HWC Portal and NCD software of Ayushman Bharat Program: A Review of the Data Reporting

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ABSTRACT

Introduction:

Non-communicable Diseases are rightly called 'Silent' diseases as they may not cause any symptoms for many years. The dilemma is that public perception for diseases is related with appearance of symptoms and well-being with absence of symptoms. Unfortunately, even in the absence of symptoms, disease progression continues unabated leading to complications.

The Ministry of Health & Family Welfare launched National Programme for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS) in October 2010 to give opportunity to people to get themselves screened for common NCDs like Diabetes and Hypertension periodically to detect them early and manage them with lifestyle modifications and treatment.

Research question:

What are the gaps in Data Reporting with respect to Health and wellness center Portal and Non-Communicable diseases software of Ayushman Bharat Program?

Methodology:

Certain NCD indicators were reviewed from NCD portal, HWC portal and NCD report and the study design used is descriptive study, chosen study includes 7 zones of Rajasthan from April 2019 to March 2020.

Result:

The launch of a national program to tackle the burden of NCDs is just the beginning, and the final success of the program will depend on how effectively we input the data in all three portals to conduct flawless monitoring and evaluation.

The results from this study will assist in identifying the gaps and simultaneously appropriate suggestions can be stated as per the case concern.

INTRODUCTION

India is experiencing a rapid health transition with a rising burden of Non-Communicable Diseases (NCD) surpassing the burden of Communicable diseases like water-borne or vector- borne diseases, TB, HIV, etc. The Non-Communicable Diseases like Cardiovascular diseases, Cancer, Chronic Respiratory Diseases, Diabetes, etc. are estimated to account for around 60% of all deaths. NCDs cause considerable loss in potentially productive years of life. Losses due to premature deaths related to heart diseases, stroke and Diabetes are also projected to increase over the years.

In order to prevent and control major NCDs, the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) was launched in 2010 with focus on strengthening infrastructure, human resource development, health promotion, early diagnosis, management and referral.

Also, recent initiative of Ayushman Bharat (AB) is an attempt to move from a selective approach to health care to deliver comprehensive range of services spanning preventive, promotive, curative, rehabilitative and palliative care. It has two components which are complementary to each other. Under its first component, 1,50,000 Health & Wellness Centres (HWCs) will be created to deliver Comprehensive Primary Health Care, that is universal and free to users, with a focus on wellness and the delivery of an expanded range of services closer to the community. The second component is the Pradhan Mantri Jan Arogya Yojana (PM-JAY) which provides health insurance cover of Rs. 5 lakhs per year to over 10 crore poor and vulnerable families for seeking secondary and tertiary care.

HWC are envisaged to deliver expanded range services that go beyond Maternal and child health care services to include care for non -communicable diseases, palliative and rehabilitative care, Oral, Eye and ENT care, mental health and first level care for emergencies and trauma , including free essential drugs and diagnostic services.

LITERATURE REVIEW:

- Erastus in 2019, in his research paper with his main objective of this study was to assess the quality of Non communicable disease data. The assessment utilized secondary data collected by the Non-communicable disease program and stored in the 'Non communicable disease database'. The study used a cross sectional study design to answer to its study objectives. This study used quantitative data. Data on age, sex, type of Non-communicable disease, creatinine result counts and date of enrolment into Non-communicable disease programme was extracted. Document review, especially patient files was used to allow for verification of information. Descriptive analysis was the main analysis. The assessment focused on three aspects of data quality: data completeness, data timeliness and data validity. The findings of the study revealed that there were data quality gaps in the Noncommunicable disease data. These gaps included discrepancies in data completeness and data timeliness. The database had 4893 individual patient records entered it with 1886 of those having been entered before the beginning of the year 2012. More than 40% of the total 4893 records entered in the 'Non communicable diseases database', had data incompleteness and data timeliness gaps. Data validity was the only data quality principle that passed the test of good quality data. Based on the findings of the study, assessment concluded that the NCD data at Medicines Sans Frontiers project was not of good quality. The study recommends a systematic review of the programmatic data collection system to address data quality gaps identified in the study.

