



health

Department:
Health
REPUBLIC OF SOUTH AFRICA

COVID-19 Occupational Health Surveillance System (OHSS) for South African Workplaces

19 October 2020

OHSS Data Submission

The OHS system consolidates data from various sources and process this data to achieve a set of key outcomes



Data Sources

- Private sector businesses
- Public sector
- NICD - NMC and sentinel hospital admissions database (DATCOV)
- NHLS laboratory testing data
- Private laboratory testing data
- Compensation Fund
- National Department of Health
- Department of Employment and Labour
- Mining Sector



Data Sets

- Vulnerability assessment data
- Symptom screening data
- Positive case data
- Return to work data



Storage & Analytics

- NIOH data lake
- Anonymised



Outcomes

- Summary of COVID-19 indicators per industry
- Identification of high-risk employees
- Identification of high-risk areas (Geographically)
- Identification of high-risk industries and occupations
- Identification or probability of work-related outbreaks

Occupational Surveillance System Business Registration: Workflow

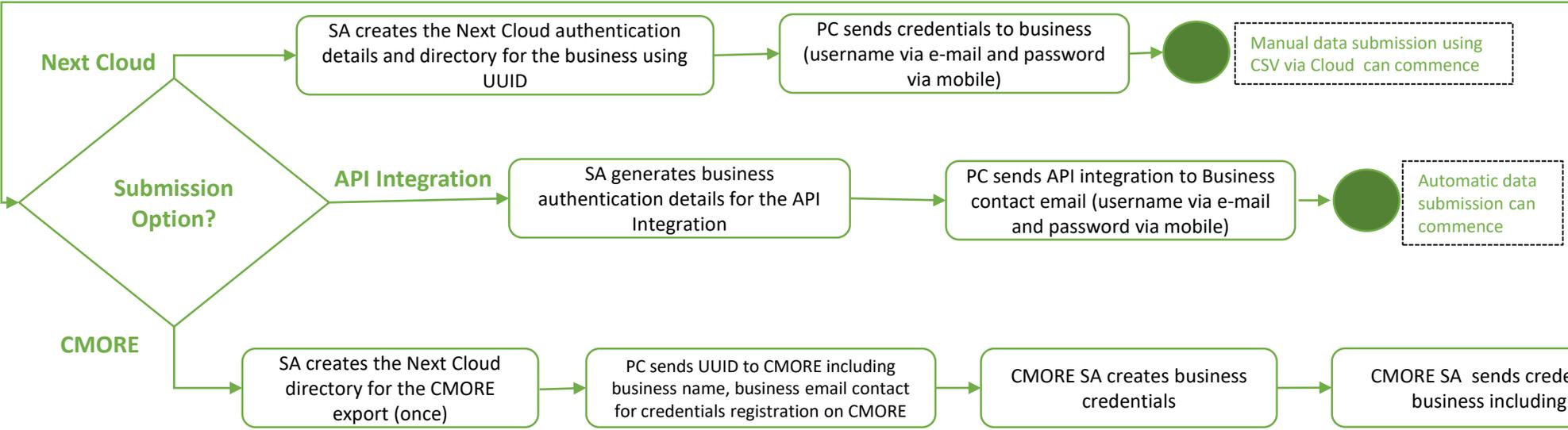
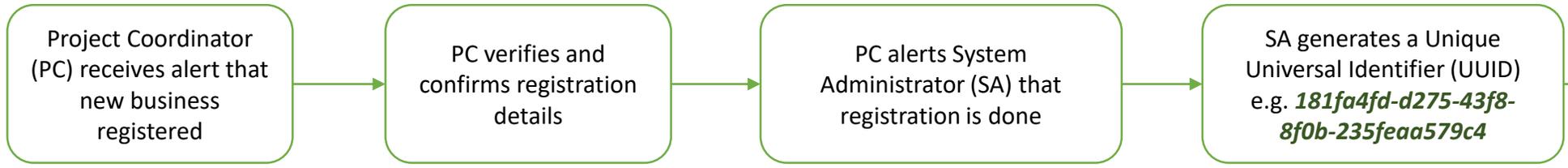
This is a workflow for registering a business for submitting the COVID-19 OHS to NIOH or CMORE (CSIR)

The following details are provided in the portal

- Business name
- Business industry
- Business address**
- Business province**
- Business district**
- Employee numbers
- Female employees
- Male employees
- Business contact
- Contact email
- NDA Signed
- Sector affiliation
- Submission Option:
 - | CSV via Next Cloud
 - | API Integration
 - | CMORE platform submission

