coverage is 1000 BDT per year that is financed by the government. Membership in SSK has many advantages compared to the regular patients in the public healthcare facility: free consultation for outpatient care, free inpatient care, free referral care from DH, access to a grievance authority for complaining on the quality of the services, and free access to essential drugs at UpHC and DH for inpatient care.

Claim management process

The hospitals (UpHC and DH) are reimbursed by SSK Cell within 30 days for providing free healthcare services to the SSK members based on verifiable patient records (claims). Reimbursement follows a case and diagnosis based payment systems using a simplified Diagnosis Related Groups (DRG) on 70 diseases. The hospitals submit the claim documents to the SO. The SO checks and sends these claim documents to the SSK Cell. The SSK Cell verifies the claims and invoice to the SO. Finally, the SO makes payment to the hospitals. With the extra funds the

Table 1 SSK benefit package

	Premium	Health services			Coverage	
t1.3	1000 BDT per household	Inpatient care: Inpatient care for 70 different diseases	Hospital bed and food: Provide hospital bed and food free of cost	Structured referral: Transportation cost for referral	Medicine and diagnostics: Free drugs and diagnostic	50,000 BDT per household per year

123 UpHC have fiscal space to expand the service list and im-
 124 prove the quality, so they can meet the quality criteria.

125 **Information management system**

126 The SSK Cell maintains a data warehouse with the help
 127 of Management Information System (MIS) of Director-
 128 ate General of Health Services (DGHS). The SSK data
 129 server is hosted at DGHS-MIS center with free of charge
 130 and they provide general and maintenance support
 131 services. The hospital is equipped with a computerized
 132 hospital management system initially focusing on the
 133 member management and inpatient management. The
 134 system is based on customized software that includes
 135 patient registration, diagnosis, treatment, referral,
 136 discharge, and automated reporting which are useful for
 137 claim management and fraud control. The SO managed
 138 SSK booths at the hospitals maintain the membership
 139 related information. These booths are responsible for
 140 checking the membership status of SSK card holders be-
 141 fore seeking any treatment from the hospital.

142 Through informal discussion and anecdotal evidences,
 143 many implementation-related challenges of the SSK pro-
 144 ject have been identified. These include delays in carrying
 145 out the assigned activities, failure to register target popula-
 146 tion as per selection criteria, low level of utilization of
 147 services by the SSK card holders, lack of motivation of the
 148 providers in dealing with the additional workload,
 149 management and administrative difficulties in smoothly
 150 operating all the activities for the SSK project. Therefore,
 151 there is a need to systematically document these
 152 implementation-related challenges of the SSK project and
 153 provide timely feedback to the project personnel for ne-
 154 cessary refinement in the implementation.

155 **General objectives and research questions**

156 The overall objective of this study is to identify the im-
 157 plementation related challenges of the SSK project and
 158 provide timely feedback to the project personnel for ne-
 159 cessary refinement. The specific objectives of this imple-
 160 mentation research are:

- 161 1. To review and validate the selection process of the
- 162 BPL population for the SSK
- 163 2. To assess knowledge of SSK BPL card holders about
- 164 the benefit package of the SSK
- 165 3. To document the barriers in utilization of the SSK
- 166 services by the card holders

4. To record the service utilization pattern at the 167
health facilities by the SSK card holders 168
5. To document the implementation related challenges 169
of the SSK project and gather possible suggestions 170
for addressing those challenges 171
6. To estimate the costs of scaling-up the SSK project 172
nationwide 173

Methods 174

Study setting 175

The study will be conducted in the Kalihati Upazila 176
under Tangail district where the SSK is currently being 177
implemented. A total of 89,351 households (including 178
35,740 BPL households) of the Upazila will be the study 179
population. The Kalihati Upazila Health Complex, the 180
first contact point of the SSK beneficiaries, and Tangail 181
District Hospital, the referral facility, will also be within 182
the jurisdiction of this study. 183

Design & Methods 184

This study will be a concurrent process documentation 185
using mixed-method approach that includes both quan- 186
titative and qualitative assessments. The integrated ap- 187
proaches will provide the flexibility to fill in gaps in the 188
available information, strengthen the validity of the 189
assessment and provide different perspectives on con- 190
textual and multi-dimensional phenomena. The study 191
will have 6 different phases. The different research activ- 192
ities planned to be implemented at different phases are 193
shown in Table 2. 194