- Krishnan, Gupta1, Ritvik, Baridalyne Nongkynrih, JS Thakur in a research paper for prevention and control of common noncommunicable diseases (NCDs) through behaviour and lifestyle changes, and to provide early diagnosis and management of common NCDs. M and E of program requires identification of indicators that measure inputs, process, outputs, and outcomes. However, the routine data collection and compilation could be the responsibility of Central Bureau of Health Intelligence. Integrated population-based surveys with existing disease and behaviour surveillance could be undertaken by National Centre for Disease Control. The national NCD cell should compile all this information into a meaningful policy brief so that appropriate programmatic interventions can be identified. The launch of a national program to tackle the burden of NCDs is just the beginning, and the final success of the program will depend on how effectively we monitor and evaluate it.

- Dr Ala Alwan , Prof David, colin Douglas-in 2010 wrote a research paper showed data from WHO data sources and published work for prevalence of tobacco use, overweight, and cause-specific mortality in 23 low-income and middle-income countries with a high burden of non-communicable disease. Data for national capacity for chronic disease prevention and control were generated from a global assessment that was done in WHO member states in 2009–10. Although reliable data for cause-specific mortality are scarce, non-communicable diseases were estimated to be responsible for 23·4 million (or 64% of the total) deaths in the 23 countries that we analyzed, with 47% occurring in people who were younger than 70 years.

RATIONALE:

Seeking and receiving health information are critical aspects. However, many informational sources lack accurate content. This study explores the challenges and the gap between information desired and information received from different portals of Ayushman Bharat Program aiming at maintaining the authenticity and transparency in the data for Non-Communicable Diseases.

RESEARCH QUESTION:

What are the gaps in Data Reporting with respect to Health and wellness center Portal and Non-Communicable diseases software of Ayushman Bharat Program?

OBJECTIVE:

- To review and identify the gaps in data reporting with respect to HWC Portal and NCD software.
- To recommend interventions that can be implemented strategically to overcome the gaps among NCD portals.

METHODOLOGY:

Followings are the description of indicators chosen and tools used for study:

1) Population Enumeration: To ensure equitable population coverage to address issues of marginalization, the frontline workers would create population -based household lists and undertake registration of all individuals and families residing within the catchment area of an HWC.

   The ASHA is responsible for undertaking the Population Enumeration of all those aged 30 years and above through home visits. She will register or list all eligible adults, (women and men) fill in details specific to Non-Communicable Diseases and it will be updated every 6 months. She will be given a specific register to record this information. ASHA will also fill a health card for everyone, which will have a unique ID/ AADHAR number issued by the state/district. The card will record health events (screening/diagnosis/treatment/complications, etc.). This would enable follow-up by the medical officer at the PHC level, or at a higher level of facility. They will also record their treatment decisions and other findings on the card. This will help us to know the treatment plan for the individual thus help in ensuring continuity of care. The format to be filled by the ASHA is attached at Annexure- 1. ANM support the ASHA through field visits in completing this enumeration. ANM will be responsible for cross verification of 10% population.

2) Total Individuals Enumerated: In case of NDC's only 30+ individuals are registered for population - based household listing within the catchment area.

3) CBAC forms- Community Based Assessment checklist for early detection of NCD's, The CBAC is designed to collect details related to history of symptoms and Behavioural factors. They include tobacco and alcohol consumption, amount of physical activity, measurement of waist circumference, family history of high blood pressure, diabetes, heart disease and presence of common symptoms for common cancers, epilepsy, and respiratory diseases. The ASHA is responsible for filling the CBAC (Annexure-2) for all women and men aged 30 years and above. CBAC is helpful to the ASHAs to remember the key risk factors, helps identify those who must be prioritized to attend the screening day and refer the individuals. People with a CBAC score of 4 and above will need to be prioritized for screening. ANM's task is to review the completed CBAC filled by the ASHA in your coverage area to ensure that it is filled and correct. The ASHA facilitator can also undertake this task.

4) Screening: is a process of identifying a disease condition among apparently healthy individuals, who may be at increased risk of a disease or condition. Screening Programmes can be undertaken for a population at large or targeting high-risk groups. Screening serves a platform of increasing awareness in the community about common Non-Communicable Diseases, risk factors and the need for periodic screening. It also enables an understanding of better health and the need to avoid risk factors in the general community. Screening requires careful planning and implementation. An important thing to remember is that once you suspect that an individual has a disease condition, the individual should be motivated to go the PHC or CHC and meet the concerned medical officer to confirm the diagnosis and start treatment. The health system should be ready to take care of those who are screened positive through diagnosis, treatment, and care. Otherwise people will lose confidence in the process of screening.

