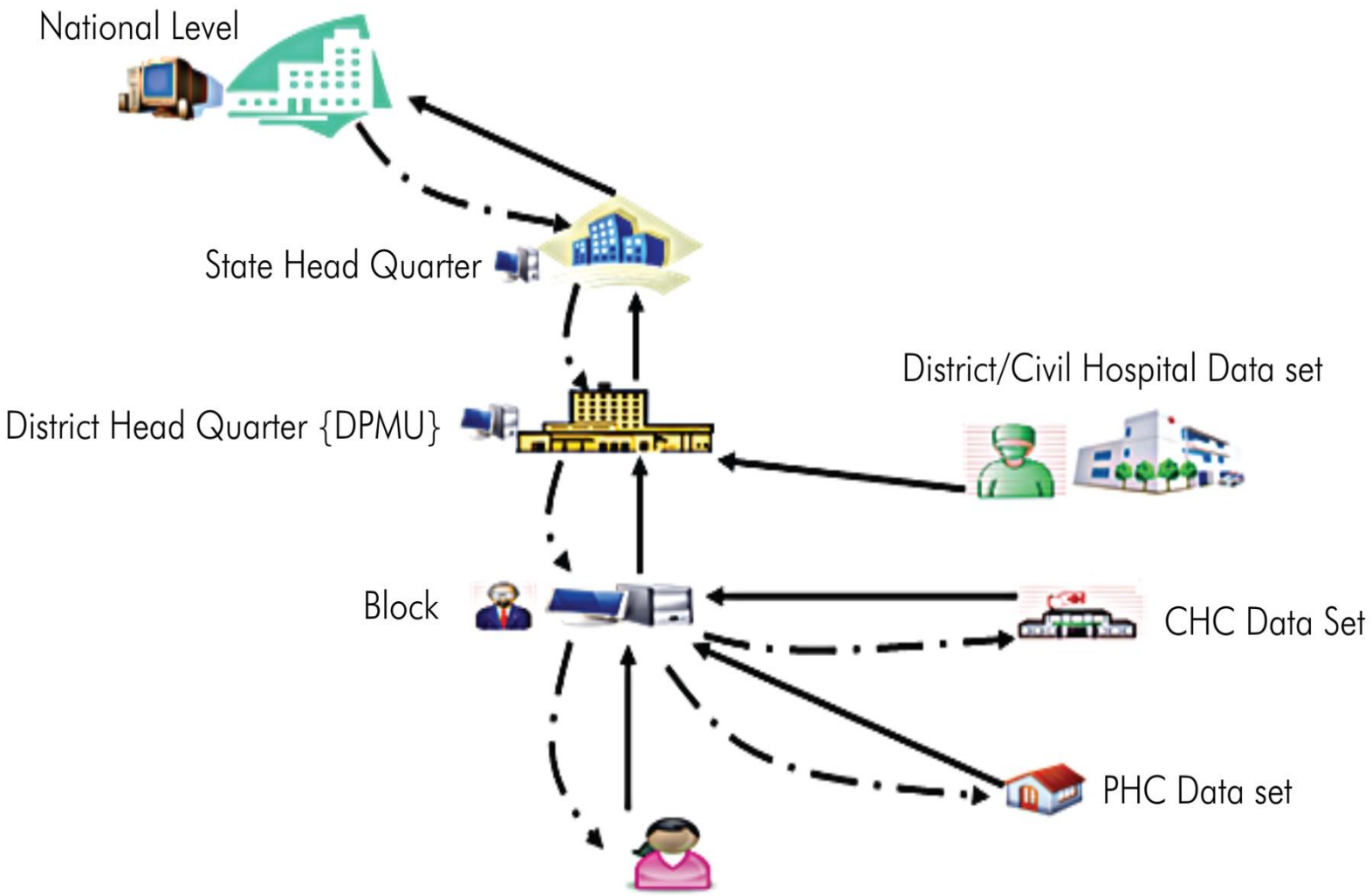
THE PROBLEMATICS OF PUBLIC HEALTH MANAGEMENT INFORMATION SYSTEMS:

A BEGINNERS GUIDE

Largely based on The HMIS Resource Persons Manual, NHSRC,2012

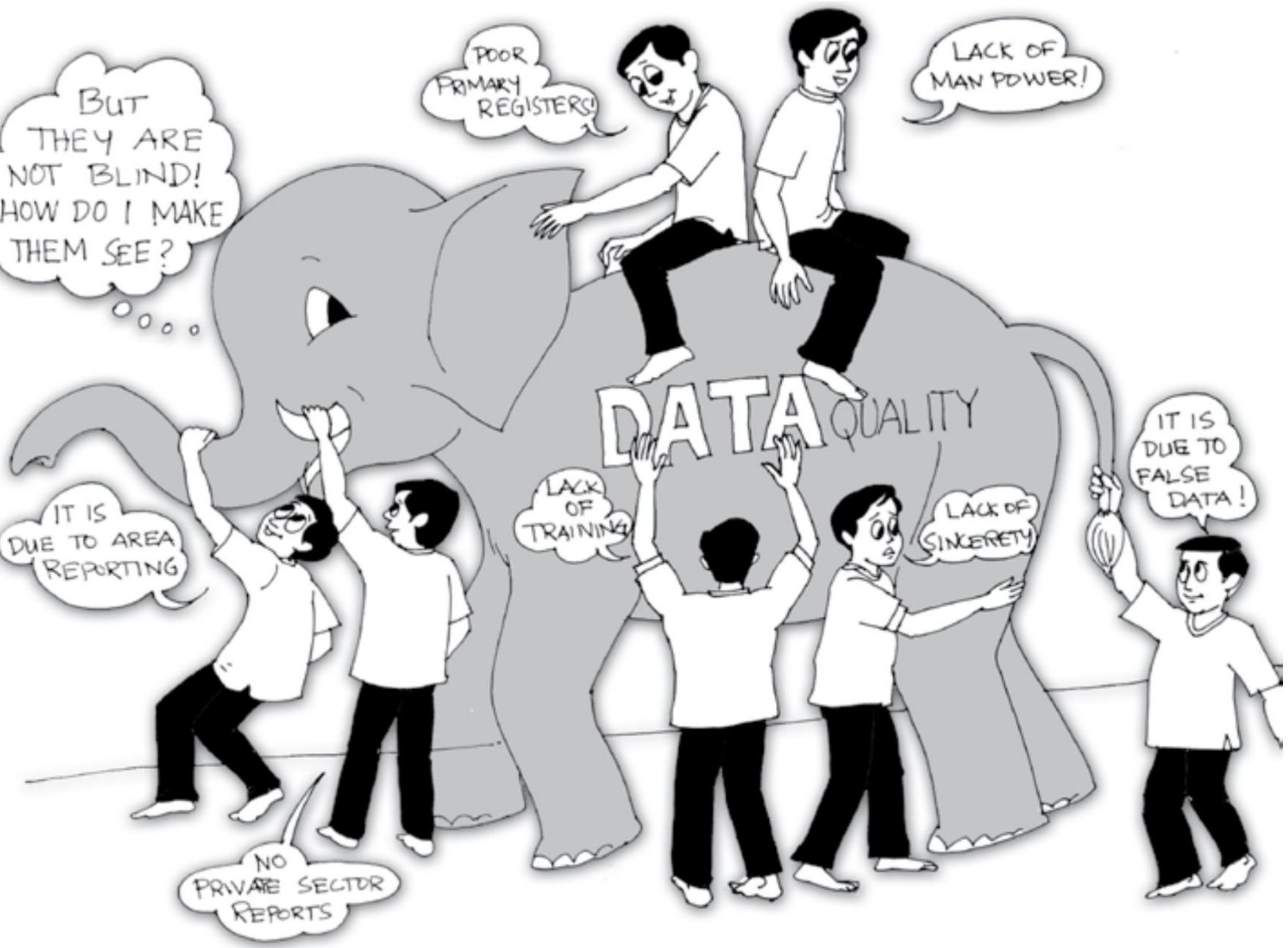


Information flow in hmis

Block is the usual first level of aggregation and feedback

District is the next level – of information use and action

Non-duplication between Sub-center, PHC (sector) and block data set is important… CHC data set is part of block data set..