T2

**Review and validate the selection process of BPL 195
population for SSK** 196

To understand the pitfall in existing BPL population 197
identification we will review the method applied and 198
tools used in this process. In addition, the problems in 199
applying the selection criteria will be recorded through 200
process documentation and key-informant interviews of 201
the program personnel. Using appropriate quantitative 202
approach targeted beneficiaries' perspectives will also be 203
collected to record the challenges in selection of the 204
BPL population. 205

Validation study 206

To validate the selection process of BPL population, we 207
will estimate positive predictive value. Both SSK member 208
and non-member households will be interviewed. For 209
member household, a sampling frame will be collected 210

t2.1 **Table 2** Study activities

t2.2	Activities	P-I* (1-3 m**)	P-II (4-6 m)	P-III (7-9 m)	P-IV (10-12 m)	P-V (13-15 m)	P-VI (16-18 m)	Data sources
t2.3	Study protocol development	√						Not applicable
t2.4	and research review and ethical							
t2.5	review committee approval							
t2.6	Review and validate the selection		√					Survey of member and non-
t2.7	process of BPL population							member households
t2.8	To assess knowledge of BPL			√				Separate survey of member
t2.9	card holders and document the							household (community survey)
t2.10	barriers in utilization of the							and focus group discussions
t2.11	SSK services							(FGDs)
t2.12	Review of service statistics at the			√	√	√		Facility record review
t2.13	health facilities to assess service							
t2.14	utilization pattern among the							
t2.15	card holders							
t2.16	Process documentation to assess			√	√	√		Document review and synthesis
t2.17	progress in project implementation							of secondary data
t2.18	and identify related barriers							
t2.19	Key-informant interviews of the		√		√			Key-informant interviews
t2.20	providers, managers, scheme							
t2.21	operators to document							
t2.22	implementation challenges and							
t2.23	solutions							
t2.24	Cost-analysis				√			Interviews with the SSK project
t2.25	Periodic feedback and follow up			√	√	√		and the hospital management
t2.26	of the progress							personnel
t2.27	Reporting and dissemination						√	Findings from the research activities
t2.28	*P=Phase, ^b m = month							

211 from SSK project and from that frame the required
 212 number of samples will be selected randomly. For
 213 non-member, closest adjacent household of SSK member
 214 will be selected. If the closest adjacent household is
 215 found a member household of SSK project the next clos-
 216 est will be selected for interview. The heads of the
 217 selected households will be interviewed with a struc-
 218 tured questionnaire on household characteristics, BPL
 219 selection criteria of the SSK and detailed consumption
 220 expenditure information. To identify the poor house-
 221 hold, the average monthly consumption expenditure of
 222 each household will be compared with the poverty line
 223 defined by Bangladesh Bureau of Statistics (BBS) for
 224 Dhaka Division using cost-of-basic needs (CBN) ap-
 225 proach [8]. This poverty line will be used as a gold
 226 standard for poverty identification in this study.

227 Community survey

228 The community survey will be conducted to assess the
 229 knowledge of the card holders about SSK services as
 230 well as to document the barriers in utilization of such
 231 services. From the sampling frame of the SSK card
 232 holders, the respondents will be randomly selected. In
 233 this survey, the card holders will be asked whether they
 234 know about the benefit package of the SSK. They will

also be asked whether they face any difficulties while re- 235
 ceiving SSK services such as negligence of provider, un- 236
 availability of listed services, shortage of prescribed 237
 medicines, long waiting time, and unofficial tips. An in- 238
 strument for assessing knowledge level is developed to 239
 gather this information which will be piloted before 240
 finalization. Focus Group Discussions (FGD) will be ap- 241
 plied for understanding the experience, perception of 242
 beneficiaries about the SSK services and barrier to utilize 243
 these services. Beneficiaries who utilized healthcare in 244
 last 3 months will be included in FGDs. FGDs will be 245
 held in an independent place away from the health facil- 246
 ity. In each FGD, 8–10 participants from same level will 247
 participate. Initially, a number of 5 FGDs is planned. If 248
 the research team feels that additional knowledge can be 249
 extracted from more FGDs, then additional sessions will 250
 be organized. 251

Facility record review for service utilization 252

From computer based record managed by the SSK pro- 253
 ject, numbers of different services utilized by the card 254
 holders will be retrieved. Facility record review will be 255
 done in 3 phases. In each phase, last 3 months records 256
 will be gathered. Trend analysis will be done. Number of 257
 patients treated by disease, types of diagnostic services 258

259 offered, type of drugs provided, and number of patient
260 referred by disease along with compliance will be
261 estimated.

