

Integration of Birth And Death with Other Services

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Abstract- Civil registration is a continuous, permanent, compulsory recording of the occurrence and characteristics of vital events, like birth, death, marriages etc. The primary objective of this is to give awareness about the government or legal documents and its registration details as well as to help the registrar to apply for those documents. This also act as a consultancy agency to assist the public. The main purpose of the website is to reduce the effort of the candidate and save his/her time and also avoid unwanted rushes at the Government offices and assure a smooth working schedule at government offices. The essential inspiration driving the site is to reduce the effort by the user and reduce his time and avoid bothersome floods at the organization work environments and certification a smooth working timetable at government working environments. The generation of death certificate stops the services such as Aadhar card, PAN card, Driving License, other related RTO services, Bank account, etc., that are given to the corresponding person

I. INTRODUCTION

Pursuing a Digital Bangladesh goal by 2021, the government has introduced online birth registration system (BRIS) in the country in October 2010, and with that manual registration system was abolished. There are about 5082 register offices which are acting as online birth & death registration registration offices. The key statistics such as the total number of birth registrations and number of birth registrations per hour can be obtained from the website in real time. Recently, the Office of the Registrar General of Birth and Death Registration was established and there are more than 140 million birth records and about 300 thousand death records in the national online registration system. The office of the Registrar General collects information from the applicants and verify the information through local representatives for registrations, as part of the registration process following receipt of application from the parents or individuals.

The parents, in general, do not feel the need for birth registration of their children until school enrollment. This explains why birth registration rate is only 3% before 45 days which the law requires. A child's first immunization, which takes place within 45 days of birth during community vaccination session or in health clinic, could be a good opportunity for registering the birth of the child. However, strict enforcement of this practice may deter child protection through vaccination. However, health system can play a

significant role in notifying the births as they take place either in the hospital or clinic premises or in the knowledge of community health workers. After getting the notification, the Office of the Registrar General can initiate the registration process to ensure early registration of the births. The health staffs and community health (and family planning) workers can also play a vital role in death notification and proper entry of ICD10 based cause of death. The need of strong coordination between health system and local government for strengthening It opens up a world of health care. Every year, millions of children die from preventable diseases before they reach the age of five. Unregistered children are often unable to gain access to health care services or pay more for those services than a registered child. But a birth certificate means a child can access medical treatment and the vaccinations he or she needs to stay healthy.

It means an education. Without birth registration, a child can be kept from participating at school. But with a birth certificate, a child will have the necessary documentation needed to enroll in publicly funded schools.

It can provide protection. Without identification, government officials have no documentation of a child's existence. As a result, the law is incapable of protecting children from crimes and abuse. But effective birth registration protects children and provides them with their legal rights.

It can help provide an inheritance. If an unregistered child's parents pass away, they need to legally prove they are related to inherit their family property. But with birth registration, a child will have the legal proof of their family ties, ensuring they receive what belongs to them.

It creates a permanent record of existence. If a disaster strikes and a child is separated from his or her family, a reunion could be next to impossible without proper identification. But with birth registration, government officials can safely unite families and prevent any child from going unaccounted for.

The first step in registering a birth is by visiting the Town Panchayat or by visiting a common service centre (CSC) of TN Government. In case of an application for a birth

certificate in Chennai, visit the respective Zonal Assistant Health Officer (or) Birth and Death Registrar.

The person who is applying for the certificate has to carry the required documents at the time of applying the certificate. Normally identity and address proof of parents will be required.

After receiving the application form, the following details have to be entered such as Name of the child, Parents Name, Gender of the child, Date of Birth, Place of Birth. Once the form is duly completed, the form has to be submitted to the town panchayat or the concerned office. The applicant has to furnish additional documents, if required.

There is no requirement of furnishing any documents if the medical institution or hospital have already informed the municipality office regarding the birth. If the municipality has not informed of the birth, the head of the family or any nearest relative must register the birth. The birth has to be registered by submitting a certificate that is issued by the person or medical institution who has conducted the delivery. If a birth has occurred in a medical institution, the registration will be handled by the institution.

