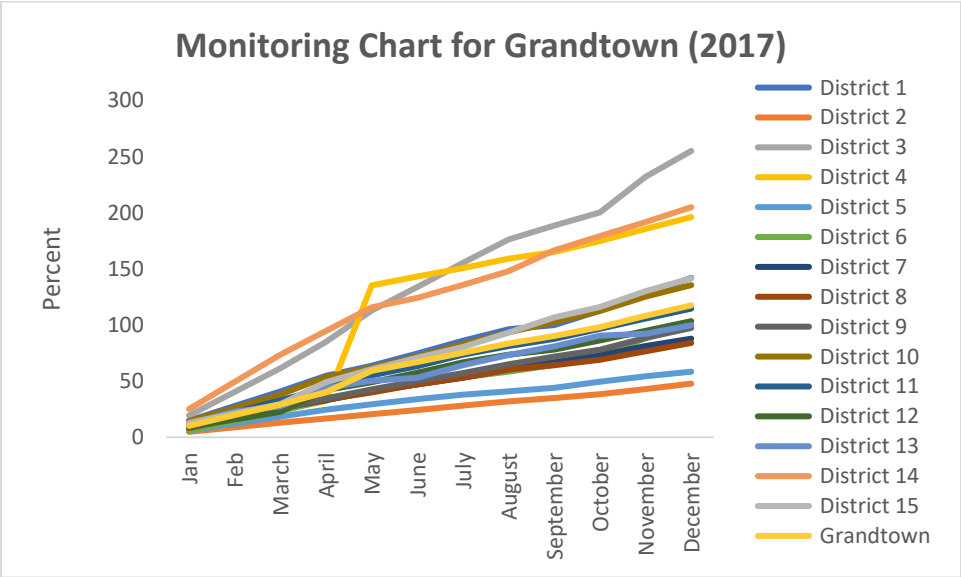
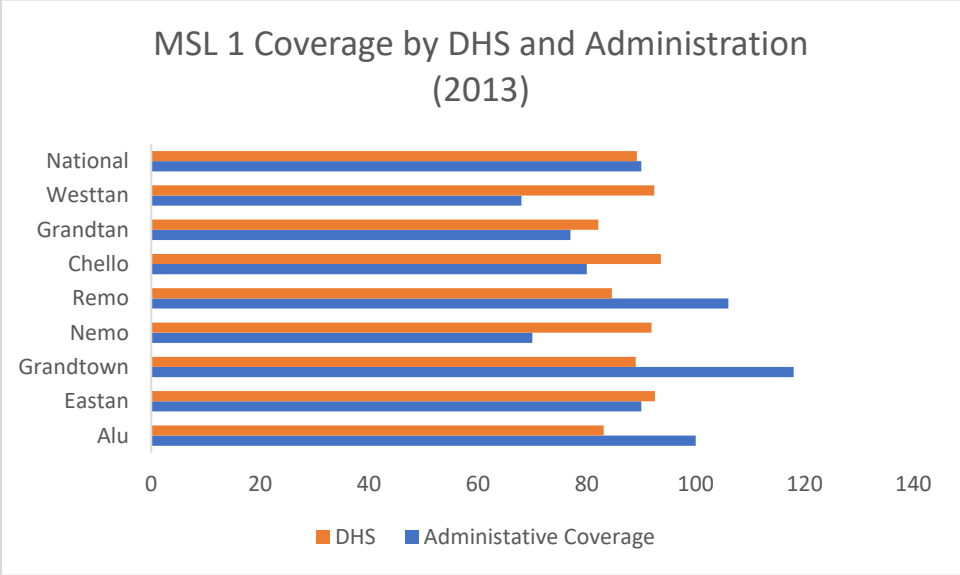
Task 1 Data Analysis