Data Quality Problematic:

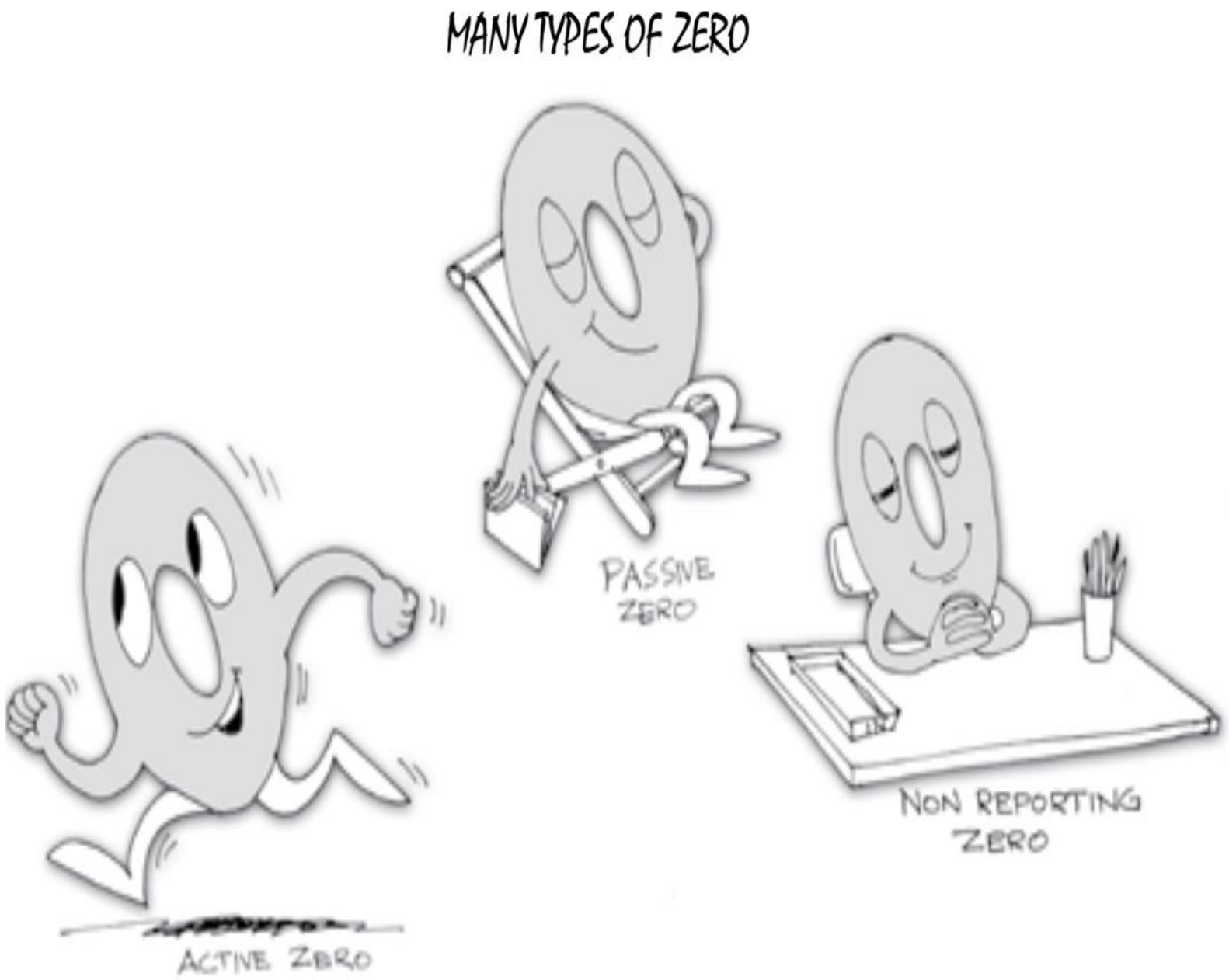
The determinants of data quality are best seen as a composite of issues pertaining to organizational processes, procedures or processes followed, and institutional capacity