II. RELATED WORK

Citizens can access Birth / Death Certificates based on the request submitted in CSC / MeeSeva centers. The certificates will be issued after verification of the details by the concerned officers from hospitals and ward offices. They verify the records and enter / update with digitally signed birth / death details in a module based on the request submitted by the citizen. Citizens can get birth and death certificates delivered to them quickly. Citizens can get their records updated. Through this website, they can check whether or not their name is registered. Birth certificate can be had at the ward of the concerned area if applied within two years from the date of birth. Birth certificate can be had from the concerned circle office of GHMC if the birth is more than two years old. Birth certificate can be had from GHMC if the birth registration enters into GHMC records. Citizens can collect their certificates instantly from Citizen Service Centers or mee-Seva centers.

The history of Civil Registration System (CRS) in India dates back to the middle of the 19th century. In 1886 a Central Births, Deaths and Marriages Registration Act was promulgated to provide for voluntary registration throughout British India.

Post-independence, the Registration of Births and Death Act (RBD Act) was enacted in 1969 to promote uniformity and comparability in the registration of Births and Deaths across the country and compilation of vital statistics based thereon. With the enactment of the Act, registration of births, deaths and still births has become mandatory in India. The Registrar General, India (RGI) at the Central Government level coordinates and unifies the activities.

- In the existing system, each and every candidate has to take many application forms required for the Registration Process.
- The project Civil Registry still requires more development of IT solutions and its Applications to improve the issuance of copies of government certificates and legal documents.
- Although the Civil Registration is a Basics for the Birth, Death and for other Certificates, It does not allow the citizens to Cancel the Services when he/she Dies, which can Mislead to Fraudulent.
- There is no requirement of furnishing any documents if the medical institution or hospital have already informed the municipality office regarding the birth.
- If the municipality has not informed of the birth, the head of the family or any nearest relative must register the birth.
- The birth has to be registered by submitting a certificate that is issued by the person or medical institution who has conducted the delivery.
- If a birth has occurred in a medical institution, the registration will be handled by the institution.

of registration throughout the country. However, implementation of the statute is vested with the State Governments. The registration of births and deaths in the country is done by the functionaries appointed by the State Governments. Directorate of Census Operations are the subordinate offices of Office of the Registrar General, India and these offices are responsible of monitoring of working of the Act in their concerned State/UT.

A well-functioning civil registration and vital statistics (CRVS) system registers all births and deaths, issues birth and death certificates, and compiles and disseminates vital statistics, including cause of death information. It may also record marriages and divorces. Despite the well-documented benefits of CRVS, many countries do not have adequate systems in place. The births of tens of millions of children are known to be unregistered every year, and it is estimated that two-thirds of deaths are never registered and are thus not counted in the vital statistics system.

Tools, standards and publications to support countries in developing and understanding of the strengths and weaknesses of their civil registration and vital statistics system with a focus on births, deaths and causes of death.

The DQR framework and toolkit is meant to support routine, annual and periodic independent assessments of facility-reported data. It is designed to assess the quality of data generated by information system(s) based in health facilities, and includes guidelines and tools that lay the basis for a common understanding of data quality. In addition, it promotes the institutionalization of data quality review in country. The toolkit which includes guidelines and associated tools is organized into 3 distinct modules.

.NET Framework (pronounced as "dot net") is a software framework developed by Microsoft that runs primarily on Microsoft Windows. It includes a large class library named Framework Class Library (FCL) and provides language interoperability (each language can use code written in other languages) across several programming languages. Programs written for .NET Framework execute in a software environment (in contrast to a hardware environment) named Common Language Runtime (CLR), an application virtual machine that provides services such as security, memory management, and exception handling. As such, computer code written using

.NET Framework is called "managed code". FCL and CLR together constitute the .NET Framework.

FCL provides user interface, data access, database connectivity, cryptography, web application development, numeric algorithms, and network communications. Programmers produce software by combining their source code with .NET Framework and other libraries. The framework is intended to be used by most new applications created for the Windows platform. Microsoft also produces an integrated development environment largely for .NET software called Visual Studio. 43

.NET Framework began as proprietary software, although the firm worked to standardize the software stack almost immediately, even before its first release. Despite the standardization efforts, developers, mainly those in the free and open-source software communities, expressed their unease with the selected terms and the prospects of any free and open-source implementation, especially regarding software patents. Since then, Microsoft has changed .NET development to more closely follow a contemporary model of a community-developed software project, including issuing an update to its patent promising to address the concerns.