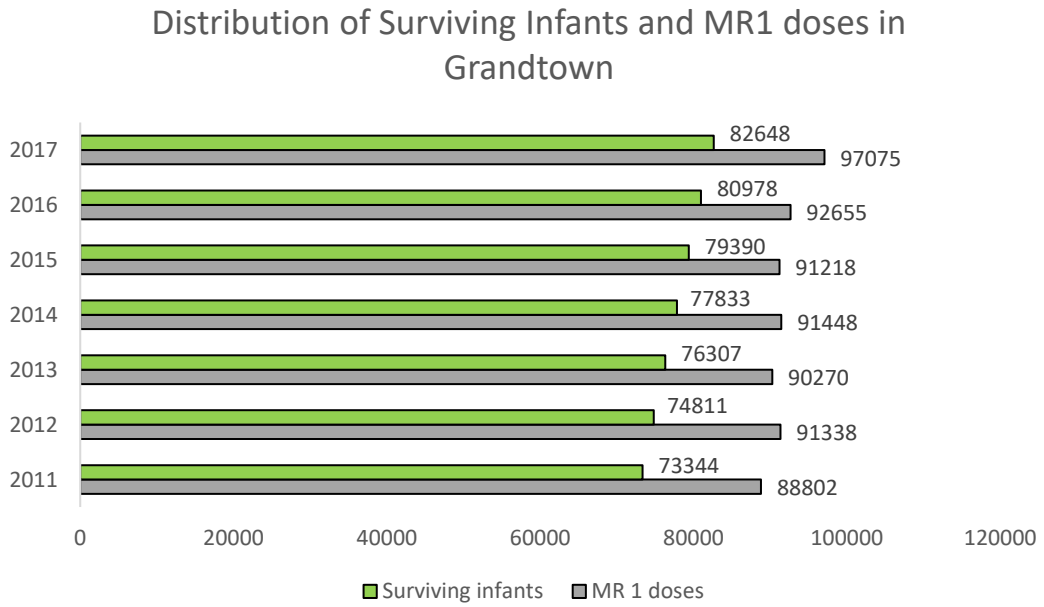


- Except District 13, all 14 districts repeatedly inserted the number of doses in February and March.
- For District 3, in April, May and November, there were sharp increasing number of doses
- For District 4, in May, MR1 doses were 12 folds higher than doses in other months
- Because of dilution effect, overall coverage of MS1 for 2017 became 117%
- But need to consider why District 2 and District 5 had low immunization coverage, it may be due to actual data or many hard to reach areas or migrant population or refuse to immunize or HR problem (may be HR shortage)
- As compared with population and doses of MR1, population was less than 50% of the doses (Why?) Denominator problem

Task 2 and 3



For Grandtown, Remo and Alu showed administrative coverage was higher than survey coverage, whereas, for Westtan, Grandtan, Chello, Nemo, survey coverage was higher than administrative coverage. So, methodology of site selection for DHS survey and need to know why administrative coverage was lower than survey coverage. Fortunately for national figure, survey and administrative coverage for nation was nearly same.



Denominator Problem at Grandtown

- Needs to consider why target setting or surviving infants was lower than doses of MR1 vaccine

Coverage Problem

- As there are 3 indicators of immunization coverage such as administrative coverage, survey coverage and occurrence of disease outbreak
- MR1 coverage from 2013 DHS – 89%
- National and subnational coverage for MR1 (2013)- 118%
- District level (2017)- Huge difference between highest coverage and lowest coverage districts, district 3 and district 2, i.e., 255% vs 48%
    - Among 15 district, 8 districts exceeded 100% coverage (103% to 255%), 2 districts had 100% coverage, 3 districts showed more than 80% coverage and 2 districts had less than 60% coverage (58% and 48%)
- As the dilution effect, overall coverage for Grandtown was more than 117% but it was still much higher than other towns, Nemo and Westtan

Task 4

Occurrence of measles outbreak

- According to given figure, occurrence of measles was highest among 1-4 years of age.
- 625 cases have been confirmed, and a number of child deaths have been attributed to the outbreak.
- 19% of the population is living in Grandtown and more than half of the cases were from Grandtown.
- There was rapid urbanization at Grandtown and there were a lot of underserved population, pocket population who did not have any kind of immunization.
- 80% of the cases were unvaccinated or had unknown vaccination status.

- As comparing to immunization coverage and occurrence of measles outbreak, it pointed out to investigate the actual immunization status.
- It may be due to denominator problem, as mentioned that there was rapid urbanization at Grandtown.
- And the immunization coverage for whole Vacciland was 92% in 2017, it may be because of high MR1 coverage from Grandtown and Remo (107% and 102% respectively).
- According to Task 2 and 3, MR1 coverage by DHS (2013) was 89% and administrative coverage for 2013 was 118%, therefore 29% difference.
- And there was outbreak in Vacciland, especially in Grandtown, need to get insight of the immunization status of the children, that means that there would be many children who missed MR1.
- In consideration with herd immunity, only 95% of measles vaccination can prevent measles outbreak and second opportunity of measles immunization is crucial for disease prevention (as second dose of measles was introduced only one year), so accumulation of susceptible population and this lead to cause the outbreak.

Task 5 To Brief Minister

- There was measles outbreak at Vacciland and more than half of the measles cases were from Grandtown where there was rapid urbanization with migrants and poor, susceptible population.
- Even administrative coverage of Grandtown was more than 100% coverage and so there was hidden problem on immunization itself, data accuracy and surveillance system.
- There would be underreported cases of measles in effected areas.

Task 6 Three actions to respond outbreak

- Enforce outbreak investigation and using measles outbreak investigation forms, MOI form, as basic health staff missed to do outbreak investigation by systematic way.
- Rapid Convenience Assessment on immunization status in some areas, according to spot map of disease outbreak and endure dynamic and accelerate fever with rash surveillance

- Need to consider selective outbreak response immunization (age, and/or only at outbreak areas) or non-selective outbreak response immunization (up to 5 years or 15 years, and/or all areas in Grandtown plus outbreak areas or whole country) according to findings, resouces and capacity of Ministry of Health.

Task 7 Formulate recommendations

- Supplementary immunization activities at low MR1 coverage areas and uncovered areas at first and then consider to cover all areas
- Strengthen measles surveillance system, to increase the sensitivity of surveillance system including responses
- Needs to revitalize the data management system especially on EPI, from immunization register to reporting and analyzing points
- Require to prepare special EPI microplan to urban poor and migrant population in order to target the missed children