

تأثير كوفيد-19 على الإحصاءات السكانية والحيوية

التحديات والفرص
8 يونيو 2020م





رايكم يهمننا من خلال
ملاحظاتكم وتقييمكم



اسأل من خلال الدردشة
مع كتابة الاسم والدولة



سعيدين
بوجودكم معنا ونأمل من
الجميع التواجد قبل **10**
دقائق من الموعد
واتباع الآتي ...



أطفء الميكرفون
لضمان جودة الصوت



ابقاء الكاميرا فعالة في أول
اللقاء فقط ليتم التقاط
صورة جماعية



أطفء الكاميرا لضمان
جودة الصوت

Recent GCC-Stat GCC Webinars and On-line Regional Training

15 April

Ensuring CPI Continuity; Consumer Price Index compilation during crisis

19 April

تأثير الجائحة الوبائية على إحصاءات العمل في 19-كوفيد دول مجلس التعاون لدول الخليج العربية

22-23 April

الدورة التدريبية حول بعض مواضيع إطار تطوير إحصاءات البيئة وفقاً لتصنيف الأمم المتحدة وربطها بالظروف الطارئة فيروس كورونا

27-28 April

ندوة عبر الإنترنت حول الإحصاءات لدعم قرارات وسياسات الأمن الغذائي في دول مجلس التعاون لدول الخليج العربية، خلال وبعد جائحة (كوفيد 19)

2 – 4 June

الدورة التدريبية حول إحصاءات العمل من مسح القوى العاملة في دول مجلس التعاون لدول الخليج العربية وتأثيرها بالجائحة الوبائية كوفيد-19



Upcoming Population and Social Statistics Webinars

Impact of COVID19 on
Population and Social
Statistics

15, 16, 22
and 23
June

أثر جائحة فايروس كورونا
المستجد على الإحصاءات السكانية
و الاجتماعية

Ensuring 2020 Census is
ready to respond to the
challenges from COVID19

6, 7 July

التأكد من مدى جاهزية تعداد
2020 لمواجهة تحديات جائحة
فايروس كورونا المستجد

Key Concepts and Definitions

المفاهيم و التعاريف الأساسية

Population Statistics to help understand the short- term impacts of the pandemic

الإحصاءات السكانية التي تساعد على فهم آثار إنتشار الوباء على المدى القصير.

What will be needed after the pandemic

الاحتياجات و المتطلبات بعد الأزمة

Demographic Measurement Challenges - during and after the Pandemic

تحديات حساب المؤشرات الديموغرافية أثناء الجائحة وبعدها

Longer Term Opportunities for Population and Vital Statistics

فرص الإحصاءات السكانية و الحيوية طويلة الأمد

Questions and Answers

الأسئلة و الاستفسارات

Presenters



Salah Al Muzahmi, PhD

Director of Research & Development Indicators department at (GCC-Stat) since March 2017. Dr Salah was previously the Deputy Director General of Planning & Studies in the Ministry of Health, Sultanate of Oman



Ibrahim Al Farai

Currently Acting Director Population and Social Statistics Department, GCC-Stat. Ibrahim joined GCC-Stat in 2015 from the Ministry of Health, Sultanate of Oman



Nancy McBeth

Consultant and Adviser, GCC-Stat since late 2014. Nancy has also worked in Abu Dhabi and Statistics New Zealand

