

Appendix table 1. Copy of the governance survey

Principle	Questions	Responses (please circle one response for each question)	Maximum score
Strategic vision	Is there a specific mention of trauma in the national health plan or policy? Or are there specific national health policies around trauma	Don't know No (0) Yes (1)	1
	Is there a national trauma strategy?	Don't know No (0) Yes (1)	1
	What percentage of the country's health budget goes to trauma care?	Don't know <10% ((0) 10-20% (1) >20% (2)	2
	Is public sector trauma care provided free of charge	Don't know No-not at all (0) Partly (1) Yes-fully (2)	2
	Is there a national insurance scheme that covers trauma care	Don't know No-not at all (0) Partly (1) Yes-fully (2)	2
	Is there a department within the National Ministry of Health dedicated for trauma?	Don't know No department for trauma at all (0) Department for trauma included in another department (1) Stand-alone department for trauma (2)	2
	If the National health plan mentions trauma, or if there are national health policies for trauma care, are there specific objectives	Don't know No (0)	1

	relating to trauma and timelines to achieve them?	Yes (1)	
	If you have answered yes to question 7, have any of those specific trauma objectives been implemented?	Don't know No (0) Yes (1)	1
Scores			12
Participation and consensus orientation	Are stakeholders (e.g: NGOs, private companies) involved in health policy formulation for trauma?	Don't know No organisation is involved (0) 1-3 organisations are involved (1) > 3 organisations are involved (2)	2
	What is the level of stakeholder engagement/community participation at the national and provincial level in trauma policy and related interventions?	Don't know No involvement at all (0) These groups are involved (1)	1
Scores			3
Rule of law	Are there guidelines for accreditation of trauma care providers (doctors, nurses, etc) and are these enforced?	Don't know No guidelines present (0) Guidelines present are not enforced (1) Guidelines present and enforced (2)	2
	Are there laws to enforce a duty of care by hospitals to treat uninsured trauma patients?	Don't know No laws (0) Laws present are not enforced (1) Laws present and enforced (2)	2
	Are there laws to protect against trauma? Example Seat belt laws?	Don't know No laws (0) Laws present are not enforced (1)	2

		Laws present and enforced (2)	
Scores			6
Transparency	Is information readily available on financial commitments or allocated budget to trauma care in the public sector at either national or provincial level?	Don't know Don't know No (0) Yes (1)	1
	Are managers (District Directors of Health, Medical Superintendents of hospitals) evaluated on their health facility or facilities reaching specific targets for trauma care? And if so, are the results of these evaluations available and accessible?	Don't know No trauma related criteria for assessment (0) Trauma related criteria for assessment is used, but not available (1) Trauma related criteria for assessment is used and available (2)	2
Scores			3
Responsiveness of institutions	Is there mandatory reporting of health facility trauma data and is this used to define the burden of injury at a national level?	Don't know No (1) Some data (1) Adequate/complete data (2)	2
	Are these data used to inform national or provincial policy?	Don't know No (0) Yes (1)	1
	Are data on clinical post-injury outcomes captured routinely by health facilities?	Don't know No (0) Yes partially captured (1) Yes adequately captured (2)	2

	Are data on post -injury care patient satisfaction routinely captured?	Don't know No (0) Yes partially captured (1) Yes adequately captured (2)	2
	Are these trauma data used in planning services?	Don't know No (0) Yes (1)	1
	What is the level of responsiveness of the health system to non-medical needs of injured people (social needs, mental health needs etc) ?	Don't know Health services cater to or assess only medical needs (1) Health services consider other outcomes relevant to patients, for example their opinions on services provided (2)	2
Scores			10
Equity	Are there national level financial schemes to ensure the poor who are injured do not have to pay out of pocket direct medical costs of trauma care?	Don't know No scheme (0) Partial scheme (1) All people are covered (2)	2
	Are there health policies in place to address inequality in access to care for trauma?	Don't know No policies in place (0) Policies in place for general health equity (1) Policies in place specifically for trauma (2)	2
	Are there data which show whether access is equitable or not? And do those data show that access is equitable?	Don't know No data available (0) Data available (1) Data available and show that access is equitable (2)	2

