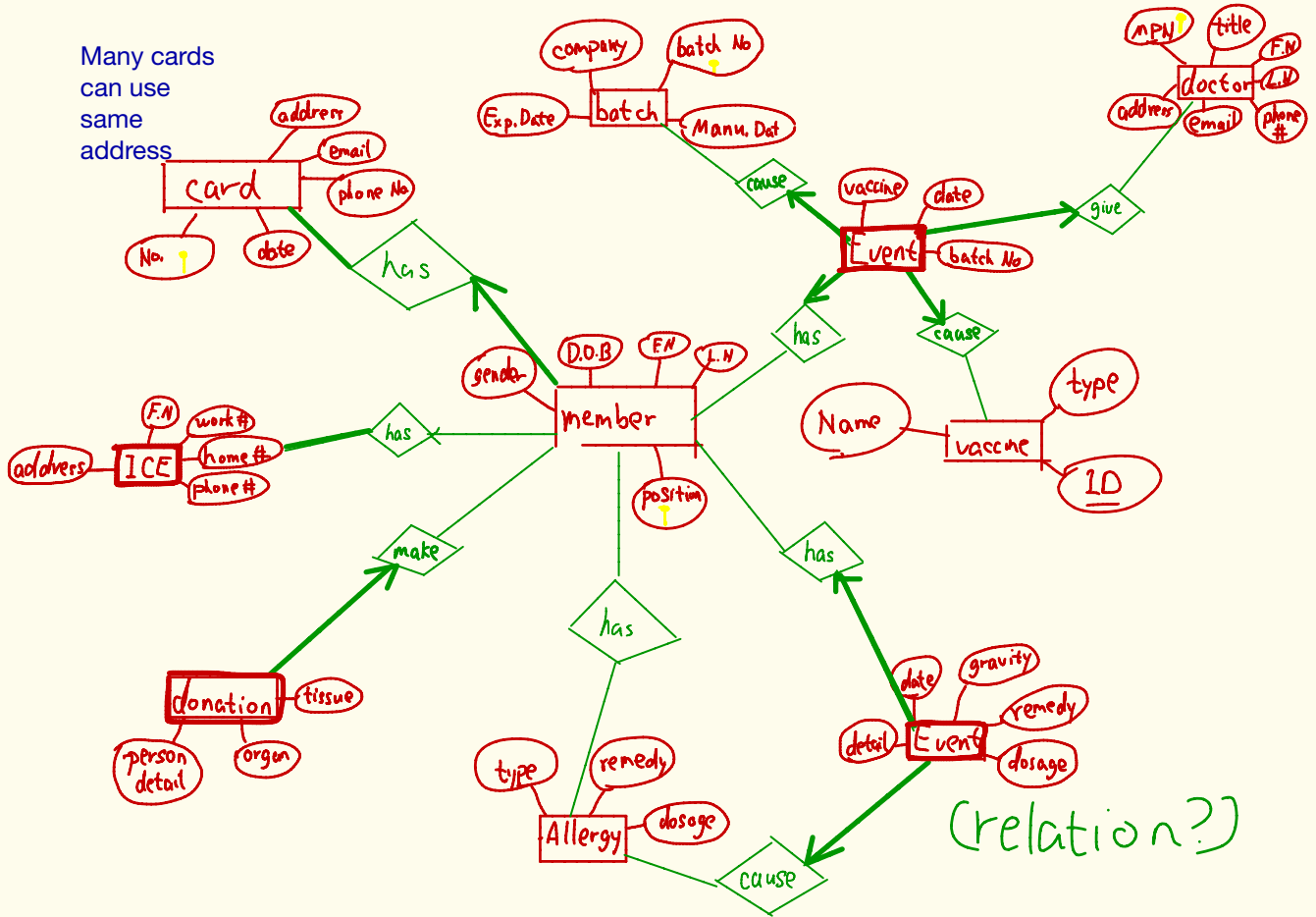


Many cards  
can use  
same  
address



# INFO20003 Semester 1, 2018

## Assignment 1 – ER Modelling

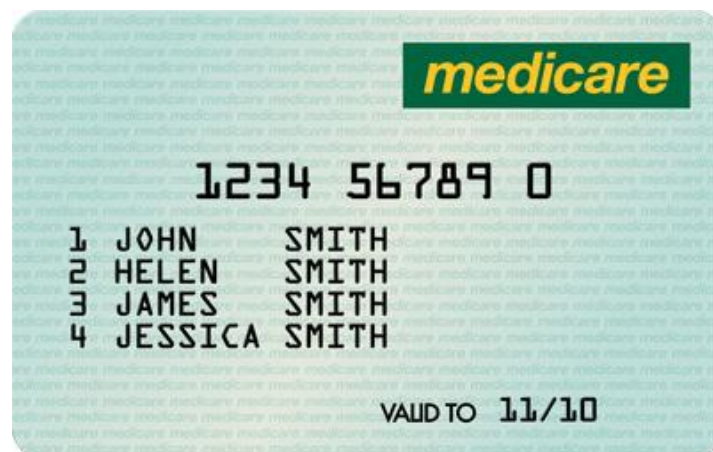
**Due: 11.59pm 30<sup>th</sup> March 2018**

**Submission:** Via LMS <https://lms.unimelb.edu.au>

## Case Study: The Australian Medicare Card

The Australian Department of Health and Human Services (DHHS) tracks medical records for every person who is eligible to hold a Medicare card. For **families** living at the same residential address, children under the age of 15 are stored on the family card (refer Figure 1). Each Medicare card number is associated with only one family (see 10-digit number in Figure 1). Individuals and children over the age of 15 are considered as a one-person family.