5) General considerations:

  - Approx.37%of the population is over 30years

  - Ina normative village of 1000: Total case load:370

  - No. of men over 30years=51%of the total case load:188

  - No. of women over 30years=49%of the total case load:182

  - For Hypertension and Diabetes:370- (annual screening)

  - For Oral Cancer:370–every five years.

  - For Breast and Cervical Cancer:182–every five years.

6) NCD Software: This software is used by districts and state for entering the data from facility level, Here, the data is entered in the form of line list and not in numbers. Some information from CBAC forms (filled by ASHAs) are updated from facility level, every month and that can be seen at state.

7) HWC portal: This portal works under the scheme of Ayushman Bharat for NCDs, Data for NCD is in the form of only numbers and no added information is added hence is less time consuming and gives the data in compiled form for every month.

8) NCD report: Report which is formed at the state taking into consideration all the necessary indicators and their data from gained from districts.

9) NN – represents that this data source does not provide information regarding this indicator.

Study Design	Descriptive study
Study Area	7 zones of Rajasthan State-Ajmer, Bikaner, Bhilwara, Jaipur, Jodhpur, Kota, Udaipur.
Study Period	April 2019 to March 2020
Study Tool	NCD-Software, HWC-Software, NCD Report

Table:1

DATA COLLECTION*:*

State level secondary data of financial yearApril2019-March2020, collected from NCD-Software, HWC Software, NCD report provided by government authority stationed at Non-Communicable diseases department heading NCD Program.

RESULTS AND ANALYSIS:

The routine data collection and compilation pinned under the responsibility of Central Bureau of Health Intelligence. Integrated population-based surveys with existing disease and behaviour surveillance pushed forward by National Centre for Disease Control. The national NCD cell compiles all this information into a meaningful policy brief so that appropriate programmatic interventions can be identified. The launch of a national program to tackle the burden of NCDs is just the beginning, and the final success of the program will depend on how effectively we input the data in all three portals to conduct flawless monitoring and evaluation. The results from this study will assist in identifying the gaps and simultaneously appropriate suggestions can be stated as per the case concern.

INDICATOR	NCD SOFTWARE						
	AJMER	BIKANER	BHARATPUR	JAIPUR	JODHPUR	KOTA	UDAIPUR
Facilities started population enumeration	35	72	40	46	109	17	31
Facilities Started Hypertension Screening	35	72	40	46	109	17	31
Facilities started diabetes screening	35	72	40	46	109	17	31
Facilities started oral cancer screening	35	72	40	46	109	17	31
Facilities started breast cancer screening	35	72	40	46	109	17	31
Facilities started cervical cancer screening	0	0	0	0	0	0	0
[TR] Total MPW (F) Trained	NN	NN	NN	NN	NN	NN	NN
[TR] Total ASHA Trained	NN	NN	NN	NN	NN	NN	NN
[TR] Total MO Trained	NN	NN	NN	NN	NN	NN	NN
[TR] Total SN Trained	NN	NN	NN	NN	NN	NN	NN
[SDR] Total individuals enumerated	61597	391065	37126	26129	190129	19226	15326
[SDR] Total CBAC form filled	35763	389235	36683	24305	161995	18892	15218
[SDR] Total individuals screened for hypertension	18027	160281	726	5113	50186	8813	3443
[SDR] Total Diagnosed Positive for hypertension	477	4053	7	845	387	122	94
[SDR] Total Individuals on Treatment for hypertension	45	930	2	79	27	13	17
[SDR] Total individuals screened for diabetes	18027	160281	726	5113	50186	8813	3443
[SDR] Total Diagnosed Positive for diabetes	358	2508	4	791	446	48	42
[SDR] Total Individuals on Treatment for diabetes	28	454	1	26	24	5	19
[SDR] Total individuals screened for oral cancer	15338	135549	408	4079	30011	6170	3306
[SDR] Total Diagnosed Positive for oral cancer	0	0	0	0	0	0	0
[SDR] Total Individuals on Treatment for oral cancer	NN	NN	NN	NN	NN	NN	NN
[SDR] Total individuals screened for breast cancer	15338	135549	408	4079	30011	6170	3306
[SDR] Total Diagnosed Positive for breast cancer	0	0	0	0	0	0	0
[SDR] Total Individuals on Treatment for breast cancer	NN	NN	NN	NN	NN	NN	NN
[SDR] Total individuals screened for cervical cancer	15338	135549	408	4079	30011	6170	3306
[SDR] Total Diagnosed Positive for cervical cancer	0	0	0	0	0	0	0
[SDR] Total Individuals on Treatment for cervical cancer	NN	NN	NN	NN	NN	NN	NN