	Is the allocation of trauma care staff to districts and hospitals appropriate and based on needs? Do districts in urban centres get more staff than districts in remote areas?	Don't know Less than 2:1 (1) More than 2:1 (0)	1
	Is there a mechanism to equitably distribute the budget for health or trauma care?	Don't know No (0) Yes (1)	1
Scores			8
Effectiveness and efficiency	Is there a national trauma registry (information management for trauma care)? Is it used? In both private and public?	Don't know No (0) Yes (1)	1
	Are there national or provincial guidelines for in -service training of staff on trauma care?	Don't know No (0) Yes (1)	1
	Is there a pre-hospital referral system (e.g: ambulance service)?	Don't know No (0) Yes (1)	1
	If pre-hospital referral systems are available, what has been the experience of patients regarding pre hospital referrals?	Don't know Poor (0) Fair (1) Good (2)	2
	Are local transport operators (e.g: taxis) involved in transporting people to hospital?	Don't know No (0) Yes (1)	1
Scores			6
Accountability	Are there mechanisms to report failing trauma services to policy makers or regulatory authorities	Don't know No (0) Yes (1)	1
	Are there any mechanisms of correcting under performance of trauma services?	Don't know No mechanisms (0)	2

		Mechanisms of reporting but no onwards mechanisms to improve quality (1)	
		Mechanisms of reporting and mechanisms to improve quality (2)	
Scores			3
Intelligence/Information	Do staff providing trauma services understand what data needs to be captured and do they have the right data capturing tools to enable them do this?	Don't know No understanding and no tools (0) Understanding but no or limited tools (1) Understanding and useful tools (2)	2
Scores			2
Ethics	Is there any policy available for regulating trauma related research?	Don't know No (0) Yes (1)	1
	Are there any standard operating procedures in place to ensure quality and ethical trauma care for injured people?	Don't know No (0) Yes (1)	1
	Are there mechanisms in place in institutes for enforcing high ethical standards in the treatment of trauma patients	Don't know No (0) Yes (1)	1
Scores			3
Overall maximum score			56

Appendix 2 Investigator score for each question and percentage score for each principle and overall for Rwanda, Ghana and South Africa respectively

Principle	Questions	Maximum score for question	Rwanda score	Ghana score	South Africa score
Strategic vision	Is there specific mention of trauma in the national health plan or policy? Or are there specific national health policies around trauma care?	1	1	1	1
	Is there a national trauma strategy?	1	1	0	0
	What percentage of the country's public health budget goes to trauma care?	2	0	0	2
	Is public sector trauma care provided free of charge?	2	1	1	1
	Is there a national insurance scheme that covers trauma care?	2	2	1	1
	Is there a department within the National Ministry of Health dedicated for trauma?	2	1	1	1
	If the National health plan mentions trauma, or if there are national health policies for trauma care, are there specific objectives relating to trauma and timelines to achieve them?	1	1	0	0
	If you have answered yes to question 7, have any of those specific trauma objectives been implemented?	1	1	0	0
	Score for Principle (% of total possible)		12	8 (67%)	4 (33%)
Participation and consensus	Are stakeholders (e.g. NGOs, private companies) involved in	2	2	2	2

	What is the level of stakeholder engagement/community participation at the national and	1	1	1	1
Score for Principle (% of total possible)		3	3 (100%)	3 (100%)	3 (100%)
Rule of law	Are there guidelines for accreditation of trauma care	2	2	2	1
	Are there laws to enforce a duty of care by hospitals to treat uninsured	2	0	2	2
	Are there laws to protect against trauma? Example Seat belt laws?	2	2	1	2
Score for Principle (% of total possible)		6	4 (67%)	5 (83%)	5 (83%)
Transparency	Is information readily available on financial commitments or allocated budget to trauma care in the public sector at either national or provincial level?	1	1	0	0
	Are managers (District Directors of Health, Medical Superintendents of hospitals) evaluated on their health facility or facilities reaching specific targets for trauma care? And if so, are the results of these evaluations available and accessible?	2	2	0	0
Score for Principle (% of total possible)		3	3 (100%)	0 (0%)	0 (0%)
Responsiveness of institutions	Is there mandatory reporting of health facility trauma data and is	2	2	1	1
	Are these data used to inform national or provincial policy?	1	1	1	1
	Are data on clinical post-injury outcomes captured routinely by	2	2	1	0
	Are data on post-injury care patient satisfaction routinely captured?	2	0	0	0
	Are these trauma data used in planning services?	1	1	1	1
	What is the level of responsiveness of the health system to non-medical needs of injured people (social needs, mental health needs etc)?	2	2	1	2

