

Development and Piloting of National Injury Surveillance System of Sri Lanka (NISSSL)

Project Period Jan-Jun 2013

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Disclaimer

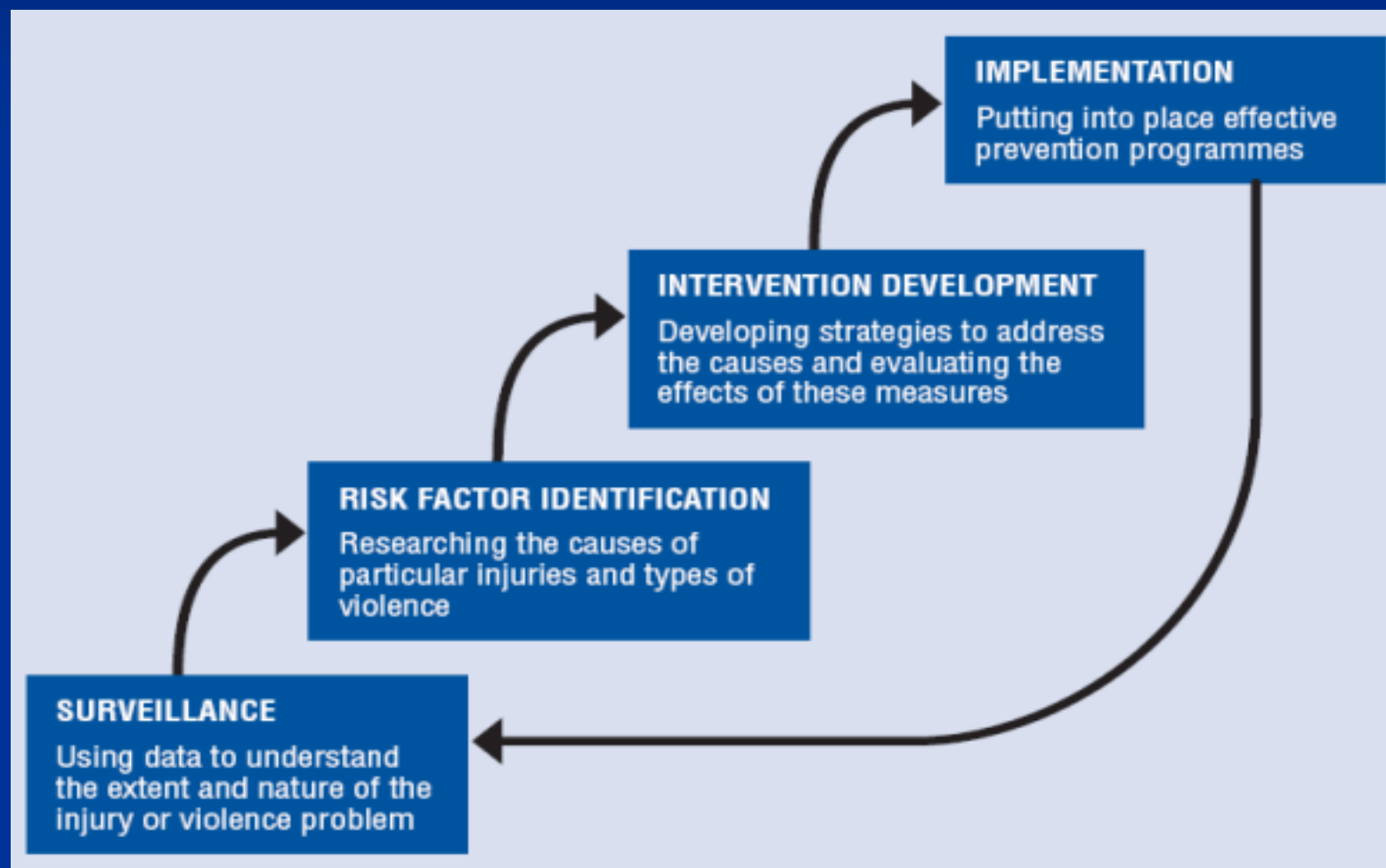
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Injury – A Public Health Issue