Business contact accesses portal to register electronically

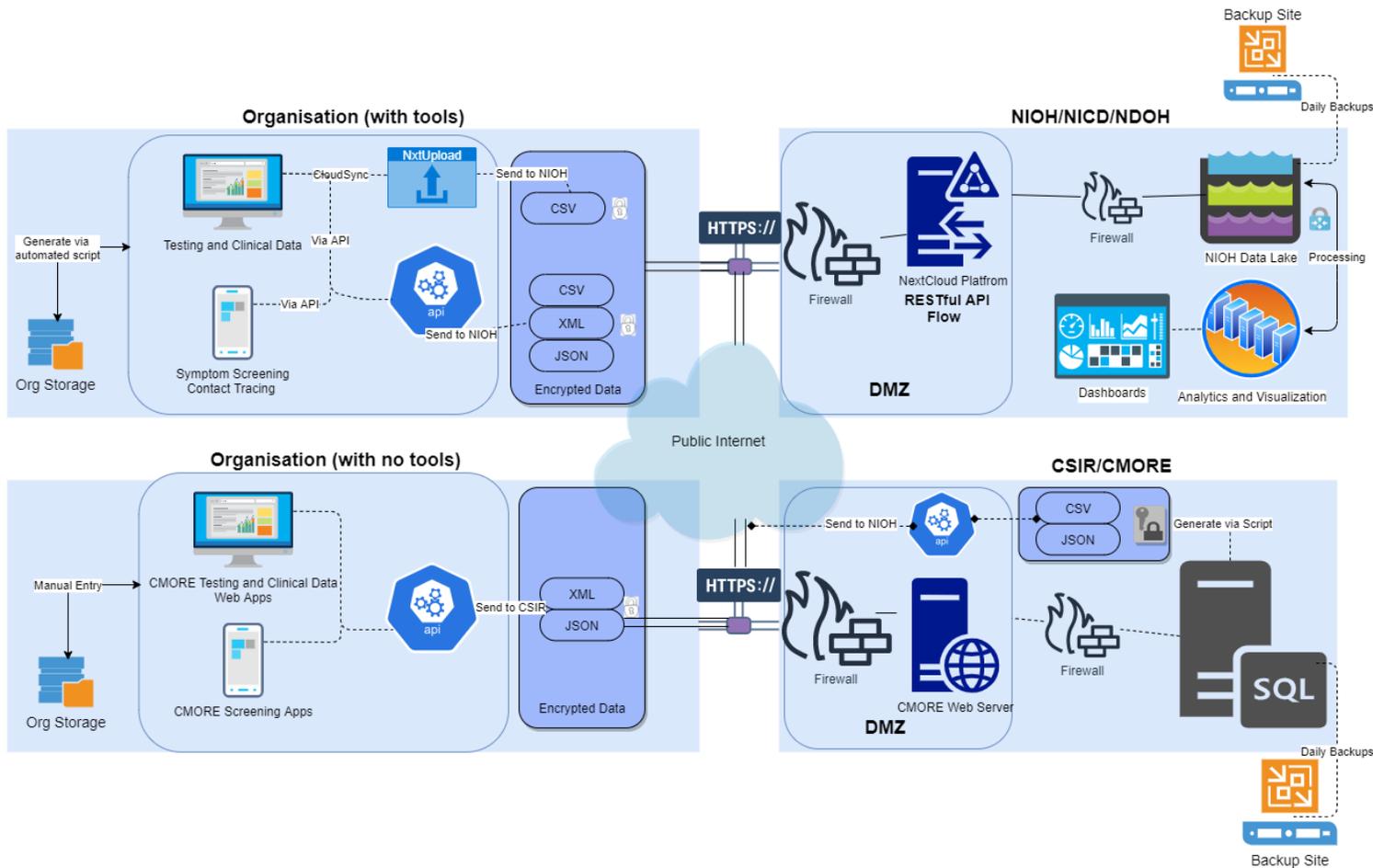
<https://ohss.nioh.ac.za>



Note:

- Data flow after registration covered by a separate process:
 - Next Cloud to Data Lake
 - CMORE to Next Cloud

High-level Architecture for OHSS



Organizations with no tools

- ✓ Manual Submissions (Next Cloud)
- ✓ CSIR CMORE

Organizations with tools

- ✓ API integration
- ✓ Next Cloud integration

Data Lake

- ✓ Database (SQLServer)
- ✓ Automated Extraction
- ✓ API Integration

Data Analytics and Visualization

- ✓ Google Studio Dashboards
- ✓ Descriptive Analytics
- ✓ Integration with external data sources

Occupational Surveillance System Business Registration: Web Portal (see: <https://ohss.nioh.ac.za/Register>)

The businesses registers via a web portal where all the required details for the organisation can be submitted.