Read full chapter on this, in HMIS Manual 4- page 3 to 15

While false reporting is a problem- it is relatively a small part of the problem…

And it has its own determinants:

- Fear of reprimand and punishment
- Unrealistic targets- officers know its false- but they themselves are under pressure.



A large part of data elements are reported as zero !!

And no one can make sense of what these zeros are due to

Active zero- health event looked for but it did not happen.

Passive zero-health event not looked for- perhaps not relevant there;

Non-reporting- failed to report- status of event unknown.

Therefore cannot use information for action:

no protocols for error corrections contribute o poor quality.

Till when can corrections be made?

Who can make the corrections?

Who authorizes the correction?

How is the audit trail of corrections made recorded and accessed?

Problems related to data… ….

Good review of timeliness of reporting by the district officer would also help identify problems - infrastructural or human resource - in facilities and attend to it

One guiding principle is to reduce the necessary amount of information to a minimum data set

Problem of primary registers is even more acute in large hospitals where different units need to have well designed primary registers

Data duplication… is the most resistant and universal of all the problems

The poorly designed recording register is perhaps the most common cause of poor quality of data

When a single data element is collected as multiple disaggregated elements the computation errors increases geometrically and could seriously compromise the reliability of the final data element

The HMIS has currently 50+ disaggregated data elements for death reporting. But if reported as a line- it would have only three: age, sex and probable cause; and all the required data disaggregation can be generated by computer.

The single most important step is creating a data dictionary and then making i widely available to all service providers

Name based tracking does not currently solve this problem. Most applications do not have mechanisms of detecting duplication of entries or protocols of how to correct duplication if detected.

Errors are very instructive:

They are usually due to a flaw in process- and not false reporting

Like 120 percent achievement of immunization- could indicate duplication of data- figure it out, or wrong denominator- trace it back- very useful for improving data quality.

Need for Data standards – an example

Service reporting=HMIS-NHM asks providers to report only those pregnancies for who they have provided services-

Area Reporting=RCH_portal asks MPWs to report on service utilization by all pregnancies in their area irrespective of who has provided services..

Area vs service reporting

The two figures may never match- service reporting will have gaps, will miss private sector, but will have no duplication and is reliable

The latter is hearsay plus if facilities also report- will have high duplication..