262 Key-informant interviews (KIIs)

263 The rationale of choosing key-informant interviews
264 (KIIs) for this study is to understand the systems that
265 affect barriers in implementation of SSK project activ-
266 ities as per plan and gather their suggestions. This will
267 include delay in project implementation, problem in se-
268 lection process of BPL population, availability of neces-
269 sary equipment, drug, logistics for providing services,
270 scarcity of manpower, workload related issues, problem
271 in referrals, problem related to SSK fund management,
272 and barriers in claim management.

273 KIIs will be conducted face-to-face by experienced
274 qualitative researchers. The interviewer would schedule
275 a convenient time and place for the interview. The inter-
276 view will be digitally recorded after having permission
277 from the key-informant personnel. Another researcher
278 will also take simultaneous verbatim notes. The duration
279 of a KII will be at least 45 minutes to one-hour.

280 Process documentation

281 The process documentation will be undertaken for
282 reviewing the progress in SSK project implementation
283 activities, identify barriers for possible delays in imple-
284 mentation, scheme operator's oversight and how well
285 the outputs of the SSK project are aligned to achieve
286 outcomes and impacts. The areas of process documenta-
287 tion include services under benefit package, enrollment
288 of the beneficiaries, service provision steps, claim man-
289 agement and payment process to the provider. Multiple
290 methods will be used for capturing information in
291 process documentation (e.g. document review and syn-
292 thesis of secondary data). Through process documenta-
293 tion timely feedback will be provided to the SSK project
294 personnel.

295 Cost analysis

296 The additional cost of scaling-up the SSK project at na-
297 tional level will be estimated from program perspective.
298 Cost will be estimated for all parties involved with the
299 SSK project implementation namely, service delivery
300 cost for health facilities, overall monitoring and supervi-
301 sion cost for HEU and scheme management cost for in-
302 surance company. To estimate cost all inputs to be used
303 in SSK project will be identified, quantified and valued.
304 The project and the hospital management personnel will
305 be interviewed for collecting these cost related informa-
306 tion. Semi-structured questionnaires will be used for this
307 interview. The inputs will be separated by capital (e.g.
308 Buildings) and recurrent costs (e.g. staff salary). The cap-
309 ital costs will be annualized using their lifetime and 3%

discount rate [9, 10]. Total project cost will be estimated 310
by summing up the capital and recurrent costs. The 311
nationwide scale-up cost of the SSK project will be esti- 312
mated by applying economic modeling and projections 313
technique. The economic modeling of cost will be 314
performed considering the existing utilization of services 315
and unit cost of producing such services. For 316
nation-wide implementation, a hypothetical scenario for 317
cost input (e.g. number of healthcare facilities, additional 318
manpower required) will be prepared in consultation 319
with the experts (e.g. HEU, DGHS personnel and insur- 320
ance providers). The unit cost information collected 321
from the health facility will be used to estimate cost for 322
this scenario using OneHealth Tool software. A sensitiv- 323
ity analysis of nationwide scale-up cost will be per- 324
formed considering 5 to 10% increase in utilization of 325
services to realize the situation during full implementa- 326
tion of the project. 327

Sample size 328

Quantitative 329

We use the following formula for estimating sample size 330
to validate the selection process of BPL population and 331
assess knowledge level of SSK card holders, 332

Where, 333

n = required sample size, 334

S = anticipated proportion (positive predictive value/
BPL card holders are knowledgeable about the benefit 335
package). 336

α = size of the critical region ($1 - \alpha$ is the confidence 338
level), 339

$Z_{(1-\alpha)/2}$ = standard normal deviate corresponding to the 340
specified size of the critical region (α), 341

L = absolute precision desired on either side (half-width 342
of the confidence interval) of positive predictive value. 343

We used 95% confidence interval, 5% error level, and 344
10% non-response for estimating the sample size. There- 345
fore, for validating the selection process of BPL popula- 346
tion, an estimated 270 SSK card holders and an equal 347
number of non-card holders will be required to inter- 348
view assuming positive predictive value at 80%. In total, 349
540 households (card holders and non card holders) will 350
be interviewed. Similarly, to assess knowledge level of 351
SSK card holders about benefit package, a minimum of 352
423 BPL card holders will be required to interview 353
assuming 50% of them are knowledgeable. 354

Qualitative 355

The key-informants will be selected from different level of 356
the project implementation, e.g. the SSK Cell members, 357
scheme operators and service providers. Semi-structured 358
guidelines will be developed based on informants' charac- 359
teristics. In phase II and IV of the study, 7 to 9 360

361 key-informants will be interviewed. However, actual
362 number will be determined based on data saturation and
363 availability of informants.