Once a business has been approved by NIOH for data submission, they will receive login credentials to use the system of the choice for submission (semi-manual, API integration or CMORE)



Occupational Health
Surveillance System



Business Registration 

Business Name Industry

Address

Province District

Contact Name Contact Email

Contact Number Sector Affiliation Non Disclosure Consent

Total Employees # Female Employees # Male Employees

Please supply the number of employees in the below Job Categories

| | | | |
|--|---|--|---|
| # Managers <input type="text" value="0"/> | # Professionals <input type="text" value="0"/> | # Technicians and Associate Prof. <input type="text" value="0"/> | # Clerical Support Workers <input type="text" value="0"/> |
| # Service and Sales Workers <input type="text" value="0"/> | # Skilled Trades <input type="text" value="0"/> | # Plant and Machine <input type="text" value="0"/> | # Elementary Occupations <input type="text" value="0"/> |

Preferred data submission process

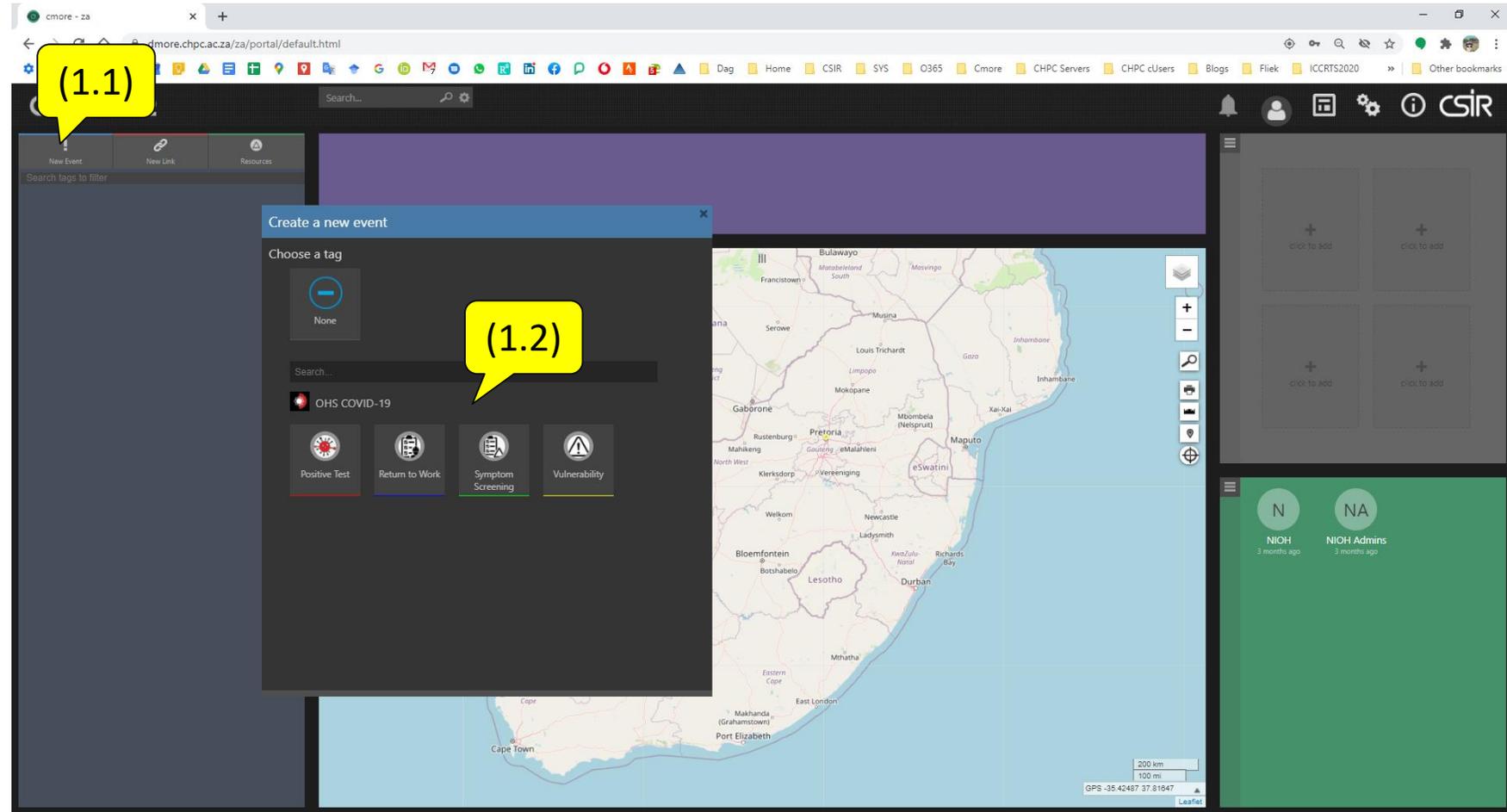
API Integration CSV via NextCloud CMORE platform submission