.NET Framework led to a family of .NET platforms targeting mobile computing, embedded devices, alternative operating systems, and web browser plug-ins. A reduced version of the framework, .NET Compact Framework, is available on Windows CE platforms, including Windows Mobile devices such as smartphones. .NET Micro Framework is targeted at very resource-constrained embedded devices. Silverlight was available as a web browser plugin. Mono is available for many operating systems and is customized into popular smartphone operating systems (Android and iOS) and game engines. .NET Core targets the Universal Windows Platform (UWP), and cross-platform and cloud computing workloads.

When an application is first launched, the .NET Framework compiles the CIL code into executable code using its just-in-time compiler, and caches the executable program into the .NET Native Image Cache. Due to caching, the application launches faster for subsequent launches, although the first launch is usually slower. To speed up the first launch, developers may use the Native Image Generator utility to manually ahead-of-time compile and cache any .NET application. The garbage collector, which is integrated into the environment, can introduce unanticipated delays of execution over which the developer has little direct control. "In large applications, the number of objects that the garbage

III. METHODS

CRVS system keeps track of the inhabitants such as children for vaccination and it is the basis for making evidence-based policy and planning which is useful for the government. The generated statistics can give more detailed evidence on sub-national areas which is not possible to obtain from sample surveys. Regular registration of vital events is an alternative to less frequent and costly population census. CRVS is essential in national policy-making such as identifying the needs for investments in infrastructure and setting up priorities in education and health sectors, or for ownership of land. A variety of actors are implicated in the recording, notification and registering of these vital events, as well as in the use of the output of the system. Coordination and governance of various institutions and actors is a key challenge to build an effective CRVS system.

Registration and log in

The working of Civil Registry is as when any new user need to issue specific government certificate he/she have to register them self with this web site. For registration to this web site person needs to fill their personal details along with their one photo. Once registration is successful one link will be send to user's mail id which specifies user registration is successful. Once user successfully login to Civil Registry

website by using his/her mail id and password that person can login to Civil Registry website at any time and able to select specific government certificate from the list present in website. Once the registration gets over the respective people should get the notification/alert regarding the vaccination for the newly born child.

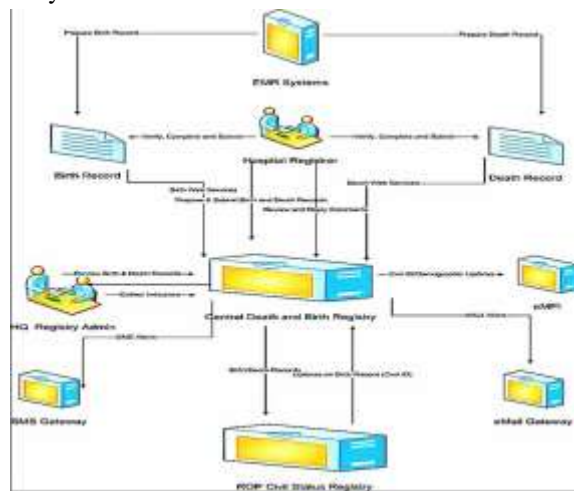


Figure 1.1

The person can create a new user id and password by specifying the details such as Aadhar card number, phone number, address of the registrar, email id, etc. The details of the registered user are present in the admin database and the admin can verify whether the registered user is valid or not by using their Aadhar card verification system. The admin can login to the system at anytime by using their admin login id and the password.

The user can login at any time from anywhere by using their user id and password. The corresponding user who has registered their details in the integration system can see any kind of notifications that has been provided by the admin and they can also apply for birth certificate, death certificate, marriage certificate, divorce certificate, PAN card, License, water, electricity, Voting rights, etc.

The registration of birth certificate provides the notification for vaccination including the details of the vaccine that has to be given to the child at a regular period. The registration of death certificate stops the services of the corresponding person whose death certificate is registered. The services such as PAN card, license, passport, Aadhar, electricity, voting is stopped.

The user id and password of the corresponding registered user are stored in the database which is viewed and controlled by the admin of the database. These databases are secured and it is under the governance of the admin of the integration of birth and death system.