Table:2 -The above table showing NCD software entries under NCD indicators among 7 districts of Rajasthan for financial year (April 2019-March2020)

INDICATOR	HWC PORTAL						
	AJMER	BIKANER	BHARATPUR	JAIPUR	JODHPUR	KOTA	UDAIPUR
Facilities started population enumeration	74	82	66	108	78	29	92
Facilities Started Hypertension Screening	115	82	61	112	78	30	93
Facilities started diabetes screening	115	82	60	112	78	30	93
Facilities started oral cancer screening	87	79	61	111	65	30	55
Facilities started breast cancer screening	86	79	60	111	55	30	55
Facilities started cervical cancer screening	3	21	49	1	9	30	30
[TR] Total MPW (F) Trained	96	78	31	143	276	48	102
[TR] Total ASHA Trained	585	356	350	596	806	198	290
[TR] Total MO Trained	55	24	57	130	64	32	82
[TR] Total SN Trained	66	40	59	177	99	41	121
[SDR] Total individuals enumerated	13,671	39,259	0	33,666	0	3,287	0
[SDR] Total CBAC form filled	66,985	53,949	360	23,239	0	3,287	0
[SDR] Total individuals screened for hypertension	62,495	77,857	970	50,864	0	8,007	0
[SDR] Total Diagnosed Positive for hypertension	2,438	7,329	120	2,695	0	544	0
[SDR] Total Individuals on Treatment for hypertension	2,459	8,241	64	5,182	0	1,731	0
[SDR] Total individuals screened for diabetes	62,433	67,081	899	31,424	0	4,945	0
[SDR] Total Diagnosed Positive for diabetes	1,965	3,751	80	1,500	0	149	0
[SDR] Total Individuals on Treatment for diabetes	1,982	4,061	12	2,380	0	332	0
[SDR] Total individuals screened for oral cancer	57,863	33,550	543	11,043	0	3,025	0
[SDR] Total Diagnosed Positive for oral cancer	120	9	0	3	0	1	0
[SDR] Total Individuals on Treatment for oral cancer	120	8	0	10	0	0	0
[SDR] Total individuals screened for breast cancer	30,955	13,829	266	4010	0	1581	0
[SDR] Total Diagnosed Positive for breast cancer	1	13	0	0	0	1	0
[SDR] Total Individuals on Treatment for breast cancer	1	20	0	0	0	0	0
[SDR] Total individuals screened for cervical cancer	266	10,231	262	1,104	0	1581	0
[SDR] Total Diagnosed Positive for cervical cancer	0	7	87	1	0	0	0
[SDR] Total Individuals on Treatment for cervical cancer	0	2	0	1	0	0	0

Table:3-The above table showing HWC portal entries under NCD indicator among 7 districts of Rajasthan for financial year

(April 2019-March2020)

INDICATOR NCD REPORT							
	AJMER	BIKANER	BHARATPUR	JAIPUR	JODHPUR	KOTA	UDAIPUR
Facilities started population enumeration	61	28	41	89	90	30	100
Facilities Started Hypertension Screening	61	28	41	27	90	26	78
Facilities started diabetes screening	61	28	41	27	90	26	78
Facilities started oral cancer screening	61	28	41	27	90	26	78
Facilities started breast cancer screening	61	28	41	27	90	26	78
Facilities started cervical cancer screening	0	0	0	0	0	0	0
[TR] Total MPW (F) Trained	155	118	95	65	196	5	44
[TR] Total ASHA Trained	158	185	95	66	117	25	189
[TR] Total MO Trained	63	53	68	60	81	20	23
[TR] Total SN Trained	0	0	0	0	0	0	0
[SDR] Total individuals enumerated	0	0	0	0	0	0	0
[SDR] Total CBAC form filled	48415	192000	4269	36869	27635	19809	18975
[SDR] Total individuals screened for hypertension	42474	137160	747	21058	25343	6514	14526
[SDR] Total Diagnosed Positive for hypertension	3813	27363	28	1489	1485	615	338
[SDR] Total Individuals on Treatment for hypertension	3813	27363	28	1489	1485	604	338
[SDR] Total individuals screened for diabetes	42474	137160	747	21058	25343	6514	14526
[SDR] Total Diagnosed Positive for diabetes	3029	6779	8285	977	1255	529	247
[SDR] Total Individuals on Treatment for diabetes	3029	6779	8285	977	1255	526	247
[SDR] Total individuals screened for oral cancer	42474	137160	747	21058	25343	6514	14526
[SDR] Total Diagnosed Positive for oral cancer	5	0	0	0	0	0	1
[SDR] Total Individuals on Treatment for oral cancer	5	0	0	0	0	0	1
[SDR] Total individuals screened for breast cancer	19113	61722	336	9476	11404	2931	6537
[SDR] Total Diagnosed Positive for breast cancer	3	0	0	0	0	0	0
[SDR] Total Individuals on Treatment for breast cancer	3	0	0	0	0	0	0
[SDR] Total individuals screened for cervical cancer	19113	61722	336	9476	11404	2931	6537
[SDR] Total Diagnosed Positive for cervical cancer	0	0	0	0	0	0	NN
[SDR] Total Individuals on Treatment for cervical cancer	0	0	0	0	0	0	0

