Professor, Seoul National University Hospital Medical director, Seoul Metropolitan Fire Department Sang Do Shin

South Korea



Republic of Korea (South Korea)

Population: 48,333,000 (2011)

❖ Area: 100,033 km²

Seoul



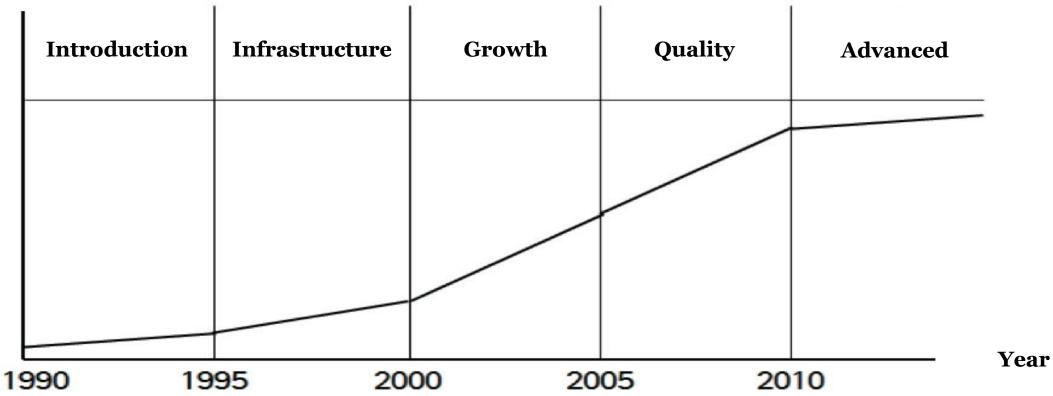
Seoul

- ❖ Capital of Korea during past 700 years
- **?** Pop.: 9,895,000
- ❖ Area: 605 km²



EMS development in Korea





Emergency Medical Services, Seoul

- Ambulance services
 - Fire based public
 - 23 EMS agencies
 - 170 ambulance stations
 - 400,000 ambulance transports per year
 - 5,000 OHCAs per year
 - Two tiered services since 2015
- 53 Emergency departments
 - 6 level-1 EDs
 - 23 level-2 EDs
 - 24 level-3 EDs

- City Health Department
 - Community CPR
 - Hospital CPR
- City Fire Department
 - EMS CPR and QA
 - EMS Physicians (Certified by National Gov.): 27 employed by National FD
- Seoul EMS Network
 - Since 2012
 - Organized and funded by City EMS Act
 - Leading community, EMS, hospital EMS development

Outline of EMS Development in Seoul

Goal:

- 1. Evaluation of EMS system
- 2. Development monitoring program
 - EMS database
 - Hospital Database
 - Cardiac arrest
 - Trauma database
- 3. Development system infrastructure

Goal:

- 1. Priority setting
- 2. Intervention program
 - DA-CPR
 - Community CPR program
 - EMS QA program
- 3. Development leadership and organization

Goal:

- 1. Priority setting
- 2. System monitoring program
- 3. Full merge EMS and hospital dataset
- 4. Regionalization of EMS
 - Cardiac center
 - Stroke center
 - Trauma center