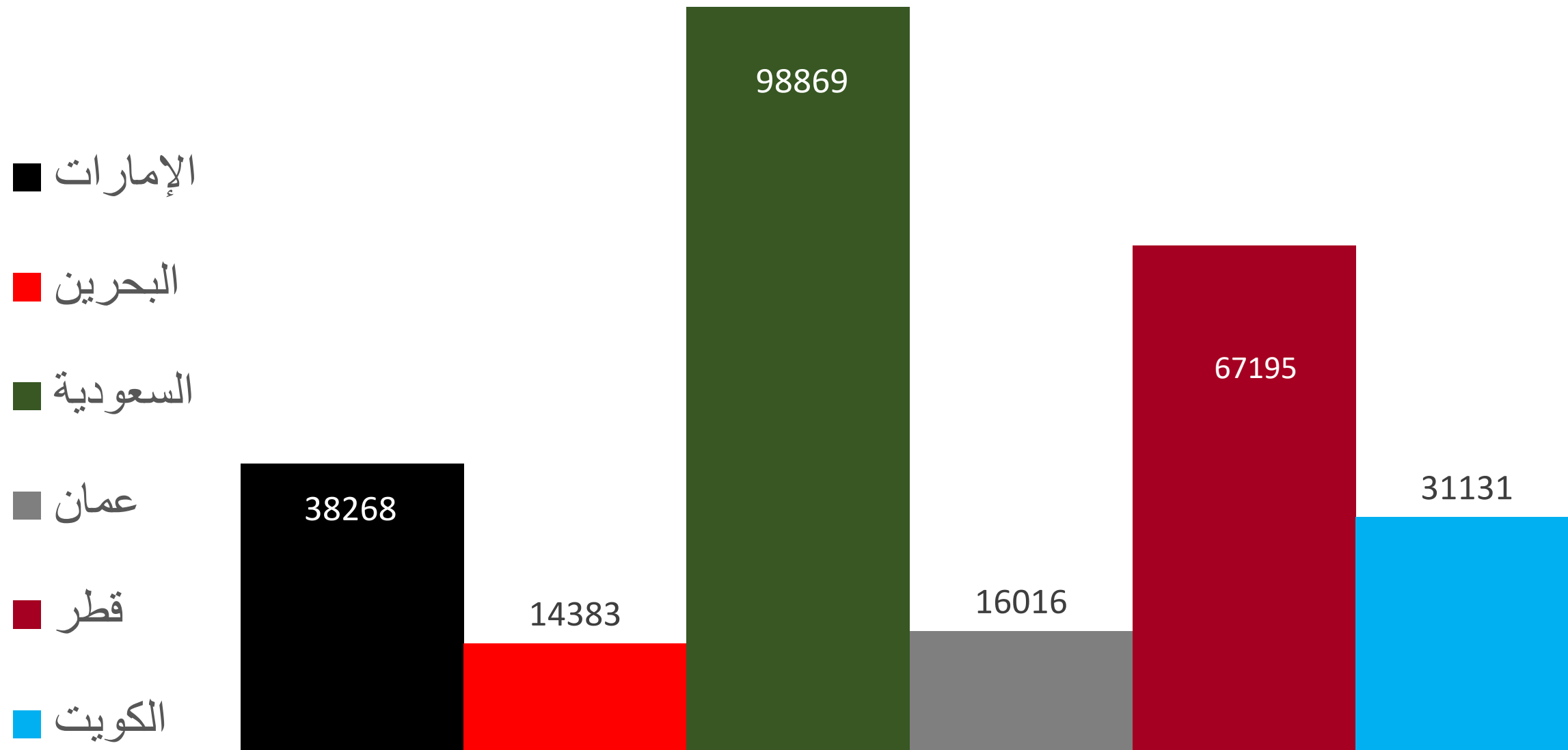
Ali Al Flaiti

Statistician in Population and Social Statistics Department, GCC-Stat. Ali joined GCC-Stat in 2015 from SQU, Health statistics.