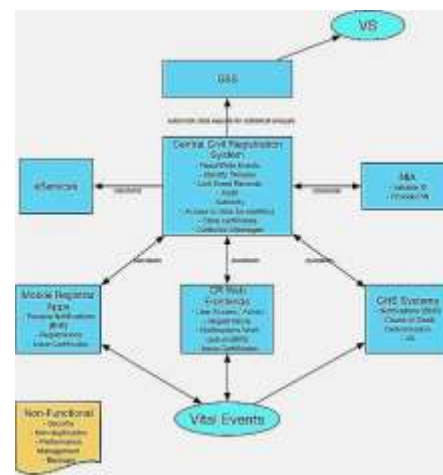


Figure 1.2

The admin of the system only has the right to delete the registered user and modify any privacy issues in the system. The system is secured by using the email verification for all type of the registrations.

Recording birth and death

There exist examples of real-time recording of births, but death recording systems are far more limited. There exist systems for VA, but they are rarely linked to death registration. It is often unclear if systems are only recording the event or also carrying out notification and actual registration. Typically, systems are stand-alone. Various efforts are made by countries to use ICD-10-based classification systems for mortality information, but they suffer from weak linkages with CR systems. Recording of birth and death can be done by the user who has registered to the integration system.

The registration of birth is done by the following steps

1. The user has to register and log in to the system by providing their user id and password.
2. The corresponding registration page gets opened and the user must select the birth registration link provided.
3. The details such as father’s name, mother’s name, permanent address, hospital name, time of birth of the child, father’s Aadhar card number, email address, mobile number are entered in the form.
4. When user submits the form, the admin verifies the Aadhar card of the father whether the applicant is original or not.
5. If the applicant is verified, the hospital name and father’s name is verified with the hospital database in order to verify the birth of the child.
6. If the database is verified, the message is sent to the users email id as the 31

The registration of death is done by the following steps,

1. The user has to register and log in to the system by providing their user id and password.
2. The corresponding registration page gets opened and the user must select the death registration link provided.
3. The form for death registration is opened and the details of the person died such as Aadhar card number, passport number, email, name, date of birth, voting id, license id, pan card number, type of death, time of death, etc. must be entered.
4. The admin verifies the Aadhar card number of the person with other database and stops the services.
5. The successful death registration is sent to the users mail id for verification of the certificate.
6. The generated death certificate is sent to the corresponding registered users mail id.

The user can be able to check for further notifications provided by the system by using their user id and password. Similar to birth and death registration PAN card, license, passport, voting id, electricity can also be registered.



Figure 1.3

Notification for registration

Mobile phones may be especially suited for low and middle income countries, where a significant proportion of the birth and death events typically takes place outside the jurisdiction of the health facility. Since notification would involve legal mechanisms to be created, in their absence SMS can be used to trigger the process of notification rather than carry out registration. Linkages of SMS with CR are relatively unclear, other than possibly triggering information about the event. Legal processes need to be established whereby an SMS can be treated as a formal notification, something typically not currently in place.

The registration of birth or death certificate is done with the help of mobile number and the email id is provided.

The successful registration is indicated to the user with the help of the mail notification.

Whenever the birth certificate is registered the days are calculated from the date of birth provided during the time of registration and the vaccination database is linked with the birth registration such that the age of the child is compared with the vaccination database and the corresponding vaccine details along with the age of the child is sent to the user's registered mail id.

The vaccination database consists of details such as age, vaccination to be given and the detailed description of the vaccination is provided. The age of the child who is registered is matched with the age provided in the vaccination table and the corresponding details about the vaccination are sent as notification mail to the registered user's mail id on a regular basis.



Figure 1.4

Registration for general services

There are few examples of fully automated registration systems. Computerized registration initiatives are typically not integrated with other systems. Typically, registration initiatives are based on an electronic data warehouse approach where information is stored in one place. The registration is important as it provides many services by the government authorities. Each registration is important and has a variety of usages. The registration of birth certificate can provide many benefits to the child such as scholarship, many government offers, etc.

Nowadays, registrations are done easily from home through the handheld devices such as mobile phones, laptops, PDA's etc. Each registration can be done through online websites that has been available.

The mode of payment also becomes easier and any change in the applicant's information can be done easier by

using such registrations. The users need not visit the corresponding office and wait in the queue for any kind of registration.