Score for Principle (% of total possible)		10	8 (80%)	5 (50%)	5 (50%)
Equity	Are there national level financial schemes to ensure the poor who are injured do not have to pay out	2	2	1	2
	Are there health policies in place to address inequality in access to care for trauma?	2	1	1	1
	Are there data which show whether access is equitable or not? And do those data show that access is equitable?	2	0	0	0
	Is the allocation of trauma care staff to districts and hospitals appropriate and based on needs? Do districts in urban centres get more staff than districts in remote areas?	1	0	0	0
	Is there a mechanism to equitably distribute the budget for health or trauma care?	1	0	0	0
Score for Principle (% of total possible)		8	3 (38%)	2 (25%)	3 (38%)
Effectiveness and efficacy	Is there a national trauma registry (information management for trauma care)? Is it used? In both private and public?	1	1	0	0
	Are there national or provincial guidelines for in-service training of staff on trauma care?	1	1	1	1
	Is there a pre-hospital referral system (e.g: ambulance service)?	1	1	1	1
	If pre-hospital referral systems are available, what has been the experience of patients regarding pre-hospital referrals?	2	1	1	2
	Are local transport operators (e.g: taxis) involved in transporting	1	1	1	0
Score for Principle (% of total possible)		6	5 (83%)	4 (67%)	4 (67%)

Accountability	Are there mechanisms to report failing trauma services to policy	1	0	1	1
	Are there any mechanisms of correcting under performance of	2	1	0	2
Score for Principle (% of total possible)		3	1 (33.3%)	1 (33.3%)	3 (100%)
Intelligence/information	Do staff providing trauma services understand what data needs to be captured and do they have the right	3	1	1	1
Score for Principle (% of total possible)		3	1 (33%)	1 (33%)	1 (33%)
Ethics	Is there any policy available for regulating trauma related research?	1	1	1	1
	Are there any standard operating procedures in place to ensure quality and ethical trauma care for injured people?	1	1	0	1
	Are there mechanisms in place in institutes for enforcing high ethical standards in the treatment of trauma patients?	1	1	1	1
Score for Principle (% of total possible)		3	3 (100%)	2 (67%)	3 (100%)
Overall Total (% maximum overall score)		56	39 (70%)	27 (48%)	33 (59%)

Appendix table 3 Summary results by principle for each country individually including average score, investigator score, maximum score possible for each question and achieved percentage score (average score and investigator score).

Principle	Maximum scores	Rwanda				Ghana				South Africa			
		Respondent scores (n, average)	Investigator scores (n)	% achieved (Respondent scores)	% achieved (Investigator scores)	Respondent scores (n, average)	Investigator scores (n)	% achieved (Respondent scores)	% achieved (Investigator scores)	Respondent scores (n, average)	Investigator scores (n)	% achieved (Respondent scores)	% achieved (Investigator scores)
Strategic vision	12	8.05	8	67.1%	66.7%	2.07	4	17.30%	33.30%	4.67	6	38.9%	50.0%
Participation and consensus orientation	3	3	3	100.0%	100.0%	1.4	3	46.70%	100%	3	3	100.0%	100.0%
Rule of law	6	4.75	4	79.2%	66.7%	3.16	5	63.20%	83.30%	4.83	5	80.5%	83.3%
Transparency	3	1.8	3	60.0%	100.0%	0.49	0	16.30%	0%	0	0	0.0%	0.0%
Responsiveness of institutions	10	7.65	8	76.5%	80.0%	3.54	5	35.40%	50%	5.25	5	52.5%	50.0%
Equity	8	2.95	3	36.9%	37.5%	1.4	2	17.50%	25%	3.23	3	40.4%	37.5%
Effectiveness and efficiency	6	5.35	5	89.2%	83.3%	3.28	4	54.70%	66.70%	4	4	66.7%	66.7%
Accountability	3	2.1	1	70.0%	33.3%	0.86	1	28.70%	33.30%	2.67	3	89.0%	100.0%
Intelligence/information	2	1.6	1	80.0%	50.0%	0.73	1	36.50%	50%	0.75	1	37.5%	50.0%
Ethics	3	2.6	3	86.7%	100.0%	1.57	2	52.30%	66.70%	2.67	3	89.0%	100.0%
Overall score	56	39.85	39	71.2%	69.6%	18.5	27	33.00%	48.20%	31.07	33	55.5%	58.9%