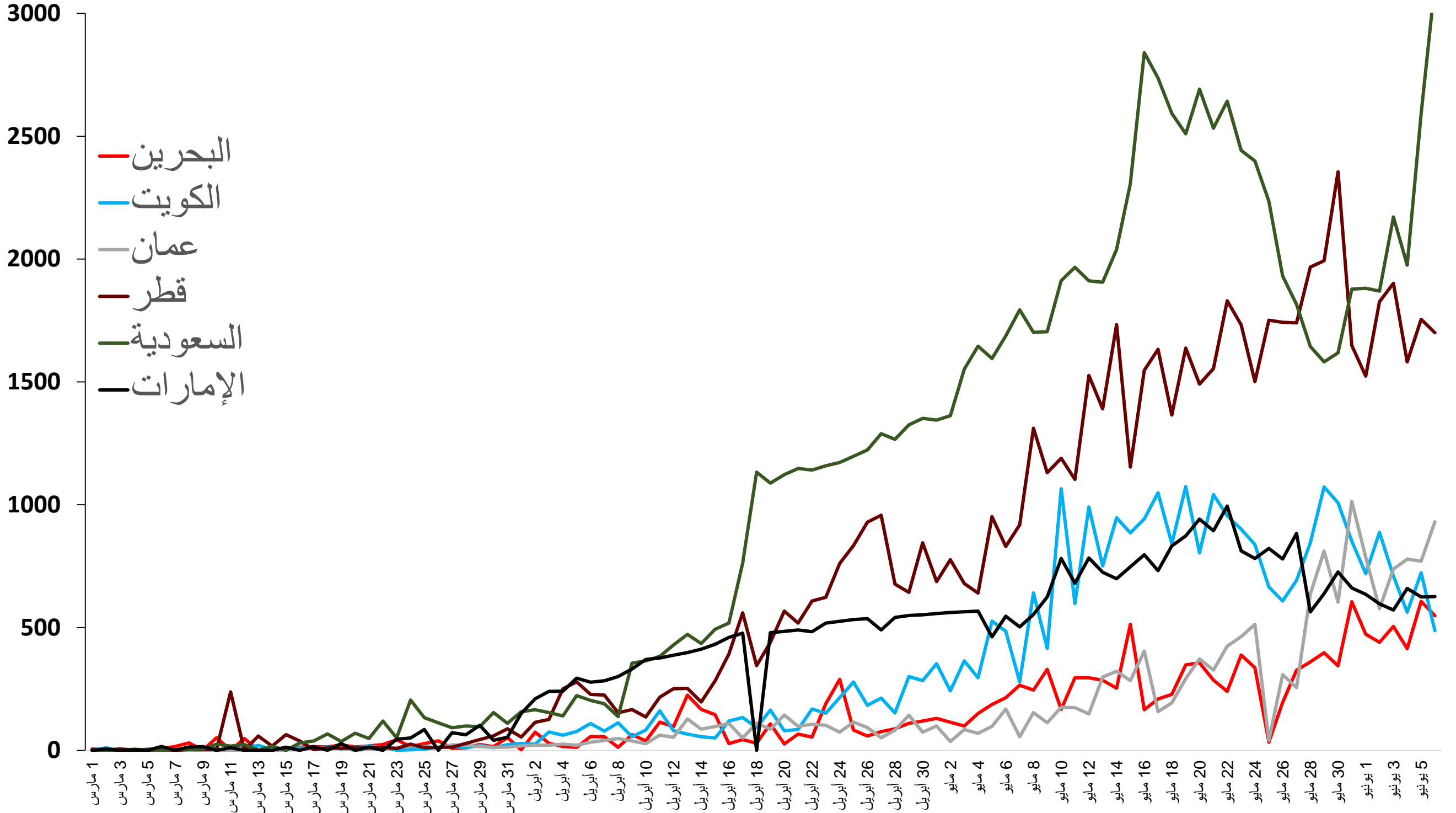


A reminder – Countries are in different stages

إجمالي الإصابات بفيروس كوفيد -١٩ في دول مجلس التعاون حتى تاريخ ٦ يونيو



الإصابات بفيروس كوفيد -١٩ في دول مجلس التعاون خلال الفترة من ١ مارس إلى ٦ يونيو





Key Concepts and Definitions

Demographic Concepts

General Epidemiological Definitions

Practice Exercise

Specific Epidemiological Definitions

COVID 19 Specific Definitions

- Statistical Populations
 - De Facto Population
 - Usual Residence Population
- Administrative Populations
- Disaggregations
 - Sub-national populations
- At Risk Populations

Definitions

Ratio Relative magnitude of two quantities or a comparison of any two values.

Proportion Comparison of a part to the whole. May be expressed as a decimal, a fraction, or a percentage.

Rate In epidemiology, a rate is a measure of the frequency with which an event occurs in a defined population over a specified period of time.

Examples

Ratio a/b or $a:b$, where a is not part of b . E.g.

- Sex Ratio,
- Dependency Ratio
- Maternal Mortality Ratio

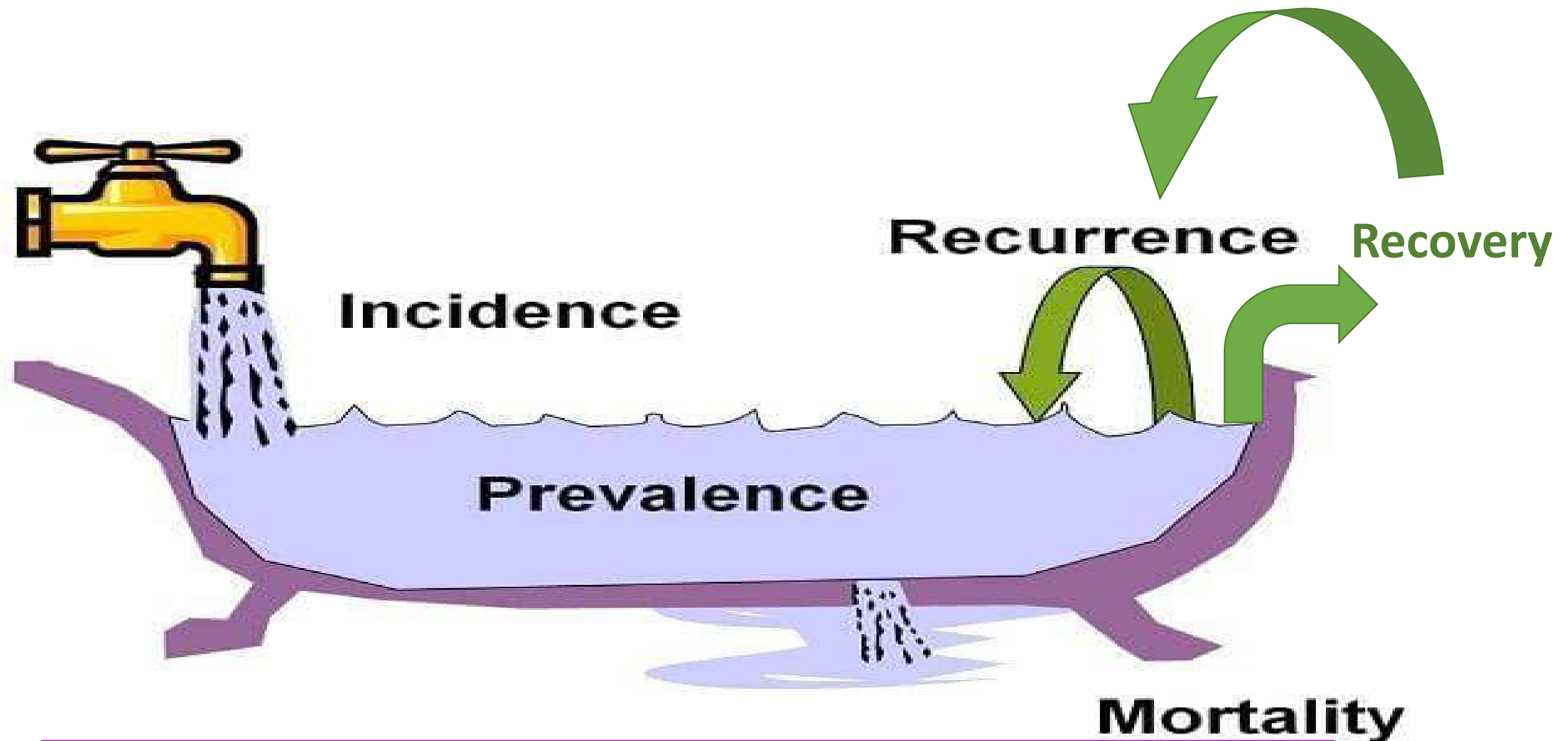
Proportion a/b , where a is part of b . E.g.