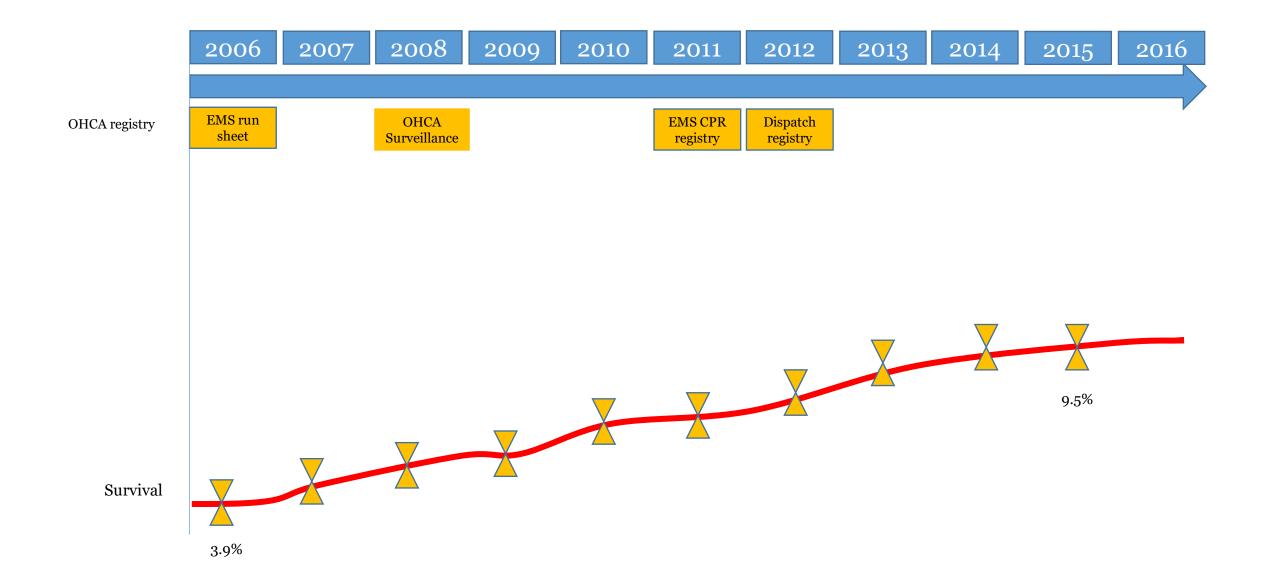
The 1st EMS Development Plan 2006-2010

The 2nd EMS Development Plan 2011-2015

The 3rd EMS Development Plan 2015-2020

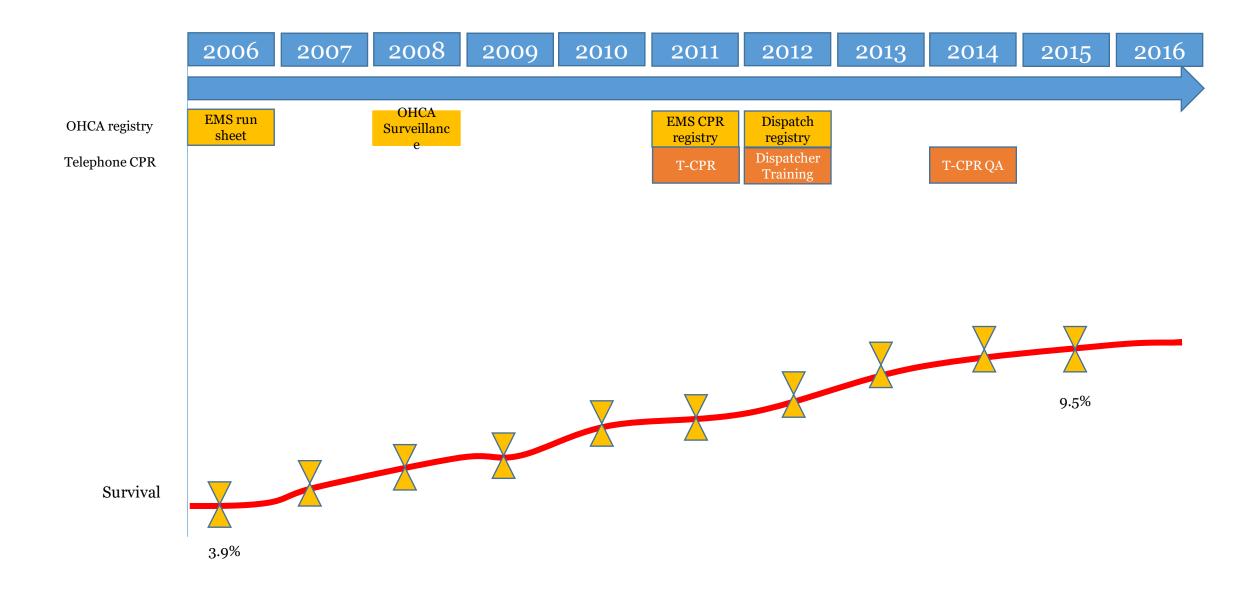
Step 1. OHCA registry

- Implementation status (3 points): very good QA program and sufficient information on OHCA and CPR
- Duration (5 points): since 2006
- Difficulty in implementation (3 points): fair