364 **Data analysis**

365 **Quantitative**

366 Both descriptive and advance analysis will be performed
367 using quantitative data. The positive predictive value will
368 be estimated for validation of BPL population. A 2 × 2
369 table will be constructed for the poor and non-poor
370 households and the SSK members and non-members
371 households by comparing the poverty line with the
372 household consumption expenditure data. From the
373 table, the probability that a 'poor' among those with the
374 BPL population are enrolled in the SSK project (positive
375 predictive value) will be estimated [11].

376 Factor analysis will be used for ranking the knowledge
377 level of the card holders. Earlier studies have used this
378 technique for assessment of knowledge level [12, 13].
379 Principle component analysis will be performed to gen-
380 erate the factor score. We will estimate one main factor
381 (namely, knowledge level for SSK benefit package) with
382 items loading on this factor [14]. Using the factor score
383 we will rank household from low to high level of know-
384 ledge. Multivariate regression model will be used to as-
385 sess the association of demographic and socioeconomic
386 characteristics of the respondent with their level of
387 knowledge. In this analysis, level of knowledge will be
388 the dependent variable and age, sex, education level and
389 monthly income will be the explanatory variables.

390 To understand the service utilization pattern trend
391 analysis will be performed using project record. Average
392 number of outpatient and inpatient services utilized per
393 1000 card holders will be estimated for three time points
394 (Table 2). This utilization information will be presented
395 by patient characteristics available in the project record
396 (e.g. age, sex) and cause of illness. This analysis will pro-
397 vide evolving nature of healthcare utilization among the
398 SSK card holders.

399 Economic modeling and projections will be performed
400 for nationwide cost estimation. Cost per service delivery
401 and cost per beneficiary of SSK project will be estimated
402 considering cost of all parties involved in the project.
403 OneHealth Tool software will be used for nationwide
404 implementation cost estimation.

405 **Qualitative**

406 After completion of a KII, a verbatim transcription and
407 translation will be performed immediately using the au-
408 diotapes and interview notes. A systematic framework
409 approach will be employed for systematic generation of
410 themes and codes and analyzing the qualitative data.
411 The Framework Method support thematic analysis in a
412 systematic manner for organization and mapping the

qualitative interview data which is appropriate for inter- 413
disciplinary and collaborative scheme projects [15]. The 414
research team will become familiar with the whole 415
interview by repeatedly listening the audio recording or 416
by reading the transcript for interpretation. After 417
familiarization with the interview, the researcher will 418
apply 'code' that illustrates the interpreted information 419
from the interview for systematic comparison with other 420
components of the dataset. By using the categories and 421
codes, the analytical framework will be applied by 422
indexing subsequent transcripts. For the analysis 423
process a framework matrix will be generated using 424
spreadsheet and data will be summarized and charting 425
into the matrix by category. Charting ensures data 426
summarization and careful explanation of participant's 427
own opinion and expressions prior to interpretation 428
by the research team. The interpreted findings under 429
each main theme or category will be presented for 430
the identification of key implementation barriers and 431
possible solution to overcome such barriers. Triangu- 432
lation of information will be done for findings from 433
different sources. 434

435 **Ethical assurance for protection of human rights**

436 This study will involve human subjects hence ethical ap- 436
proval have been obtained from the Research Review 437
Committee and Ethical Review Committee of icddr,b. All 438
respondents of the study will be interviewed after giving 439
written informed consent. Their participation will be 440
voluntary. Efforts will be made to ensure that they are 441
properly informed about the study objectives and thor- 442
oughly understand what their participation in the study 443
involves. All collected information will be kept confiden- 444
tial and will be used only for research purposes. 445

446 **Discussion**

447 Many people in Bangladesh fall into poverty due to 447
OOP payments for healthcare [2–4]. The introduction of 448
the SSK project in the study Upazila of Bangladesh aims 449
to increase essential services utilization and stimulate 450
better quality of the services through reducing financial 451
burden. This article contains a comprehensive study 452
protocol with the objectives to validate the selection of 453
enrolled BPL population, their knowledge about the 454
scheme, service utilization pattern among them, barriers 455
in service utilization, implementation-related challenges, 456
and cost for scaling up the scheme. This study will pro- 457
vide a comprehensive understanding about the existing 458
challenges of the SSK project to its successful implemen- 459
tation. Through this study, ongoing timely feedback will 460
be provided to the SSK implementer and policymakers 461
in order to have refinement in the implementation 462
strategy. 463