- Proportion of Males in a community
- Proportion of tradition houses from Total houses.

Rate Rate = a/b , where a is part of b in unit time

- Crude Birth Rate
- Crude Death Rate

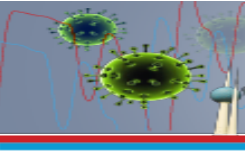
Incidence VS Prevalence



$$\text{prev**A**lence} = \frac{\text{ALL cases}}{\text{Population @ risk}}$$

$$\text{i**N**cidence} = \frac{\text{New cases}}{\text{Population @ risk}}$$

Types of Mortality Measures



- Annual Death Rate
- Specific Death Rates
- Crude Death Rates
- Infant Mortality Rates (Ratio)
- Neonatal Mortality Rates
- Post-neonatal Mortality Rates
- Perinatal Mortality Rates
- Fetal Death Rates
- Fetal Death Ratios
- Abortion Rates
- Maternal Mortality Rates
- Adjusted Mortality Rates
- Standardized Mortality Ratio
- Proportionate Mortality Rate- Case Fatality Rate
- Mortality Crossover – Mortality Time Trends



Crude Death Rate (CDR)

- **Information needed:**
 - **total deaths**
 - **total population**
 - **a given period of time**

$$\text{CDR} = \frac{\text{Total deaths per year}}{\text{Average total population of that year}} \times 100,000$$



Cause Specific Mortality Rate

$$\text{Cause specific mortality rate} = \frac{\text{Number of deaths by a certain disease for a select subgroup in a given year}}{\text{Total mortality cause population (or subgroup) in the same period (1 year) (population at risk)}} \times 100,000$$

Example : COVID -19

Does NOT account for differences of age, sex, etc. in any aspect of death

Info needed:

total deaths due to a specific Cause of Death

total population at risk

Other Disaggregation if Required

Susceptible, Incidence, Recovery

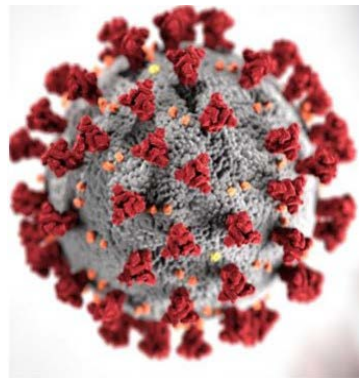


- 1. Individuals who are capable of getting the infection (called “Susceptible”)**
- 2. Individuals who have the infection and can spread it to others (called “Infected”)**
- 3. Individuals who have either recovered from the infection or are otherwise immune (called “Recovered”).**

Rapid Decision Making in difficult situations



Population related policy Questions



كوفيد 19

Pandemic



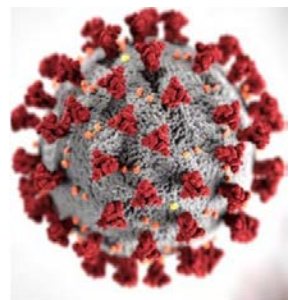
LOCK DOWN

Lock Down



Recovery

Population related policy Questions



كوفيد 19

- Who are the people in the country NOW?
- What proportion of people are sick now / might get sick in the future?
- Who are these people ? Where do they live?



LOCK DOWN

- Who are the people under lock-down, quarantine?



- What is the economic impact? Who are the people who have been affected? Where do they live?
- How is the population changing? What will it look like in the future?
 - Who are leaving/ arriving?
 - Who were the people that died? Where did they live?