- Injuries are a major global public health issue
- Low- and middle-income countries affected more
- Leading cause of death - 15y to 44y males
- Leading cause of hospitalization in SL
- Most of the injuries are predictable, hence preventable
- Prevention/control is the solution

Injury Prevention – PH Approach

- Population based
- Evidence based
- Emphasizes collective action
- Multidisciplinary
- Adopt scientific methods
- Emphasizes prevention



Injury Surveillance in Sri Lanka

- Injury surveillance was a long felt need in SL
- Piloted an injury surveillance system in 2008
- System was evaluated in 2011
- Major drawback - lack of facilities to accommodate changes of the data collection tool without a system change and sustainability
- Recommended to establish a new system

Objectives

General objective

To develop and pilot web-based National Injury Surveillance System for Sri Lanka (NISSSL)

Specific objectives

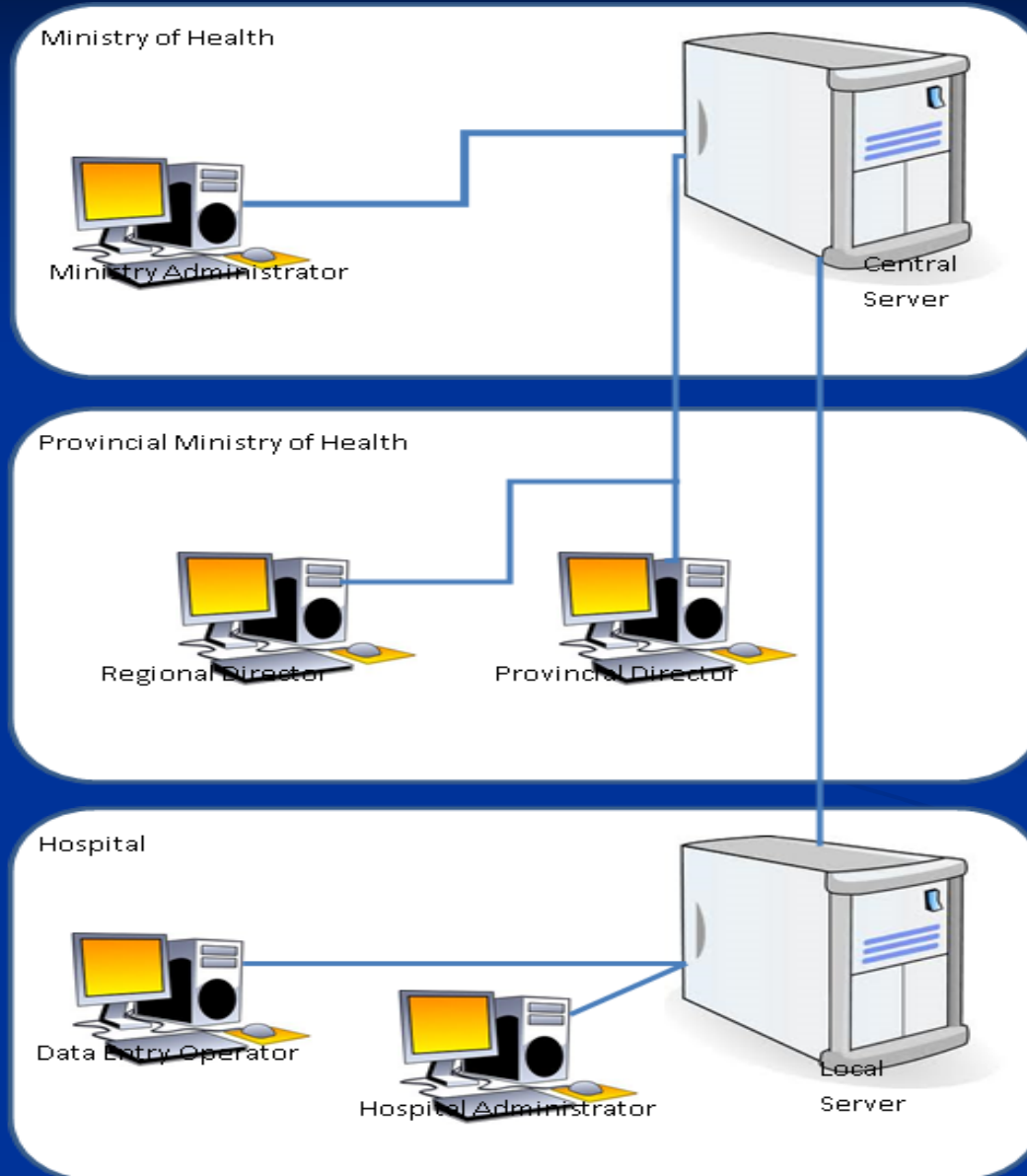
- To review the previous stand-alone injury surveillance system
- To analyse system requirements
- To develop the data collection tools
- To develop an in-house, web-based software using FOSS programming languages and database
- To pilot the NISSSL
- To train the staff of the relevant hospitals
- To monitor and evaluate the NISSSL
- To Enhance the NISSSL
- To establish a data backup policy
- To explore the possibilities of recovering and exporting existing data