Table:4-The above table showing NCD report entries under NCD indicator 7 districts among Rajasthan for financial year (April 2019-March2020)

➤ Graph 1 representing data discrepancy input among NCD software, HWC portals and NCD report for 'Indicator-1- Facilities started population enumeration' in seven districts of Rajasthan.
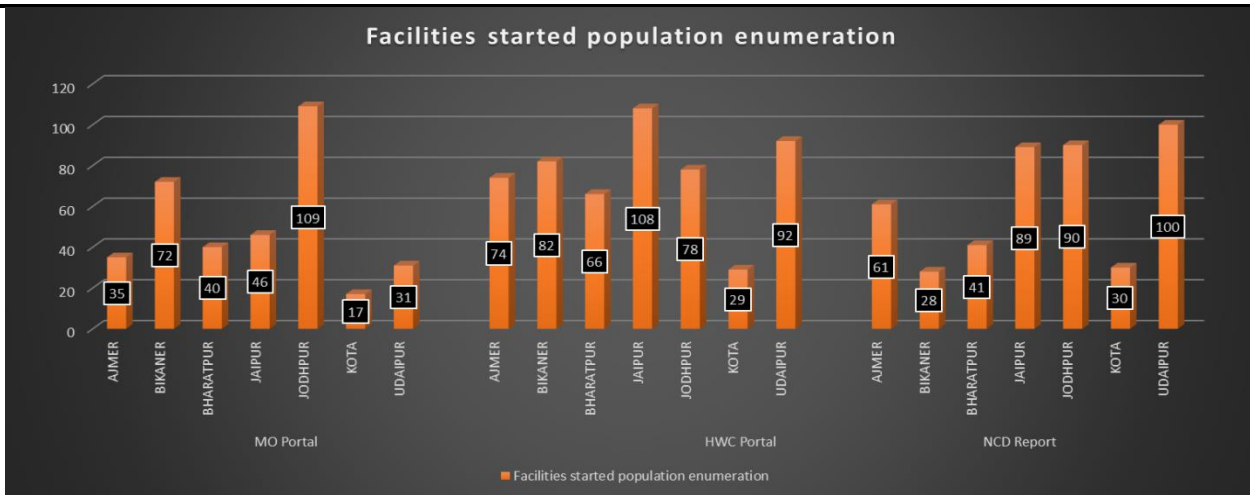
Figure:7

➤ As per the data input, in the HWC portal 'Indicator -11- Total individuals enumerated' are less than the total CBAC forms filled, which shows dilution of reporting pattern and the level of awareness among the individuals working at different districts.