De Facto Population
Usual Resident Population



At Risk Populations

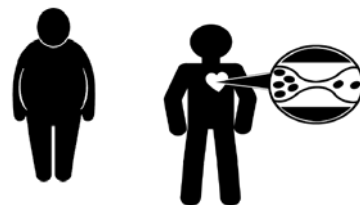
Recent Arrivals



Crowded housing



People with Health Issues



Older People



Timely,
Regular
and
Accurate

Lock down Populations



De Facto Population

Mortality Statistics (Deaths) including Cause of Death

Recent Departures - People leaving the country

All by Age, Sex, Nationality and Geographic Location

○ Sources

- Availability
- Administrative versus Statistical data
- Disaggregations

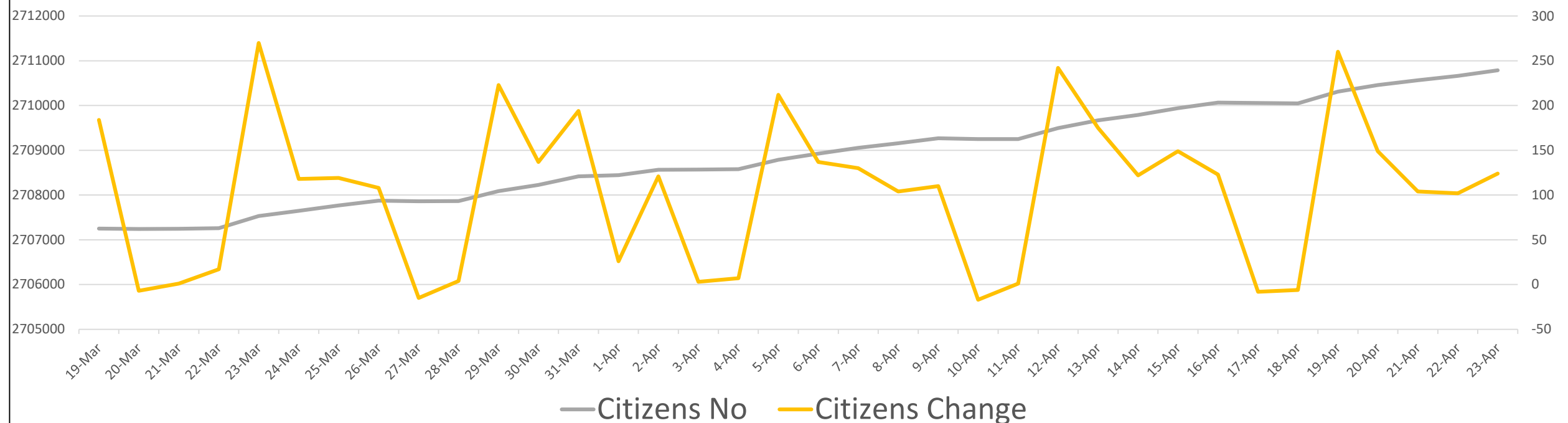
○ Statistical Processes

- Limited Flexibility limiting Responsiveness
- Timeliness
- Lack of Coherence with other sources

Administrative vs Statistical Data – an Example

12 April “Return campaign concludes, 3,746 citizens back in Oman”

Oman Citizen Population, 19 March - 23 April 2020



Source: Oman Population Clock, NCSI, Time Series and Change measures – derived – GCC-Stat

Population Clock - Daily actual number of the population in Oman as per the ROP records

Citizens criteria: Includes all alive Omanis holding an official valid document registered in the National Civil System, or even expired but for less than ten years

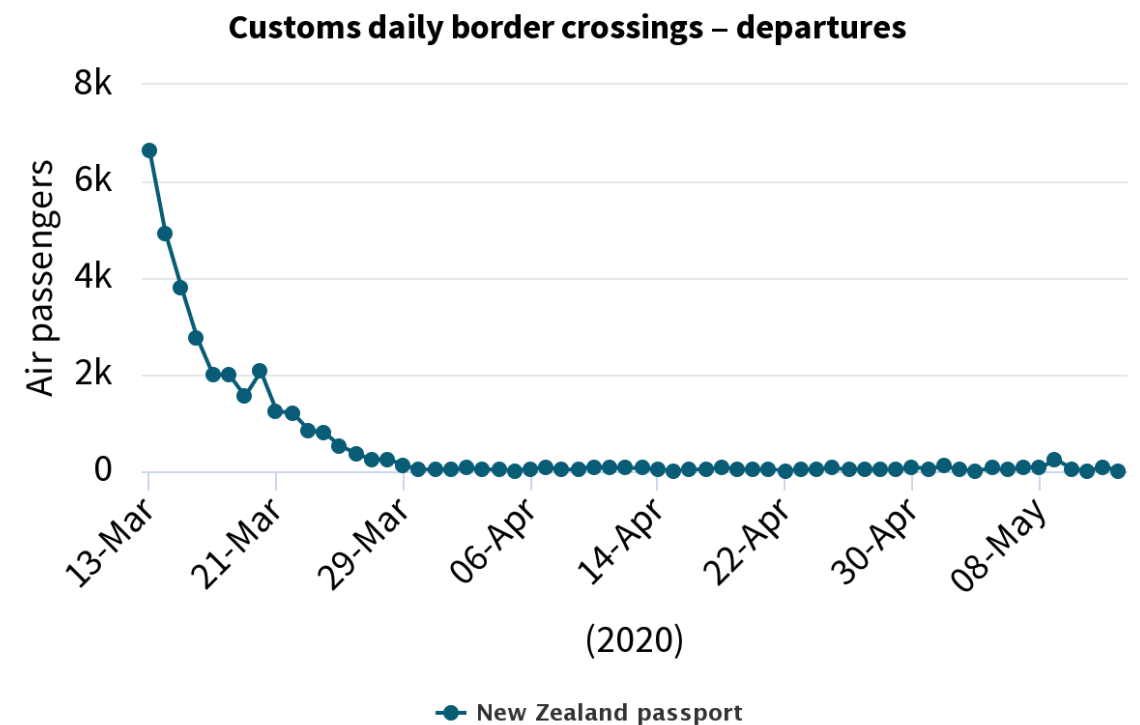
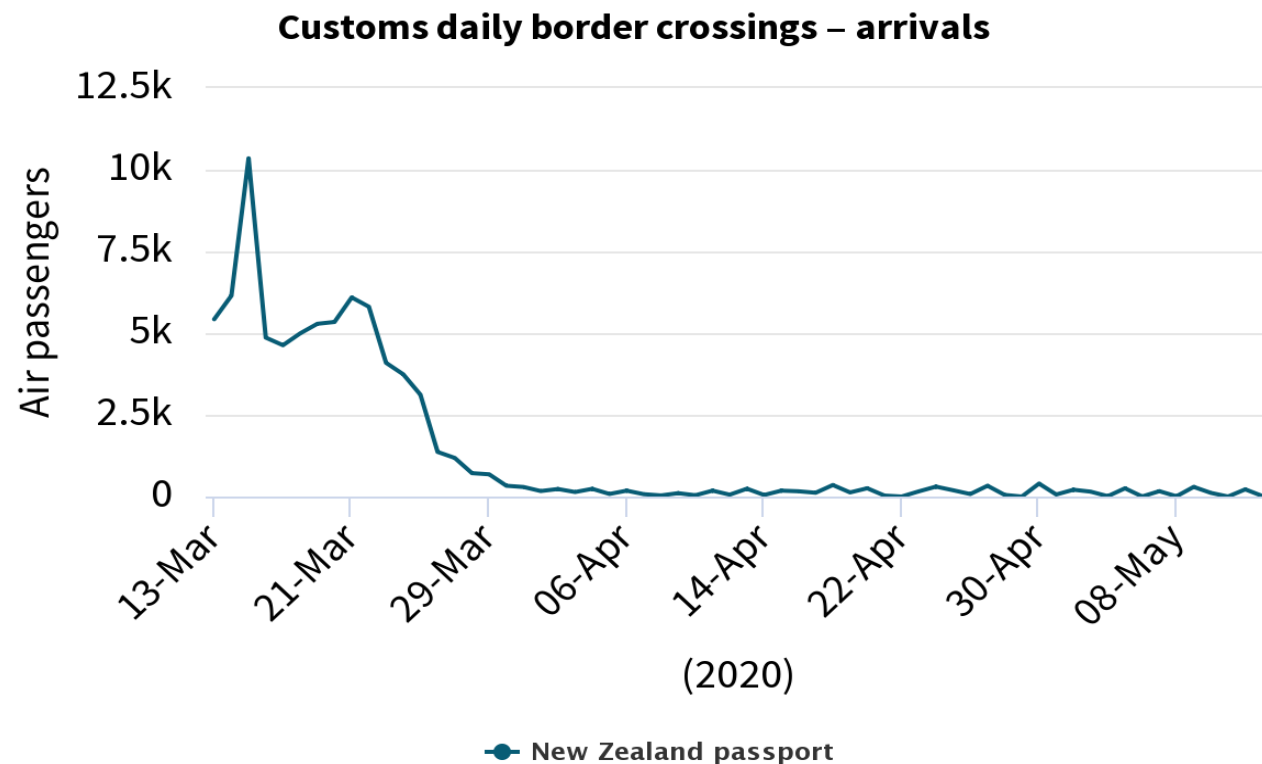
Administrative vs Statistical Data