Methods

Activities completed during the project period

- Reviewed the previous injury surveillance system
- Analyzed system requirements
 - Stakeholders were identified and had meetings and interviews with
 - System requirement specifications were listed
- Revised and developed the data collection tool – Injury Surveillance Record (ISR)
- Developed in-house web-based software using free and open source resources
- Piloted the system at Base Hospital, Horana

System Architecture



User Interfaces 1



Hospital : Base Hospital Horana

BHT :

- General Information
- Place and Intent
- Mechanism of Injury
- Safety Measures and First aid
- Nature and Severity
- Disposition

Timing

Admission Date * Admission Time * Admission Type * Direct Transfer Filled Date * Filled Time * Date of injury : Time :

Basic Details

Gender * Male Female Age : If Infant Month : Days : Residence

Ethnicity: Sinhala Tamil Muslim Other Religion: Buddhist Hindu Islam Catholic/Christian Other Occupation:

Hospital Details

Filed By * Ward *

User Interfaces 2



Hospital : Base Hospital Horana

BHT:

- General Information
- Place and Intent
- Mechanism of Injury
- Safety Measures and First aid
- Nature and Severity
- Disposition

? Where did the injury occur?

- Private House/home including yard
- Street/highway/road
- Industrial and construction area
- Medical service area
- Open land, beach, forest, jungle
- Residential Institution
- Railway line, station
- Public administrative area
- Farm or place of primary production
- Other
- School, institutional educational area
- Trade/service area
- Sports/athletic area
- Sea, lake, river, dam, borehole, well
- Unspecified/Unknown

? What was the apparent intent?

- Unintentional
- Legal intervention/war operations
- Suicide/self-harm
- Undetermined
- Assault/homicide - Relationship
- Unspecified/Unknown

User Interfaces 3



Hospital : Base Hospital Horana

BHT :

Update Save Reset Cancel Help

General Information Place and Intent Mechanism of Injury Safety Measures and First aid Nature and Severity Disposition

What was the mechanism of injury?

Road traffic incident

Mode of transport

- Walking
- Three Wheeler
- Lorry/Truck
- Unspecified/Unknown

- Pedal Cycle
- Car
- Van /Pick up

- Motor Cycle
- Bus
- Other

Counterpart

- Pedal Cycle
- Car
- Van /Pick up
- Fixed stationary object
- Unspecified/Unknown

- Motor Cycle
- Bus
- Train or railway vehicle
- Non-collisional incident

- Three Wheeler
- Lorry/Truck
- Animal
- Other

Road user type

- Pedestrian
- Other

- Driver/rider
- Unspecified/Unknown

- Passenger

Other transport incident

Blunt force (by a person/ animal)

Fall

- Same level
- Sharp force (Stab/cut)
- Burn (Smoke/fire/flames)
- Suffocation/choking/hanging
- Envenomation

- From height
- Sharp force (Animal bite)
- Burn (Contact with heat/scald)
- Electrocution
- Other

- Drowning/submersion
- Poisoning
- Explosive blast/gunshot
- Unspecified/Unknown

When mechanism is not road traffic incident: What was patient doing at the time of injury?