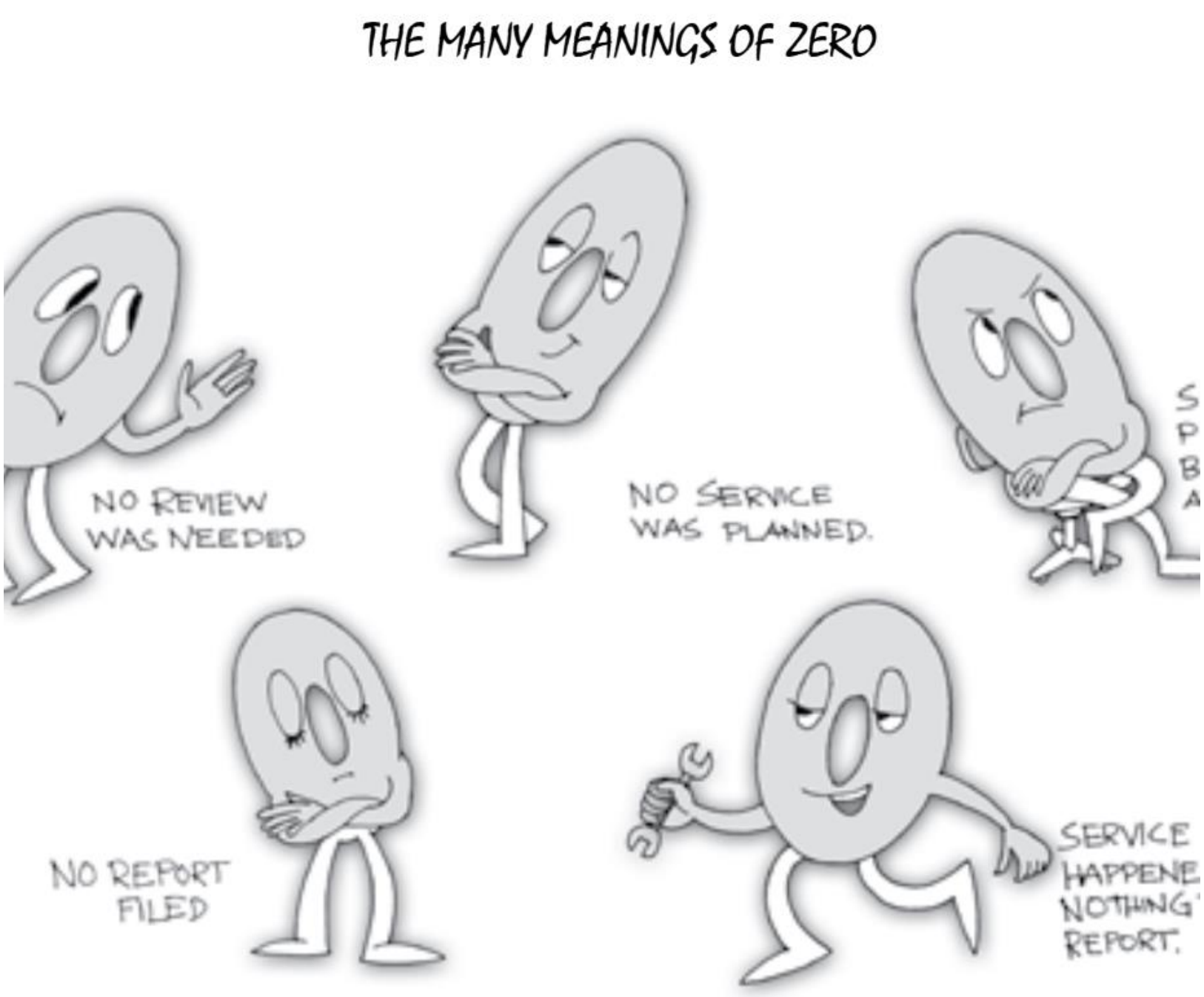
On the ground- most providers are aware of such inconsistencies- but it helps reach targets- why complain about it….

Is this false reporting- and if so who is to blame?

The Use of Information Problematic:

"There is a divergence between the almost obsessive-compulsive collection of information and the stagnation and relative neglect of its use…"

Pg 68…PHI,2017



Information use needs knowledge of context:

Imagine then, the idiocy of adding it all up at the central level and trying to make sense of it.

Information use for improved services is always best done at the level of the district, the block or the facility.

But features for access analysis and use of information at local levels is almost never present..

Problematic of Data-Work undermining service provision

Everyone now acknowledges this as the problem – but seem curiously unable to do anything about it- and it keeps adding on.