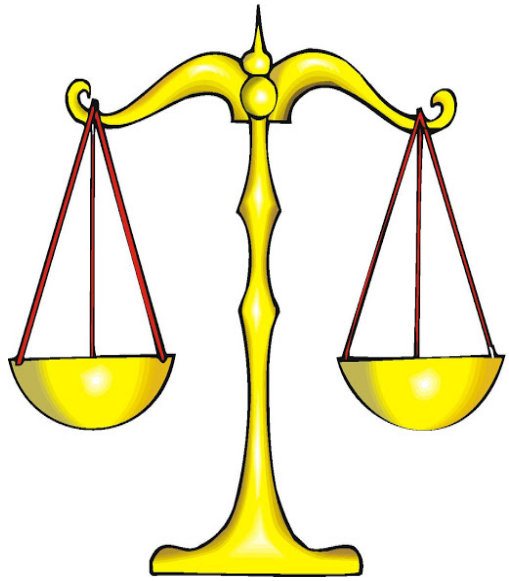
Statistical requirements

- Citizens who usually LIVE in Oman
- Citizens living in Oman at time of pandemic

Can the administrative data be converted into statistical data, eg create series which:

- Excludes people living outside of Oman
- Show arrivals and departures





Policy Issues

- Impact of pandemic and lockdown on the population, now and into the future
- Economic Recovery – is it working as planned

Statistical Needs

Structure and Characteristics of Population, now and future

- Regular De Facto and Usual Residence Population Estimates by Nationality and Geographic Location
- Regular Age Structure by Nationality, Geographic Location
- Updated Population Projections



Population Balancing Equation

$$E(P_t) = P_0 + (B - D) + M[I - E]$$

where:

- $E(P_t)$ - estimated population at period t
- P_0 is the base population – Population at period ‘ 0 ’
- B and D are, respectively, the total births and deaths occurred between ‘ 0 ’ and ‘ t ’
- M is the number of net international migrants between ‘ 0 ’ and ‘ t ’,
 - sum of (I) immigrants (people arriving) minus the number of emigrants (E) (people leaving)



$$E (P_t) = P_0 + (B-D) + M[I-E]$$

Immigrants (arriving)

Citizens returning

- Permanent
- Temporary

Residents returning

New Non-citizens arriving

Emigrants (leaving)

Citizens departing for long term study/
employment, etc

Non-citizens returning home
(permanently or for long term)

Excludes Tourists, Business Travellers, Military, Air/Ship Crew etc,
In and Out

Statistical Migration - **not** same as Administrative Migration

$$E(P_t) = P_0 + (B-D) + M[I-E]$$

Immigrants (arriving)

Citizens returning



- Permanent
- Temporary

Residents returning



New Non-citizens arriving



Emigrants (leaving)

Citizens departing for long term study/
employment, etc



Non-citizens returning home
(permanently or for long term)



How many ?

Population Characteristics ?

Impacts on Population structures ?