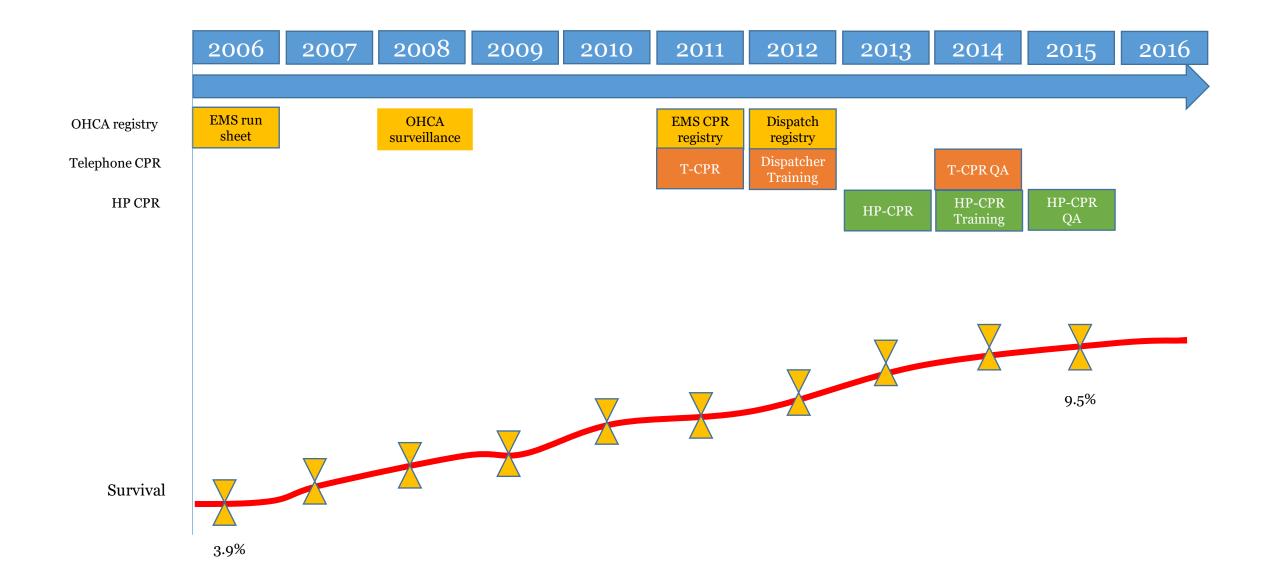
Step 2. Telephone CPR

- Implementation status (3 points): very good QA program and good T-CPR registry
- Duration (5 points): since 2011
- Difficulty in implementation (3 points): fair