➤ In all graphs, entries with "0" under any indicator represent lack of data which is due to unawareness or misreporting and difficulty in interpreting peculiarities of portals.
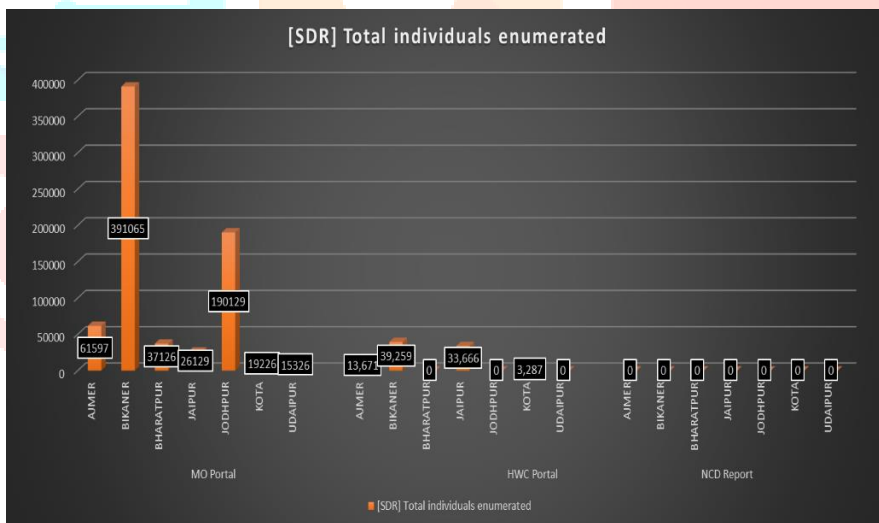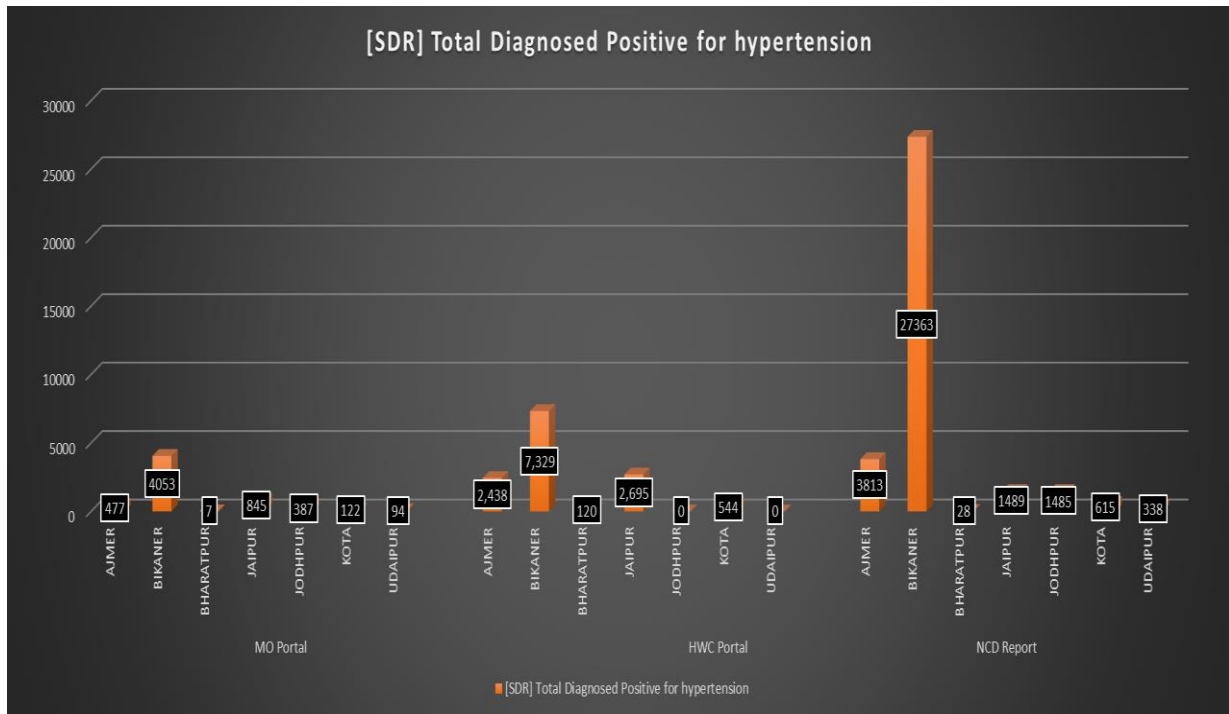

Figure:8

Figure:9

- According to the data pulled from portals for hypertension, diabetes, and cancer treatment (Indicator-15, 18, 21, 24, 27) shows that all the individuals diagnosed with the disease mentioned are availing treatment with regular follow-ups, again presenting gap in the reporting.