Measurement Challenges – Births

$$E(P_t) = P_0 + (B-D) + M[I-E]$$



Pop. 2017,
54.9 million

Natural increase
contribution by
73%



Pop. 2018,
56 million

BUT



Marriages



2020



Delayed
Marriage



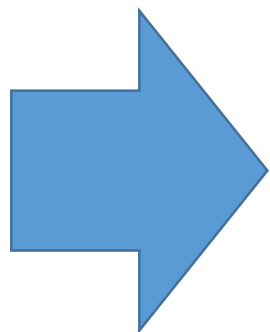
Decrease in
Marriage



Crisis
effect*



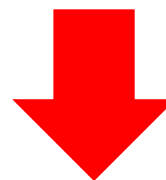
Non-citizens
leaving



Births



2020



2021



?

2022

* International Literature shows that Crisis 'Delay' Births (Stone, 2020)



Measurement Challenges – Deaths

$$E(P_t) = P_0 + (B-D) + M[I-E]$$



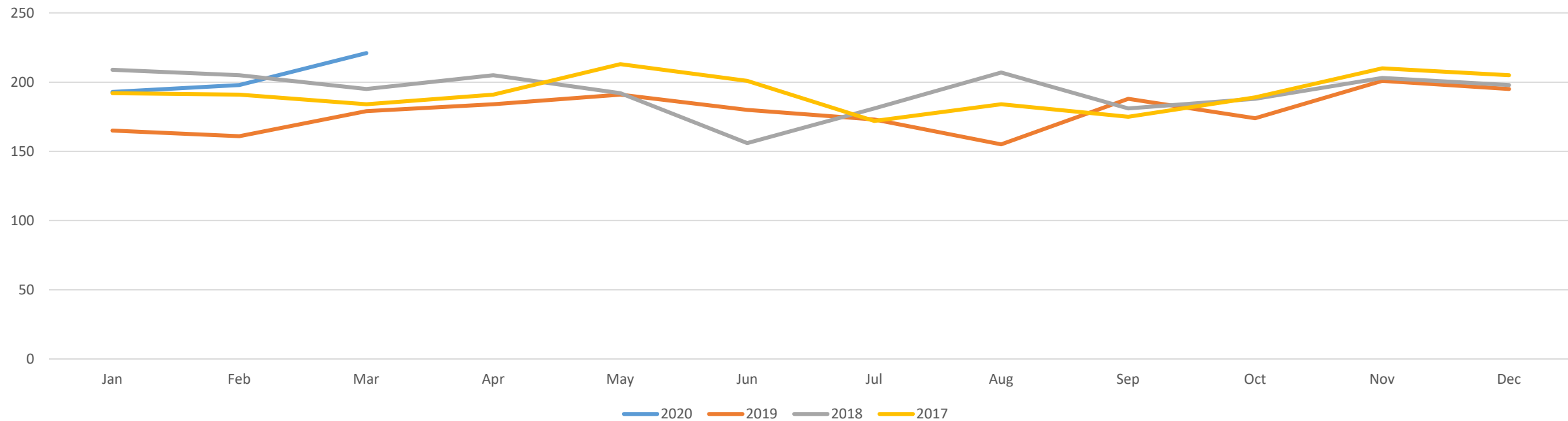
Deaths



2020

Although RTAs declined during Lockdown

Monthly Deaths, Qatar 2017 -2020



Data from Planning and Statistics Authority, Qatar – Monthly reports, Series derived by GCC-Stat

BUT

Reporting issues in some countries

Causes of Death – Recording Cause of Death

	Cause of death	Approximate interval between onset and death
<p>I Disease or condition directly leading to death*</p> <p>Antecedent causes Morbid conditions, if any, giving rise to the above cause, stating the underlying condition last</p>	<p>(a)</p> <p>due to (or as a consequence of)</p> <p>(b)</p> <p>due to (or as a consequence of)</p> <p>(c)</p> <p>due to (or as a consequence of)</p> <p>(d)</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>II Other significant conditions contributing to the death, but not related to the disease or condition causing it</p>	<p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p>
<p><i>*This does not mean the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.</i></p>		

Causes of Death – Classification

Classification of Cause of Death - ICD International Statistical Classification of Diseases

Chapter	Block	Title
I	A00–B99	Certain infectious and parasitic diseases
II	C00–D48	Neoplasms
III	D50–D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
IV	E00–E90	Endocrine, nutritional and metabolic diseases
V	F00–F99	Mental and behavioural disorders
VI	G00–G99	Diseases of the nervous system
VII	H00–H59	Diseases of the eye and adnexa
VIII	H60–H95	Diseases of the ear and mastoid process
IX	I00–I99	Diseases of the circulatory system
X	J00–J99	Diseases of the respiratory system
XI	K00–K93	Diseases of the digestive system
XII	L00–L99	Diseases of the skin and subcutaneous tissue
XIII	M00–M99	Diseases of the musculoskeletal system and connective tissue
XIV	N00–N99	Diseases of the genitourinary system
XV	O00–O99	Pregnancy, childbirth and the puerperium
XVI	P00–P96	Certain conditions originating in the perinatal period
XVII	Q00–Q99	Congenital malformations, deformations and chromosomal abnormalities
XVIII	R00–R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
XIX	S00–T98	Injury, poisoning and certain other consequences of external causes
XX	V01–Y98	External causes of morbidity and mortality
XXI	Z00–Z99	Factors influencing health status and contact with health services
XXII	U00–U99	Codes for special purposes

INTERNATIONAL GUIDELINES FOR CERTIFICATION AND CLASSIFICATION (CODING) OF COVID-19 AS CAUSE OF DEATH Based on ICD International Statistical Classification of Diseases

<https://www.who.int/classifications/icd/covid19/en/>

Arabic and English



Current Population Estimates – struggling to keep up with rapidly changing Demographic landscape, eg

- Citizens returning
- Non-citizen population departing
- Declines in births in 2021 and possibly late 2020
- Increases in Deaths (COVID and non-COVID)

But

- Have all Vital events (Births, Marriages, Divorces, Deaths overseas) been recorded during lock-down/quarantine?
- Has COVID impacted all parts of the population in the same way?