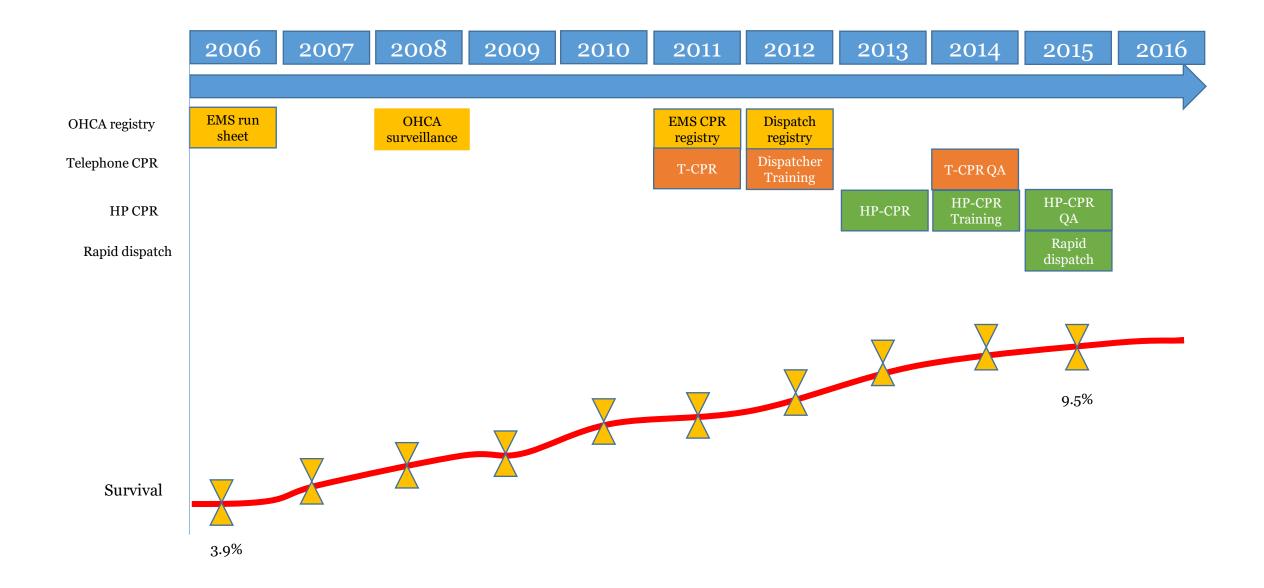
Step 3. High Performance CPR

- Implementation status (1 points): Not enough Team CPR training and not good QA program for HP CPR
- Duration (2 points): since 2014
- Difficulty in implementation (5 points): very difficulty



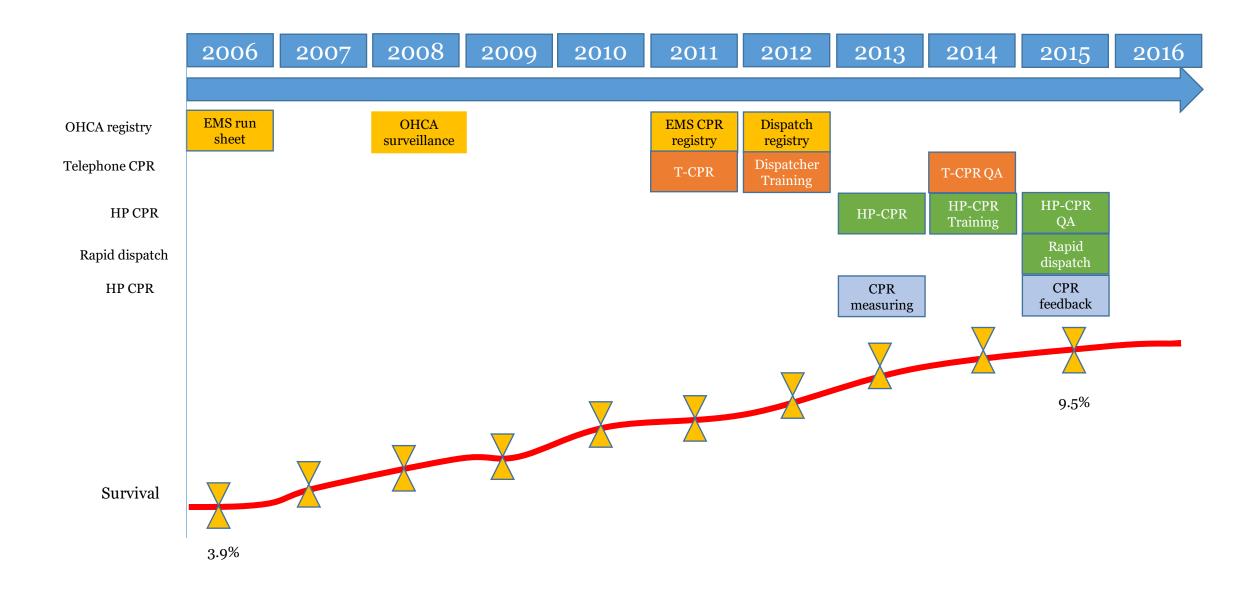
Step 4. Rapid dispatch

- Implementation status (1 points): not clear indication and protocol of rapid dispatch and no QA program
- Duration (2 points): since 2014
- Difficulty in implementation (5 points): very difficulty
 - Two-tiered response started in 2015 using fire engine as a first responder