Every Medicare **card** has a 'valid to' date stored as a month and year on the card (refer Figure 1). Each family member holds a position number on the card. For example, to identify Jessica Smith both her Medicare number (1234567890) and position (4) on the Medicare card would be required.



*Figure 1 Australian Medicare card (DHHS, Australia): John and Helen are parents. James and Jessica are their children.*

Each Medicare card is attached to one residential address, contact email, and phone number. However, multiple Medicare cards can be associated with the same address (e.g. University students in a shared house).

For all **patients** listed on a Medicare card we record their gender, birthdate, first name and last name.

## Allergies

For every patient the DHHS wishes to record if they have any known allergies to medications (e.g. Penicillin, Cortisone, Codeine). If patients do have an **allergy** we need to know the type of allergy, and if known, typical medication remedy and dosage. For every allergic reaction **event** the database will record the date when it happened, allergic reaction gravity, medication

remedy, dosage (the amount given to the patient), and a short descriptive paragraph that describes the details of the reaction. Allergic reactions are graded 'Strong', 'Moderate' or 'Weak'.

## In Case of Emergency (ICE) contact

For each patient the DHHS may record an In Case of Emergency (ICE) contact. The ICE contact includes their full name, work, home and mobile contact number and their home residential address. Many members (of more than one family) may list the same ICE contact. Patients on the same Medicare card may list a different ICE contact. An ICE contact is not mandatory, but is preferred by the DHHS.

## Vaccinations

The DHHS needs to record mandatory vaccinations (e.g. Measles, Polio, Whooping Cough, Diphtheria, Tuberculosis and Tetanus) as well as optional vaccinations (e.g. HPV, Flu, Hepatitis A, Hepatitis B, Cholera, Typhoid, Yellow Fever) and be able to identify any child under the age of 15 who has not received any of the mandatory vaccinations.

For each vaccination event given to patients we must record the vaccine (e.g. Tetanus), date of vaccination and vaccine batch number. Vaccine producers can produce many types of vaccines (Tetanus, Flu, Cholera) and each vaccine can have many batches. The DHHS must know which company produced the vaccine, vaccine's batch number, batch manufacture date and batch expiry date. Each vaccination event is for one vaccine.

Patients can receive their vaccination from any registered doctor. Every registered doctor is identified by a unique medical practitioner number (MPN). We record the Medical Practitioner's title (Dr, Mr, Mrs, Ms, Prof.), first name, last name, registered business address, email, and business phone numbers.

## Organ Donation

The DHHS records whether any person over the age of 16 has opted to be an organ and tissue donor. For each person that opts in we record their details, and the organs and tissues they have agreed to donate. The potential organ and tissue that can be donated are as follows: Heart, Lung, Kidney, Liver, Pancreas, Pancreas Islet, Eye tissue, Bone tissue, Skin tissue and Heart tissue. Some patients may opt in to only donate organs (e.g. Heart, Lung, Kidney, Pancreas) or only donate tissues.

## Instructions:

Assignment 1 is worth 10% of your final mark. The assignment will be graded out of 100 marks as described in the table below:

ER Physical Model & Assumptions	80%
Conceptual Model in Chen's Notation	20%
.mwb Physical Model File	Assignment Hurdle

1. You are to analyse this Business Case and design a **Conceptual ER Model** in **Chen's notation** (can be hand drawn) and a **Physical ER Model** for a MySQL Relational Database in **Crow's foot notation** (modelled with MySQL Workbench).
2. You are to list any assumptions you have made about the model on a separate page. There is a 400 word limit for assumptions. Assumptions must not be used to simplify the assignment, but only to justify your decision about any ambiguity in the case study.
3. As part of your submission you must submit your final MySQL Workbench **.mwb file** of your Physical ER Model.

NOTE: Items 1 (Conceptual Model & Physical ER model) and 2 (Assumptions) must be submitted as **a single PDF**. The title of the PDF document *must* be your **student id** (e.g. 987654.pdf). Similarly, the title of your .mwb file should be your studentid.mwb.

## Assignment Submission:

You are to submit the assignment under the Assessment tab on LMS. Each section of the LMS Submission is clearly labelled and colour coded in LMS for your convenience:

1. ONE PDF document named as your student id (e.g. 987654.pdf) containing a legible (hand drawn) conceptual model in Chen's notation, a legible picture of your Physical ER Model and your assumptions. Submit this single PDF document under the **BLACK** submission link.

NOTE: If you fail to submit legible models you will be penalised 10% of your mark for this assignment.

2. Your final .mwb MySQL Workbench file of the Physical ER model. Submit your .mwb file under the **BLUE** submission link.

## Requesting a submission deadline extension:

If you need an extension due to a valid (medical) reason, you will need to provide evidence to support your request. Medical certificates need to be at least 2 days in length.

To request an extension:

1. Email the Subject Coordinator ([deccles@unimelb.edu.au](mailto:deccles@unimelb.edu.au)) with your student id, your name and your university email with the extension request and supporting evidence.
2. If your submission deadline extension is granted you will receive an email reply granting the new submission date. Do not lose this email!

## Reminder: INFO20003 Hurdle Requirements

To pass INFO20003 you must pass two hurdles:

- Hurdle 1: Obtain at least 50% (15/30) or higher for the three individual assignments (each worth 10%)
- Hurdle 2: Obtain a grade of 50% (35/70) or higher for the MST Mid Semester Test (10) and the End of Semester Exam (60)

Therefore, it is our recommendation to students that you attempt every assignment and every question in the test and exam.

**GOOD LUCK!**