The most recent absurdity- addition of 75 registers for NQAS certification- no one at any level owns the decision, and agree that it is absurd, but over 1.5 lakh facilities are struggling to achieve it

The tipping point

Many new programmes- especially non-communicable diseases can be added on. Additions in service delivery during the household visit, and at the facility are easily added on- but the burden of data-work is the biggest bottle-neck now in moving from selective to comprehensive care…

What explains this paradox- So much data collected so little use? Is it a **panopticon** at work.

Typically in a panopticon- the central watch-tower is empty.

There is an obsession about every activity being visible to the top management…

It is not the actual analysis and use of information that leads to change, but the very existence of any all-seeing eye that every person has to align with- which brings about desired behaviour.

HMIS as surveillance-

Panopticons always fail….

For many reasons: -people resist surveillance, the person entering data has nothing to do with performance, and because everyone figures the watch-tower has no capacity to watch everyone…

The way to tackle panopticon is to control the data-fetish and start more use of the information….

PART II
SOME PRINCIPLES TO GUIDE THE WAY FORWARD..

CONVERSATIONS OVER DATA

Breaking the vicious cycle
Needs a strategy:

Data is always messy- begin HMIS reform with use of data..

Conversations between public health managers, data managers and providers- help identify both data flow gaps and performance gaps…

Guided by the conversation..

……. Collect only that data from providers which

a) Is useful to them

b) Which were useful in the conversations to guide action

All the rest goes into surveys or field visit reports….

Data collection must help the service provider.

There was once a MD in Punjab who made ANMs report daily- it stopped only when they went on strike.

Of course he never used the data.

Others may not go on strike- but the weak have other weapons against the arrogant and the powerful…

An indicator is like watching a football match through a chink in the fence. …

Do not expect to see all of it…

Data collection for Crafting indicators-….

Needs an appropriate denominator.

Based on maximal usable information with fewest points of data…

Understand principle of hierarchy of indicators-more at decentralized levels, few at higher levels.

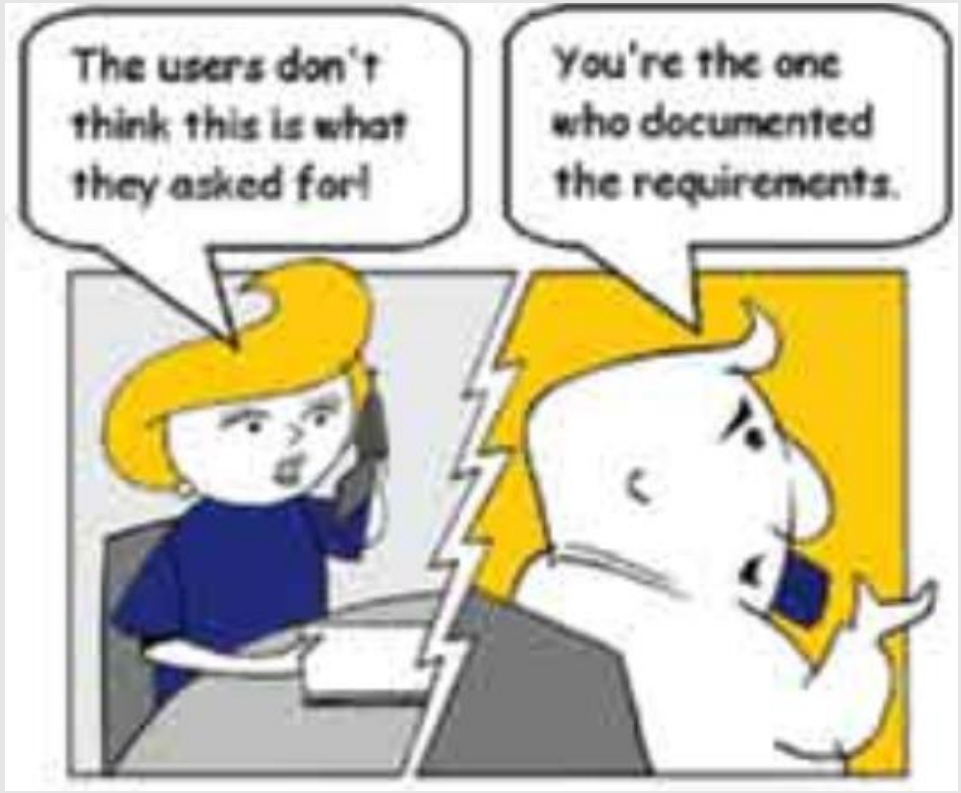
If no suitable indicator can be made- do NOT collect that data…

Keep consultation going….