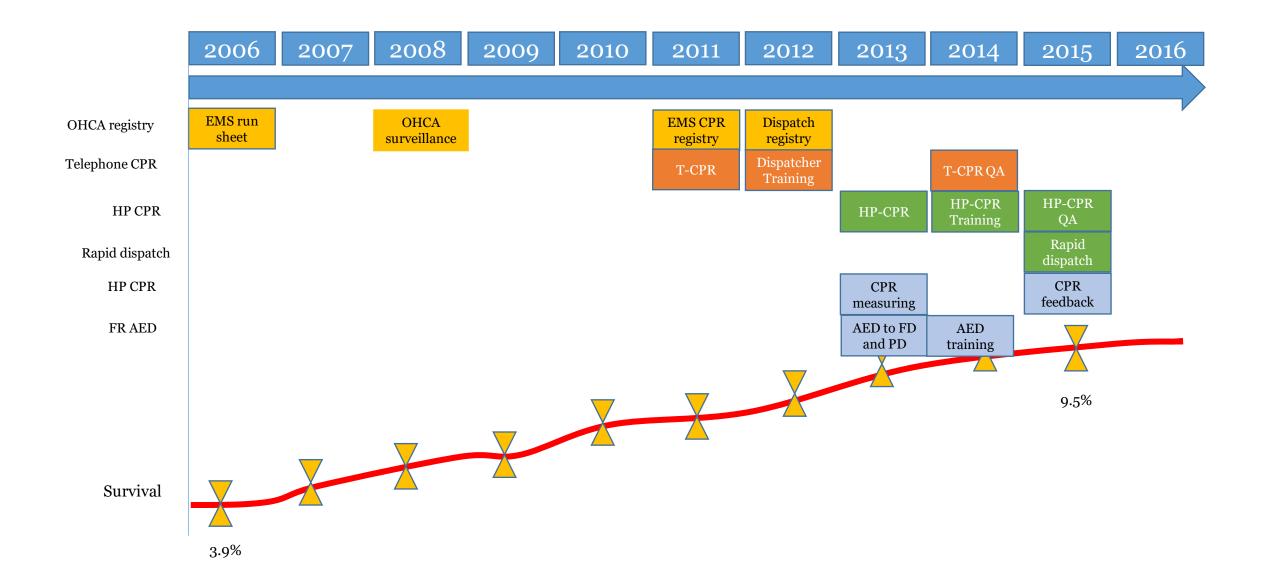
Step 5. Professional resuscitation measurement

- UTIS score
 - Implementation status (1 points): not enough to use devices and low level of QA program
 - Duration (3 points): since 2013
 - Difficulty in implementation (5 points): very difficulty
 - Feedback devices were implemented in 2013 and measurement started in 2015



