Figure A-1 Flow Chart of Patient Flow in Clinic 1

Fig A-1 Process flows of the clinic. Type 1 = patients who come to the clinic for an initial visit; type 2 = patients who come for a follow-up visit; type 3 = patients who come for services routinely handled by the physician's assistant (P/A).

Figure A-2 Schematic View of Simulation of Clinic 1

Fig A-2 Process flow shown in Figure A-1 is translated to simulation model using ExtendSim ®. Resource pools are created for Nurses, Rooms, Residents (not used), Attending, and P/A to track utilization. Additional data is collected on Cycle Times, Waiting Times, Overtime, and Throughput.

Figure A-3 Patient Unpunctuality Prior to Intervention in Clinic 1

Figure A-4 Patient Unpunctuality 12 Months After Intervention in Clinic 1

Figure A-5 Process Times for Group A in Clinic 1

Figure A-6 Process Times for Group B in Clinic 1

Figure A-7 Process Times for Group C in Clinic 1

Table A-1 Distribution Parameters for Variables Used in Simulation of Clinic 1

Activity	Minimum (min)	Maximum (min)	Mean	STD	Alpha	Beta
Registration	1	17	3.4	2.2	1.7	6.7
Retrieve patient	1	5	2.5	1.2	1.0	1.0
Vital time	1	25	5.5	4.5	0.6	2.6
Att time type 1	10	81	37.7	11.6	3.1	4.8
Att time type 2	7	55	22.4	9.6	1.5	3.1
PA time type 3	4	76	18.2	11.2	1.1	4.5
Att time type 3	5	10	7.5	1.4	1.0	1.0
Checkout	1	28	8.2	4.4	1.7	4.6

STD, standard deviation; Vital time, time required to check the patient's vital signs; Att time type 1 = time attending spends with type 1 patient; PA time type 3, time physician's assistant spends with type 3 patients; types 1–3 refer to patient types.

Table A-2 Characteristics and Distribution Parameters of Unpunctuality Before and 12 Months After Intervention

	Pre-Intervention	Post – Intervention (12 Months)
Minimum (min)	-60	-56
Maximum (min)	40	2
Mean (min)	-20.5	-25.0
STD	17.9	13.2
Portion early (%)	90.4	95.4
Ave earliness (min)	24.1	26.2
Portion late (%)	7.7	1.5
Ave lateness (min)	16.8	2.0
Alpha	2.6	2.0
Beta	3.9	1.8

All Punctual, scenario in which all patients arrive at the appointment time; STD, standard deviation; Portion early, proportion of patients arriving earlier than appointment time; Ave earliness, average gap between appointment time and arrival time for patients who arrive early.