I have read and accepted the Occupational Health Surveillance System [Terms & Conditions](#)

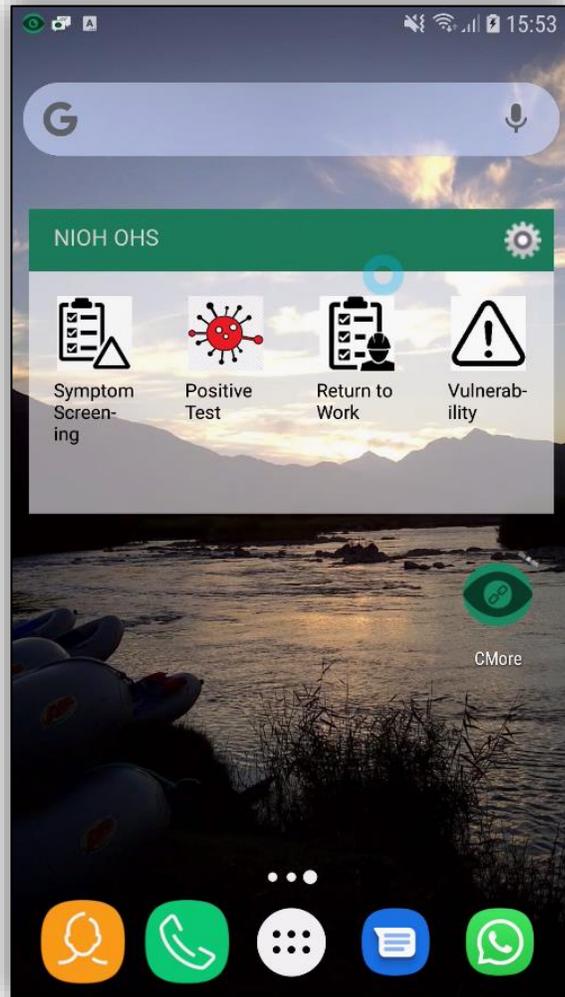
1. Business will choose a preferred option for data submission (3 options available)
2. Username and password will be sent to the contact person in the organization via SMS or WhatsApp
3. Submissions preferred weekly

Cmore Web app

1. To enter a data record
 1. Tap on New Event
 2. Select the appropriate tag
2. Once all data populated, submit the record to the Cmore server by clicking Create Event.
3. Records with a position will display on the map.
4. Records without a position will not be visible on the map, but could be viewed under Event View.
5. Operators will only see data they submitted, not that from other operators
6. CSIR will manage records to ensure maximum resources available for record submission.



Cmore Mobile app



1. Install Cmore Mobile app from Google Play Store
<https://play.google.com/store/apps/details?id=csir.cmore.adapter&hl=en>
2. When logging in first time, select the Dmore CHPC server by tapping Cmore Africa
3. Allow app access requests and usage tracking
4. User credentials will be made available via email or otherwise (when bulk registration is used)
5. Tap on a tag short cut to enter a data record
6. Enter the data and tap save to submit the record to the Cmore server

Data Privacy and Security

1. Data privacy, confidentiality and security is the cornerstone of all the digital data submission options
2. All businesses are identified through Unique Business IDs
3. All businesses submit data to their own workspace (no sharing of data and workspace)
4. API data submission via encrypted channels
5. Data is stored in a secure Data Lake (NIOH)
6. No personal data is being processed by the tools (except email addresses)



Confidentiality

- Data in the data lake will be anonymised and any identifying information removed after a period of 6 weeks.
- All OHSS data collected by NIOH will be securely stored and processed in the NIOH data centre.
- All systems used for data collection, storage, and processes will be **assessed on regular basis** (every month) for any security vulnerabilities.

Thank You

Email: OHSworkplace@nioh.ac.za

Web Portal: <https://ohss.nioh.ac.za>