The proposed system makes the registration easier by providing all the registration under one user id and password. The users need not have to register separately for individual registration.

If once the user is registered to the proposed system he/she can use the same user id and password and can register for all basic necessities such as passport, pan card ,license, voting, marriage, divorce, birth, death, etc.

These services which are registered are used to enable government sectors such as public works department, Health department, Municipality council, RTO department to provide and govern the essential services that are mandatory to the user.

These registration helps the user to minimize the burden of visiting the government offices during any critics that occurs during the period of registration.

The admin of the registration system is responsible for the provision and the retrieval of the services which are provided to the users on a regular basis.

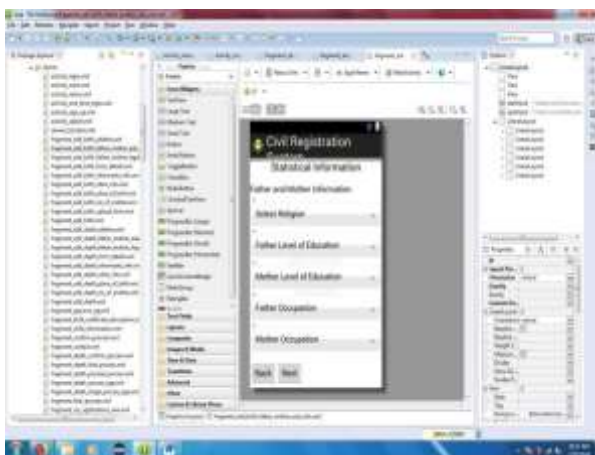


Figure 1.5

Termination of services

Once the person had expired/deceased, no one should be able to access the services of the respective person, so that his/her services should get stopped. This can be done only when the person's death is confirmed. The existing system does not provide the services to stop the unauthorized access of the services provided to the person who has been died.

Once the user registers for the death certificate for the corresponding person, the person's Aadhar number is obtained. As in recent times Aadhar card serves as a basis for all kind of registrations which acts like a primary key for individual personalities the verification of the Aadhar card becomes necessary.

The person whose death certificate is registered contains the Aadhar card number of the person who has been died in the death registration form. The corresponding Aadhar card number is verified with all the database of the other services and in case if any Aadhar card number in the other service database matches with the Aadhar card number of the registered person then the corresponding services are stopped. In case, if any person tries to access the services such as passport, license, voting, pan card, etc. the Aadhar card number is first verified with the death database and if it is present the corresponding access is denied and the notification will be sent to the user who has registered the death certificate through their mail id.

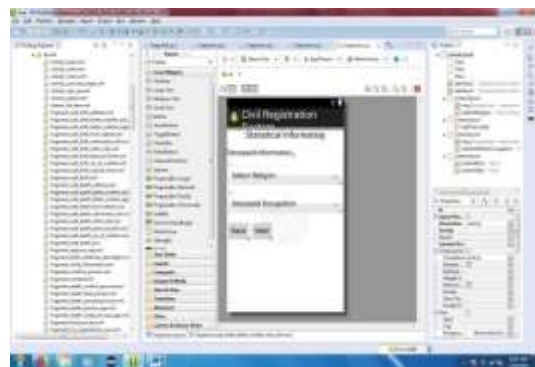


Figure 1.6

IV. CONCLUSION

In Civil Registry, user can use the Civil Registry's website services to apply for specific government certificate like pan card, voting card, employment card, nationality etc. In Civil Registry website, forms have been created which are capable of storing information in database. The Civil Registry website will be eco-friendly ,time reducing and easy to understand. Also as Civil Registry is online method for issuing specific government document it can reduce unwanted rushes on government office.

Birth and death registration system is essential for good governance and it helps the government in planning and resource allocation. Once a child is visible in the system, his or her right in the society can be ensured.

CRVS system generates key demographic indicators that help the government in policy making. Since the health department is an integrated part of birth and death events, the proposed system of notification generation from health information system to the office of registrar general of birth and death will help to build an effective CRVS system with genuine and real-time data.

We have implemented generation of birth notification from the DHIS2. In future we will focus on the whole process of the birth and death registration using DHIS2 for building an effective application that will support birth and death registrations.

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