464 The rigorous design of the study protocol to capture
 465 implementation related challenges of the project is one
 466 of the important strengths. This study will collect
 467 real-time qualitative and quantitative data over a period
 468 of 1 year. The prolonged involvement of the study team
 469 will facilitate them to be close to the real implementa-
 470 tion scenarios and identify the challenges towards the
 471 implementation. The research team will closely collabor-
 472 ate with the key decision makers from the SSK Cell and
 473 relevant stakeholders to ensure that the research ques-
 474 tions are relevant to the implementation of the project
 475 and the evidence generated through the study will be
 476 useful in their decision making. This collaboration will
 477 not influence the independence of research.

478 We will start the study activities and share the plan
 479 through organizing workshop with the presence of key
 480 personnel from the HEU, MoHFW and other relevant
 481 organizations. We will share the study findings through
 482 reports, policy briefs, and meetings with the local stake-
 483 holders. We will also share the learning in the inter-
 484 national conferences and publish research papers in the
 485 international journals.

486 One important concern is that, the present study in-
 487 cludes the perceptions and strategies of the key stake-
 488 holders, implementers and decision makers in the
 489 objectives. This may induce biases in their responses.
 490 We will be cautious of such possibilities while conduct-
 491 ing their interview. We will verify the study findings
 492 through comparing information from multiple sources
 493 and using different methods of data collection. Another
 494 limitation of this study is that the process documenta-
 495 tion will be conducted only in the scheme implementa-
 496 tion site, which may limit the generalizability of the
 497 findings to other regions.

498 The evidence generated from the study will be useful
 499 to program managers for planning nation-wide scale-up
 500 accordingly or to replicate such health insurance scheme
 501 in similar low-income country settings. The findings will
 502 be useful to address financing challenges of healthcare
 503 in Bangladesh and for implementation of the healthcare
 504 financing strategy developed by the MoHFW of
 505 Bangladesh [6]. Methodological challenges of implemen-
 506 tation research on health financing schemes would be
 507 useful for research communities.

508 Ultimately, the scientific evidence generated will be used
 509 to ensure healthcare for vulnerable groups and subsequently
 510 useful for achieving universal health coverage in low- and
 511 middle-income countries, which is a global agenda.

512 **Additional file**

513 **Additional file 1:** Survey questionnaires and interview guides. The
 514 supplementary file consists two appendixes. APPENDIX-A consists
 515 quantitative questionnaire for validation study and community survey.

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APPENDIX-B qualitative interview guides for Key-informant Interviews SSK
 service providers, insurance scheme management and Health Economics
 Unit personnel (PDF 195 kb).

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Abbreviations

BBS: Bangladesh Bureau of Statistics; BPL: Below-Poverty-Line; CBN: Cost-of-
 basic needs; DGHS: Director General of Health Services; DH: District Hospital;
 DRG: Diagnosis Related Groups; FGD: Focus Group Discussions; GFA: Gospel
 for Asia; HCFS: Health Care Financing Strategy; HEU: Health Economics Unit;
 icddr,b: International Centre for Diarrhoeal Disease Research; KIs: Key-Informant
 Interviews; MIS: Management Information System; MoHFW: Ministry of Health
 and Family Welfare; OOP: Out-of-pocket; SO: Scheme Operator; SSK: Shasthyo
 Suroksha Karmasuchi; UpHC: Upazila Health Complex

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Authors' contributions

SA, ZH, MWA and MEC contributed to conceptualize the research idea, study
 design, literature search, writing, revising, and finalizing the protocol with the
 support from FD, MS, ZI, AJM, CR and JAMK. All authors read, revised, and
 approved the final version of the study protocol.

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Ethics approval and consent to participate

This study was approved by the Research Review Committee and Ethical
 Review Committee of the icddr,b (Protocol# PR-17047). All respondents of
 the study will be interviewed after giving written informed consent. Their
 participation will be voluntary. Efforts will be made to ensure that they are
 properly informed about the study objectives and thoroughly understand
 what their participation in the study involves. All collected information will
 be kept confidential and will be used only for research purposes.

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Consent for publication

Not applicable.

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Competing interests

The authors declare that they have no competing interest.

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