- HWC and NCD trainings are given separately resulting in breach among the entries under "Indicator -7- Total MPW(F) Trained".
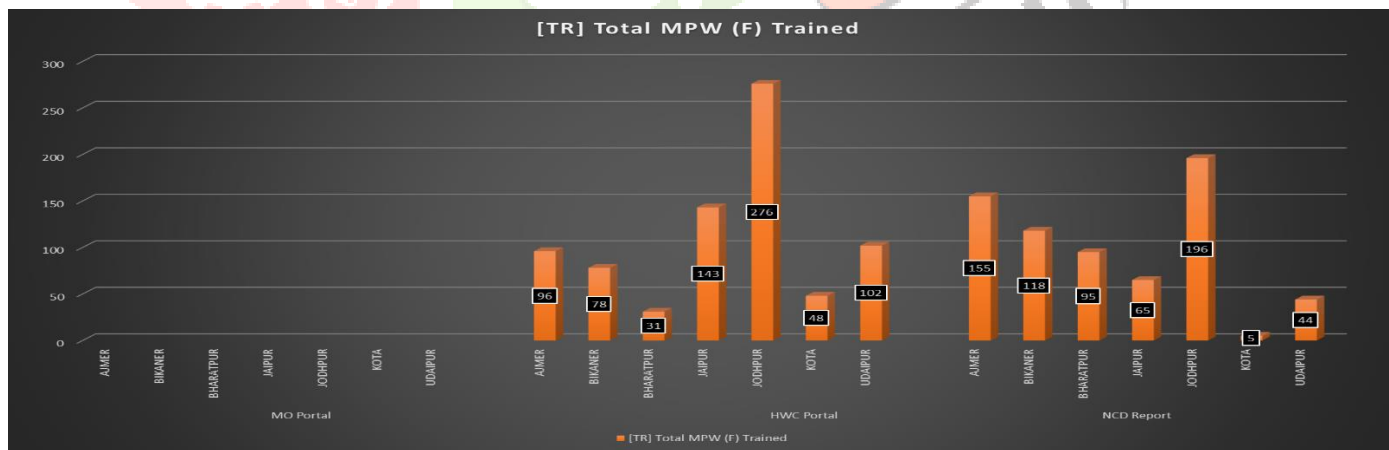

Figure:10

- As a result of hierarchical unawareness, the data input under "Indicator -8-Total number of ASHA's trained" is more in HWC than in NCD report.

Figure:11

➢ Poor orientation and training are remarked for the same indicators are handled by distinct supporting teams which stipulates a great contrast in data of almost every indicator, express less coordination between the teams under one roof.

➢ Due to lack of peripheries screening and constant observing the under emphasis of "Indicator -18 to 27- Facilities providing Screening, diagnosis, and treatment for all the three types of cancers" are subsequently overlooked.

➢ Reliability of source is put under question as the diagnostic service is not functional at facility level showing "0" data input in NCD software and NCD report but few entries can be viewed in HWC portal for "Indicator-26- Total diagnosed positive for cervical cancer".

Figure:12

➢ State NCD cell being misguided by districts as the data input is lacking with regards to training in NCD software.

➢ As per population-Based Screening guidelines given by the state, disease wise treatment and follow-up should be observable on NCD software but is not the add -on feature hence showing dilution of thoughts.

RECOMMENDATIONS:

GAP IDENTIFIED	RECOMMENDATIONS
1. Discrepancy in data inputs.	1. Use of third-party verification systems They can do this by independent logging page load events via their own tracking pixels, provided with additional verification metrics in their respective dashboards and reporting systems.
2. Some indicators are overlooked	2. Identifying a process owner and to provide employees with training that covers all the aspects of data entry practices.
3. Difficulty in interpretation due to unawareness and multiple proficiency level among data entry operators	3. Standardized, consistent, nationally acceptable outcomes of training through skill enhancement program.

Table:5

- Reporting of MO portal in form of line list is done at the facility level and reporting of HWC portal in compiled form is done at the district level, so in the view of this concern a single point of contact should be authorized to reduce perplexity and misreporting pattern.

- Homogenized portals should be designed keeping it systemized and separate sub headers for MO at facility level and HWC at district level.

- Data Quality management practices are required to maintain a high-quality information that can be measured from five main criteria namely: Accuracy, relevancy, completeness, timeliness, and consistency. The standard for good data quality can differ depending upon the requirement and nature of data its selves.

- Disciplined data governance should be performed through rigorous management of incoming data and thorough regression testing for change management and careful design of data pipelines, resulting in much easier and less costly to prevent the data issue from happening in the first place rather than relying on defending systems.

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