```
(define (domain safety)
   (:requirements :strips :typing :negative-preconditions)

   (:types
      AI_agent
      school_info connection_status patients_info ambu_arrival_status
      ambulance_worker emergency_patient
      school hospital firestation
      ambulance
      bed
   )

   (:predicates
      (have ?AI_agent - AI_agent ?school_info-or-connection_status-or-patients_info-or-
ambu_arrival_status - (either school_info connection_status patients_info
ambu_arrival_status))
      (in ?emergency_patient - emergency_patient ?school-or-ambulance-or-hospital-or-bed
- (either school ambulance hospital bed))
      (works_in ?ambulance_worker ?ambulance)
      (enough ?bed ?hospital)
      (at ?ambulance - ambulance ?school-or-firestation-or-hospital - (either school
firestation hospital))
      (empty ?ambulance-or-bed - (either ambulance bed))
   )

   (:action check_connection
      :parameters
               (
                  ?AI_agent - AI_agent
                  ?school_info - school_info
                  ?connection_status - connection_status
               )
      :precondition
               (and (have ?AI_agent ?school_info)
                    (not (have ?AI_agent ?connection_status)))

      :effect
            (have ?AI_agent ?connection_status)
   )

   (:action send_information
      :parameters
               (
                  ?AI_agent - AI_agent
                  ?emergency_patient - emergency_patient
                  ?school - school
                  ?ambulance - ambulance
                  ?patients_info - patients_info
                  ?connection_status - connection_status
               )
      :precondition
               (
                  and (have ?AI_agent ?connection_status)
                      (in ?emergency_patient ?school)
                      (not (at ?ambulance ?school))
                      (not (have ?AI_agent ?patients_info))
               )
      :effect
            (have ?AI_agent ?patients_info)
   )
```

```
(:action start_ambulance
  :parameters
          (
            ?patients_info - patients_info
            ?ambulance - ambulance
            ?firestation - firestation
            ?school - school
            ?AI_agent - AI_agent
          )
  :precondition
          (and (have ?AI_agent ?patients_info)
               (at ?ambulance ?firestation)
               (not (at ?ambulance ?school))
               (empty ?ambulance)
          )

  :effect
        (and (at ?ambulance ?school)
             (not (at ?ambulance ?firestation))
        )
)

(:action report_ambulance_arrival
  :parameters
          (
            ?ambulance - ambulance
            ?school - school
            ?firestation - firestation
            ?AI_agent - AI_agent
            ?ambu_arrival_status - ambu_arrival_status
          )
  :precondition
          (and (at ?ambulance ?school)
               (not (at ?ambulance ?firestation))
               (not (have ?AI_agent ?ambu_arrival_status))
          )
  :effect
        (have ?AI_agent ?ambu_arrival_status)
)

(:action load_ambulance
  :parameters
          (
            ?emergency_patient - emergency_patient
            ?school - school
            ?ambulance - ambulance
            ?AI_agent - AI_agent
            ?ambu_arrival_status - ambu_arrival_status
          )
  :precondition
          (and (have ?AI_agent ?ambu_arrival_status)
               (in ?emergency_patient ?school)
               (empty ?ambulance)
               (at ?ambulance ?school)
          )
  :effect
        (and (not (in ?emergency_patient ?school))
             (in ?emergency_patient ?ambulance)
             (not (empty ?ambulance))
```

```
            )
    )

    (:action move_ambulance
      :parameters
                (
                  ?ambulance - ambulance
                  ?school - school
                  ?hospital - hospital
                  ?emergency_patient - emergency_patient
                )
      :precondition
                (and (at ?ambulance ?school)
                     (not (empty ?ambulance))
                     (in ?emergency_patient ?ambulance)
                     (not (in ?emergency_patient ?school))
                )
      :effect
            (and (not (at ?ambulance ?school))
                 (at ?ambulance ?hospital)
                )
    )

    (:action unload_ambulance
      :parameters
                (
                  ?emergency_patient - emergency_patient
                  ?ambulance - ambulance
                  ?hospital - hospital
                  ?school - school
                )
      :precondition
                (and (in ?emergency_patient ?ambulance)
                     (at ?ambulance ?hospital)
                     (not (at ?ambulance ?school))
                     (not (empty ?ambulance))
                )
      :effect
            (and (not (in ?emergency_patient ?ambulance))
                 (in ?emergency_patient ?hospital)
                 (empty ?ambulance)
                )
    )

    (:action go_to_bed
      :parameters
                (
                  ?emergency_patient - emergency_patient
                  ?bed - bed
                  ?hospital - hospital
                )
      :precondition
                (and (in ?emergency_patient ?hospital)
                     (not (in ?emergency_patient ?bed))
                     (enough ?bed ?hospital)
                )
      :effect
            (and (not (enough ?bed ?hospital))
                 (in ?emergency_patient ?bed)
                )
```

```
    )

    (:action move_back_ambulance
      :parameters
                (
                    ?emergency_patient - emergency_patient
                    ?hospital - hospital
                    ?ambulance - ambulance
                    ?school - school
                    ?bed - bed
                )
      :precondition
                (and (not (in ?emergency_patient ?ambulance))
                     (in ?emergency_patient ?bed)
                     (at ?ambulance ?hospital)
                     (not (at ?ambulance ?school))
                     (empty ?ambulance)
                )
      :effect
            (and (at ?ambulance ?school)
                 (not (at ?ambulance ?hospital))
            )
    )

    (:action transfer_end
      :parameters
                (
                    ?emergency_patient - emergency_patient
                    ?school - school
                    ?patients_info - patients_info
                    ?connection_status - connection_status
                    ?AI_agent - AI_agent
                )
      :precondition
                (and (not (in ?emergency_patient ?school))
                     (have ?AI_agent ?patients_info)
                     (have ?AI_agent ?connection_status)
                )

      :effect
            (and (not (have ?AI_agent ?patients_info))
                 (not (have ?AI_agent ?connection_status))
            )
    )
  )
```