And

What will be the impact on

- Age distribution
- Citizen/non citizen ratios
- Sub-national population estimates
- Base Population measures for core indicators such as SDGs, GDP/per capita, etc

Additional Challenges for Projections

- Impact on Future fertility patterns if economic crisis is long and deep
- Long term scenarios for non-citizen population

Possible solutions

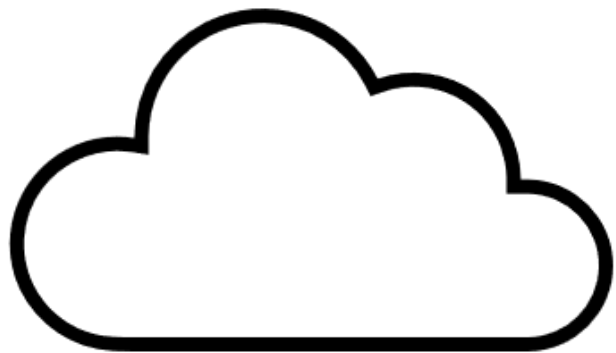
Flash (Model based) estimates, based on alternative sources

+

Census to validate assumptions and models, and provide accurate sub-national and small area data

+

Demographic research – eg linking Census and Death records
Migration research
- multiple scenarios for Projections



Every Cloud has a silver lining



- Updating Administrative Data practices
- Updating NSO systems, processes and practices, including demographic assumptions
- Fully follow the UN Principles and Recommendations for a Vital Statistics System, Revision 3



Opportunities

- Working with partners, eg
 - Agencies providing administrative data
 - Possible additional data providers (eg electricity companies)
 - Alternative /Complimentary data sources, eg Mobile phone data, other Big Data sources
- Identify options for phone and internet surveys
- Implications for 2020 Census
 - Topics, Outputs
- Enhanced Demographic Analysis
 - Quarterly Population Estimates (by location and disaggregation)
 - Integration of Vitals and Census data
 - Improved Migration statistics



Questions



Resources and Sources

- **GCC-Stat**

COVID 19 Portal –

<https://geogcc.gccstat.org/portal/apps/opsdashboard/index.html#/486bcba10d4643e48c5d067e161e99d7>

<https://geogcc.gccstat.org/portal/apps/opsdashboard/index.html#/917d2690711b402192af82b7398e470c>

COVID reports (Arabic) - <https://www.gccstat.org/ar/statistic/publications/covid-19>

- **NCSI** Oman Population Clock - <https://www.ncsi.gov.om/Pages/NCSI.aspx>

- **Planning and Statistics Authority**, Qatar Monthly Statistics

<https://www.psa.gov.qa/en/pages/default.aspx>

- **Statistics New Zealand** COVID 19 Portal

<https://www.stats.govt.nz/experimental/covid-19-data-portal>

- **UNSD** Maintaining Civil Registration and Vital Statistics during the COVID-19 pandemic [https://covid-19-response.unstatshub.org/statistical-](https://covid-19-response.unstatshub.org/statistical-programmes/maintaining-crvs/)

[programmes/maintaining-crvs/](https://covid-19-response.unstatshub.org/statistical-programmes/maintaining-crvs/)

- **UNSD** Principles and Recommendations for a Vital Statistics System, Revision 3

<https://unstats.un.org/unsd/demographic/standmeth/principles/M19Rev3en.pdf>

- **WHO** guidelines on COVID death classification

<https://www.who.int/classifications/icd/covid19/en/>



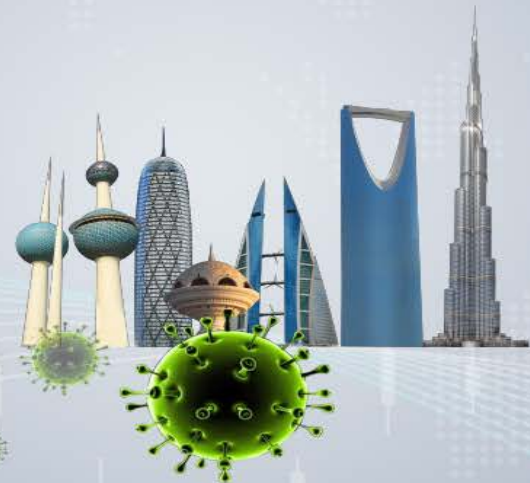
Impact of COVID19 on Population and Social Statistics – Webinar Series

Impacts on Population and Social Statistics	15 June	أثر جائحة فايروس كورونا المستجد على الإحصاءات السكانية و الاجتماعية
New User Needs	16 June	الاحتياجات الجديدة للمستخدم
Impacts on Existing Statistics	22 June	التأثيرات على الإحصاءات القائمة
Making sure outputs are easy to use	23 June	التأكد من أن المخرجات سهلة الاستخدام

خليك بالبيت

ونسال الله السلامة للجميع

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في إدارة الجودة



شهادة الأيزو 27001
في أمن المعلومات