- Playing/sports
- Working for income
- Education

- Cooking
- Working other
- Other

- Resting/leisure
- Travel to/from work
- Unspecified/Unknown

Special categories

- Work-related
- Sexual violence
- Gang violence

- Natural disaster
- Child maltreatment
- Sport-related

- Intimate Partner Violence
- Elder maltreatment

User Interfaces 4



Hospital : Base Hospital Horana

BHT:

 Update  Save  Reset  Cancel  Help

General Information

Place and Intent

Mechanism of Injury

Safety Measures and First aid

Nature and Severity

Disposition

What is the outcome of the injury?

- Discharged with full recovery
- Discharged with permanent disability
- Discharged after the initial treatment for follow up
- Transferred for higher level of care facility
- Transferred for lower level care facility
- Death on / before arrival
- Death at ETU/PCU/ward
- Left against medical advice
- Other

Date of discharge/death/transfer

Diagnosis

Summary

Piloting

- At Base Hospital Horana
- March & April 2013
- 654 patients
- Data collected by nursing officers
- Results presented to the local stake holders

Results

Number of injuries by intent and mechanism

Intent	Mechanism	N	Percentage
Unintentional	Road Traffic Injuries	173	26
	Other Transport Injuries	3	0
	Other Unintentional Injuries	389	59
Intentional	Assault/Homicide	48	7
	Self-harm/ Suicide	30	5
Legal interventions/war		0	0
Undetermined		0	0
Unknown/Unspecified		11	2
Total		654	100

Results

Number of injuries by age group, sex and intent

Intent	Age groups																			
	0-4		5-9		10-14		15-19		20-24		25-44		45-64		≥65		All ages			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Both	
Unintentional	13	15	8	15	32	12	10	6	28	10	194	68	43	62	25	24	353	212	565	
Assault/Homicide	--	--	0	1	1	2	--	--	8	5	17	7	3	3	1	0	30	18	48	
Self-harm/ Suicide	--	--	--	--	--	1	1	3	11	5	2	3	3	0	1	0	18	12	30	
Legal Interventions	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Undetermined	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Unknown/Unspecified	--	--	--	--	1	--	--	--	4	1	1	1	2	--	--	1	8	3	11	
Total	13	15	8	16	34	15	11	9	51	21	214	79	51	65	27	25	409	245	654	

Discussion

- Generic and flexible electronic questionnaire
- No system change is required to incorporate new data elements
- Can handle single and multiple answers at any level
- Data validation is done at every possible stage
- Can operate with minimum internet facilities
- Improved data recovery options
- Flexible report generation facility

Issues Identified

- Lack of guidelines for government institutions
- Not having unique Bed Head Ticket (BHT) number or unique patient identification number i.e. Health Identification Number (HIN)
- Sustainability
- Need of dedicated staff (Medical officers/Nurses)
- Supervision
- ICD 10 knowledge
- Not having a trauma registry

Recommendations

- Scale up the NISSSL to the next level
- Ministry of Health to issue a circular introducing injury surveillance activities to the current health care system
- Re-structuring/establishment of injury surveillance units
- Job description of relevant employees and release them from their routine duties
- Capacity building

Recommendation contd...

- Training on ICD-10 coding for medical officers in the curative sector
- Establishment of trauma registry
- Guidelines on unique method to issue BHT Number for all hospitals in SL
- Introduction of unique personal identification number other than National Identity Card number to health care system. This can be Health Identification Number (HIN).

Achievements

- Presented the findings at national level
- MoH agreed to take over implementation
- Funds for the next step will be provided
- Expert committee appointed to supervise injury surveillance activities

Thank You