The requirements of different actors are not always clear, nor static, and as deployment and learning occurs, it keeps changing as well

The name of the game is to build "Agile Systems" which are possible only with open source, open standards software..

Finagle's Laws of (Public Health) Information

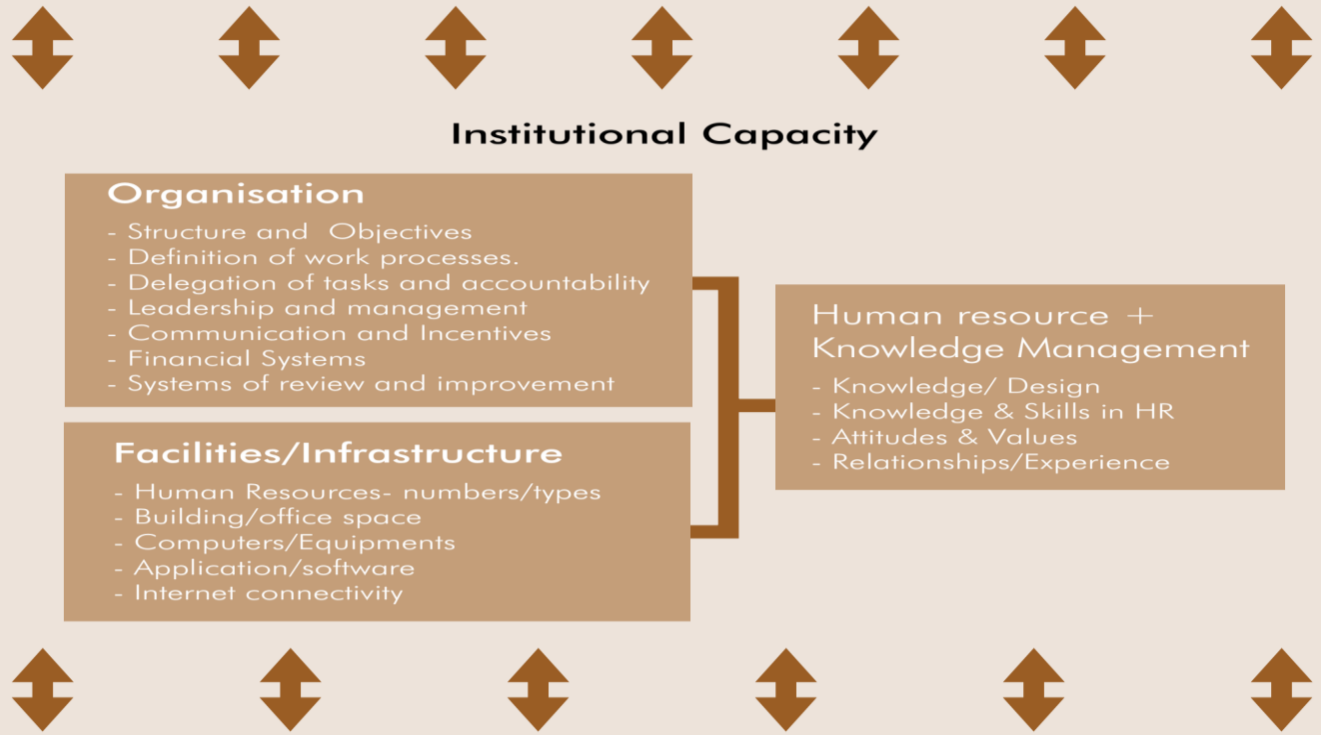


- The information you **have** is not the information you **want**:
- The information you **want** is not the information you **need**
- The information you **need** is not **easy to obtain**.
- The information you **obtain** is not **worth the costs** you pay for it .