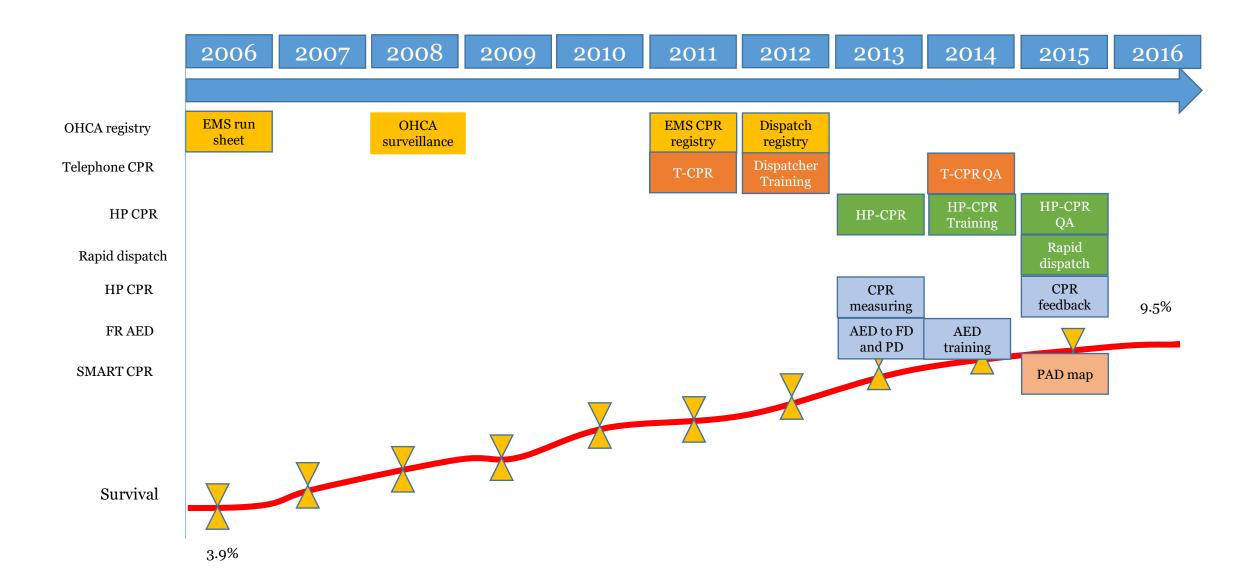
Step 6. First Responder AED

- Implementation status (1 points): not enough training and no QA program
- Duration (3 points): since 2013
- Difficulty in implementation (5 points): very difficulty
 - AED were deployed to fire department and police office but QA was not set up



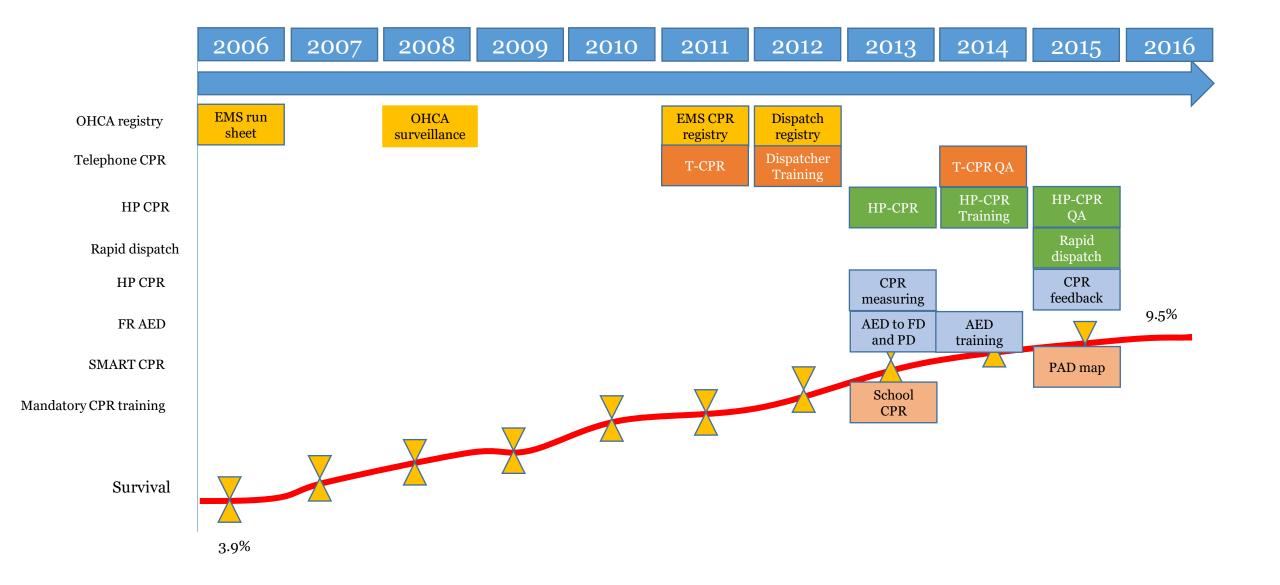
Step 7. Smart Technology for bystander CPR and PAD program

- Implementation status (1 points): not fully developed program using GIS and no enough activation
- Duration (1 points): since 2015
- Difficulty in implementation (5 points): very difficulty
 - GIS mapping and notification via application for PAD was set up but the activation program was not fully developed



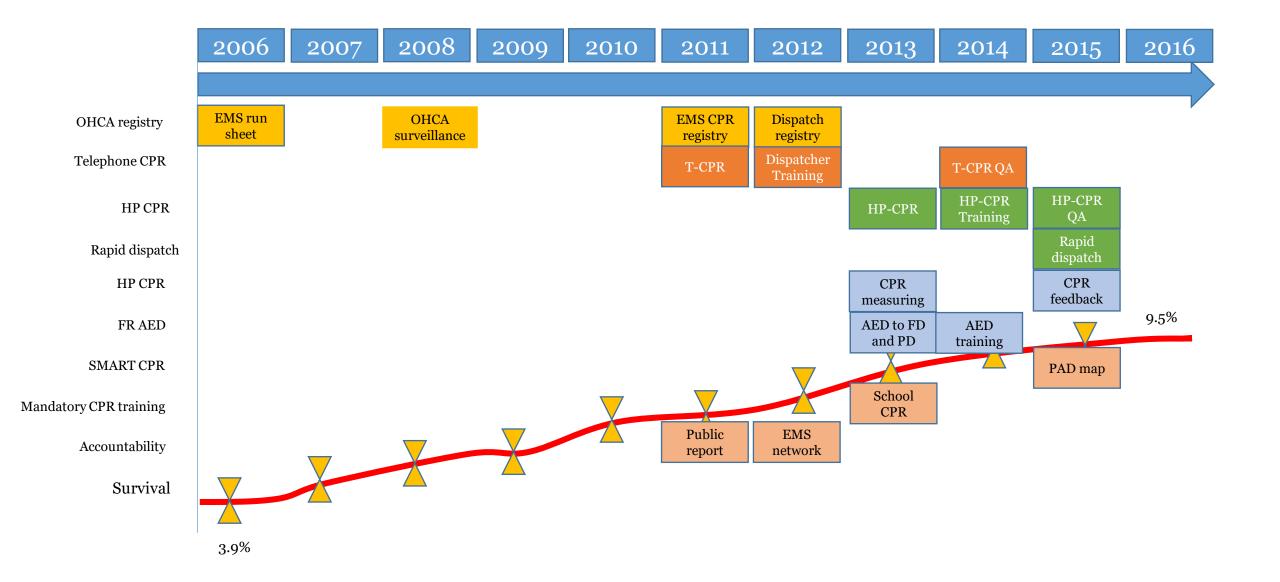
Step 8. Mandatory CPR training

- Implementation status (2 points): mandatory school CPR program but driver training not implemented
- Duration (3 points): since 2013
- Difficulty in implementation (5 points): very difficulty