I'LL NEED TO KNOW YOUR REQUIREMENTS BEFORE I START TO DESIGN THE SOFTWARE.
FIRST OF ALL, WHAT ARE YOU TRYING TO ACCOMPLISH?
I'M TRYING TO MAKE YOU DESIGN MY SOFTWARE.
I MEAN WHAT ARE YOU TRYING TO ACCOMPLISH WITH THE SOFTWARE?
I WON'T KNOW WHAT I CAN ACCOMPLISH UNTIL YOU TELL ME WHAT THE SOFTWARE CAN DO.
TRY TO GET THIS CONCEPT THROUGH YOUR THICK SKULL! THE SOFTWARE CAN DO WHATEVER I DESIGN IT TO DO!
CAN YOU DESIGN IT TO TELL YOU MY REQUIREMENTS?

External Environment

- **Governance Environment:**
  1. Environment supportive of decentralization, requiring decentralized management Systems- ma decision making at district level- state and national level concerned largely with policy and resour allocation and scheme design.
  2. Understanding of the role of central authority in a decentralized environment as "ensuring standar and ensuring equity in development"- through direction of financial and human resources and technic support.
- **ICT Policy Environment:** Standards and Norms – for data quality, data definitions, data storage a retrieval and interoperability.
- **Cultural issues:** Perceived Need for information, Culture of use of information.



Linkages:

1. Partnerships with support agencies and informatics and public health institutions.
2. Networks, communities of practice and learning alliances amongst practitioners at Local, Region National and International Organizations.
3. Linkages with communities: Flow of information to communities and incorporation of commun feedbacks.

Build Capacity…

Fig: Institutional Capacity with Linkages required for HMIS systems to perform.

Institutional Capacity Building is far more than training..

Contents of HMIS- The Resource Persons' Manual - 2012,

- Basheer Ahmed studied economics but started his career as an Illustrator. Over the last 40 years he has worked for many publishers of books or niche periodicals, as designer and Illustrator and often editorial work as well. This includes a publishing house, Blackie and sons , Aside, Crea, Vanna Mayil and the Tamil literary magazine Uyir Ezhutthu.

- From 1985 he has been the main illustrator and layout artist for Thulir, the Chidrens Science Magazine published in Tamil by the Tamil Nadu and Pondicherry Science Forum. Over these 37 years he has collaborated with many authors but especially Dr Sundararaman in production of over a 100 books related to popular science communication, health education, policy briefs and reports on health and other development issues for the peoples science movements and the peoples health movements and government agencies.

- He has also conducted Comics Workshops for rural youth in association with an NGO, VCDS, and World Comics – Finland. He has also co authored a book on creating comics with social awareness along with Leif Packalen of World Comics. In 2014, he also started his own publishing house, bringing out more than 25 titles, which include translations of Charles Darwin's Voyage of the beagle, Marco polo's Travelogue, Fa-hien's 'Journey to the Land of Buddha.' His interests included translation to Tamil, having translated William Saroyan's short story collection 'My name is Aram.' Currently working on the translation of Charles Darwin's 'Origin of species.'

Acknowledgements

To the illustrator

Basheer Ahmed

And to all those within NHSRC and in the states and ministry who worked in developing the health management information systems under the National Rural Health mission- 2007 to 2012

Disclaimers

The power-point is based on HMIS Resource Persons 'Manual Volume IV.

No hard copy was ever published and it remained in a draft stage. book was never published.. However the manual had a limited circulation as an NHSRC online publication.

It is important to note that though written for NRHM, it cannot be formally attributed to NRHM.