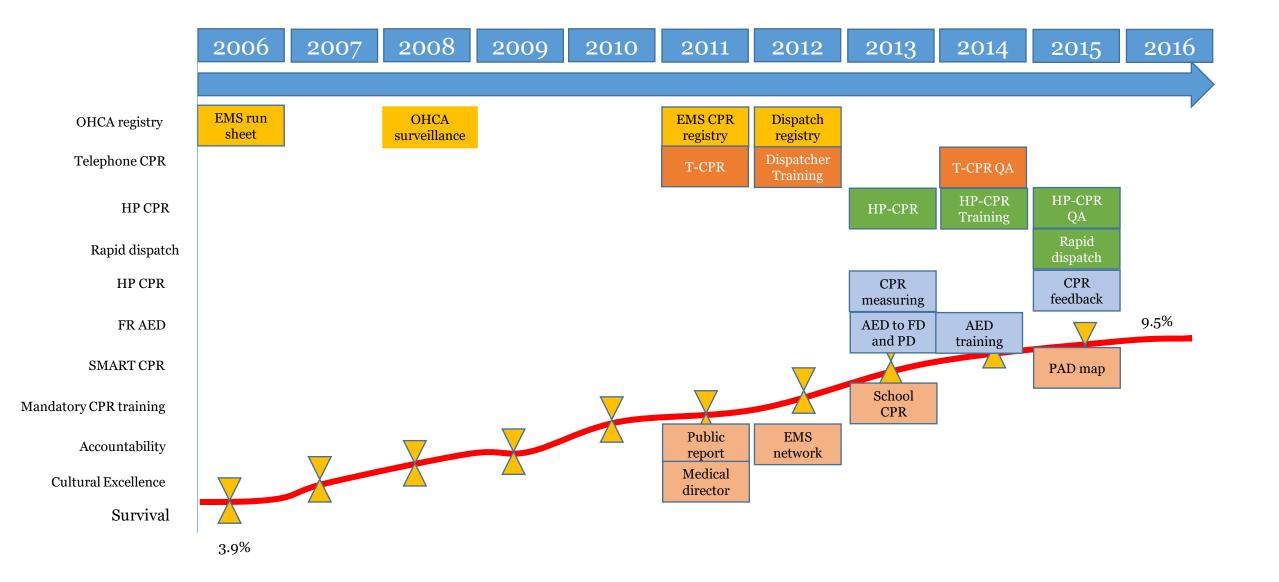
Step 9. Accountability

- Implementation status (3 points): full range of public report annually and share the all information among CPR organizations
- Duration (5 points): since 2011
- Difficulty in implementation (3 points): fair



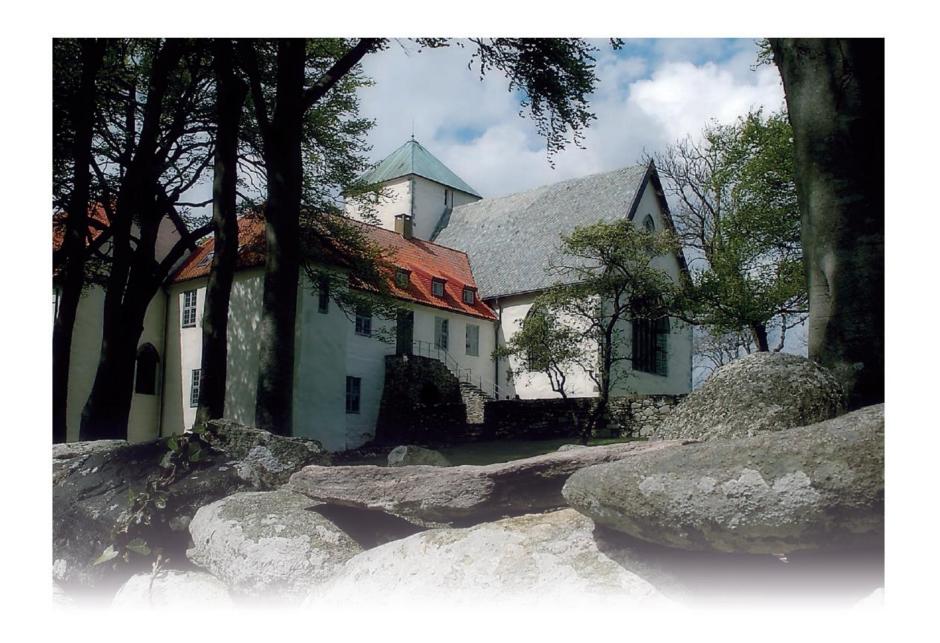
Step 10. Culture of Excellence

- Implementation status (2 points): full range of collaboration but role of medical directors were fully accepted
- Duration (4 points): since 2012
- Difficulty in implementation (5 points): very difficulty



Summary of Utstein ten-step implementation

- Utstein ten-steps is the new frame for guidance of CPR program implementation as well as measuring tool the status of the implementation.
- Seoul is the one example of the biggest city and has improved the CPR outcomes by implementation of ten-steps.



Thanks

sdshin@snu.ac.kr