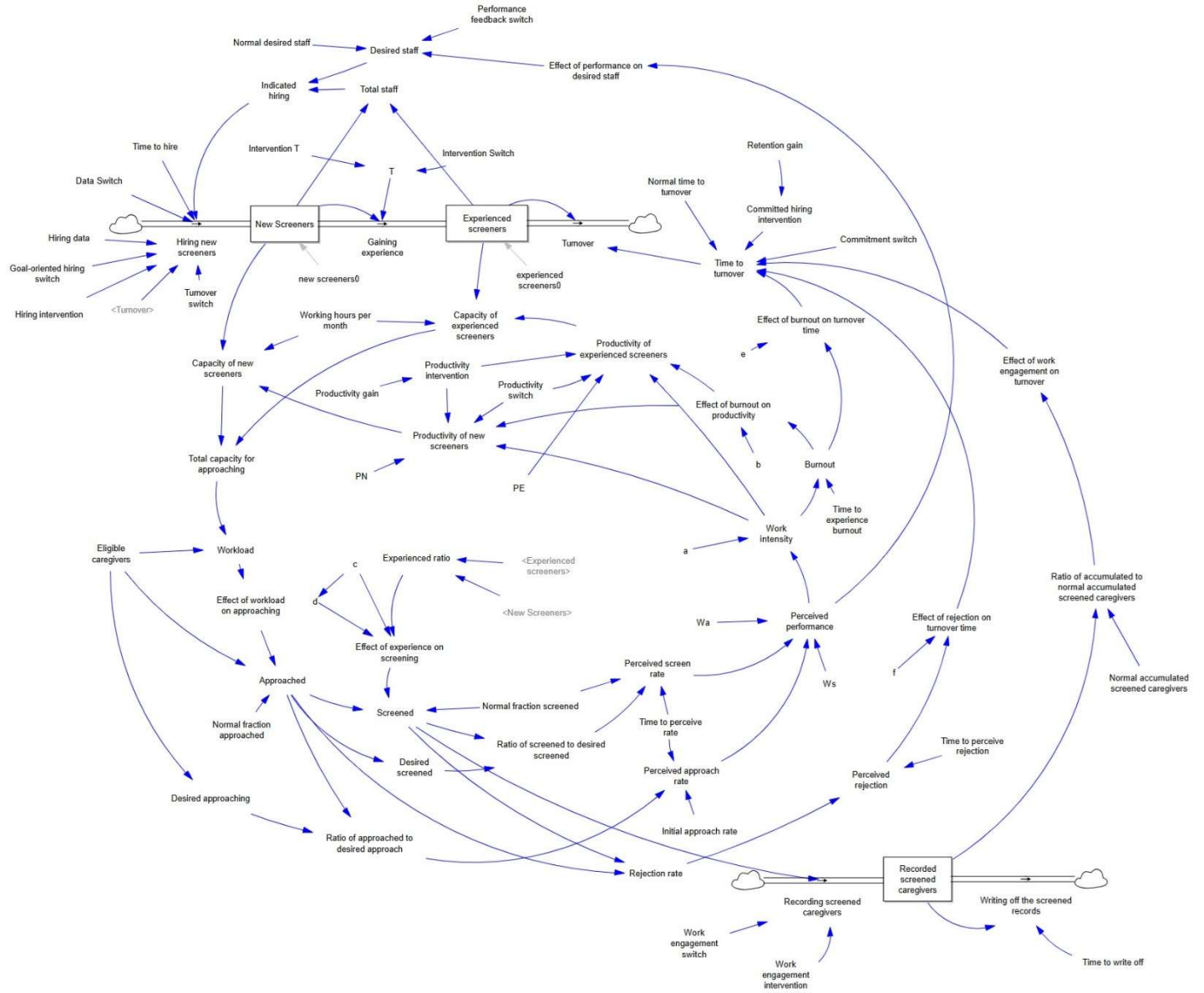


Appendix

Simulated Model



Formula:

a= 5
Units: Dmnl
Approached=
Normal fraction approached* Eligible caregivers* Effect of workload on approaching
Units: Person/Month
b=2.167
Units: Dmnl
Burnout=
SMOOTH (Work intensity, Time to experience burnout)
Units: Dmnl
c= 0.7
Units: Dmnl
Capacity of experienced screeners=
Experienced screeners* Productivity of experienced screeners* Working hours per month
Units: Person/Month
Capacity of new screeners=
New Screeners*Productivity of new screeners*Working hours per month
Units: Person/Month
Commitment switch= 0
Units: Dmnl [0,1,1]
Committed hiring intervention=
STEP (Retention gain, 25)
Units: Month
d= 1-1/exp(c)
Units: Dmnl
When the experienced ratio is 1 (heppens in t=0), the function should be 1. Thus, $1/(d+e^{(-c)})=1 \Rightarrow d=1-1/e^c$

Data Switch= 1
Units: Dmnl [0,1,1]
Desired approaching=
Eligible caregive
Units: Person/Month
Desired screened=
Approached
Units: Person/Month
Desired staff=
Performance feedback switch*Normal desired staff*Effect of performance on desired staff + (1-Performance feedback switch)*Normal desired staff
Units: Person
e=1.147
Units: Dmnl
Effect of burnout on productivity=
$\exp(-b \cdot \text{Burnout})$
Units: Dmnl
Effect of burnout on turnover time=
$\exp(-e \cdot \text{Burnout})$
Units: Dmnl
Effect of experience on screening=
$1 / (d + \exp(-c \cdot \text{Experienced ratio}))$
Units: Dmnl
The function should be 1 when experienced ratio is 1. Thus, d can be found from c (see equation d). The minimum is around 0.5. The rationale is that the mean of screen rate is 0.69, and the minimum is usually around 0.4 (o.19 happened only once in November 2023). $0.9 \cdot 0.5 = 0.45$ which is around the minimum.
Effect of performance on desired staff=
WITH LOOKUP (Perceived performance,

$([(0,0)-(2,2)],(0,2),(0.4,1.95),(0.7,1.85),(0.9,1.7),(1,1.6),(1.2,1.4),(1.4,1.2),(1.6,1.1),(2,1))$
Units: Dmnl
0 0.5 0.8 1 1.1 1.2 1.3 1.6 2 2 1.99 1.9 1.8 1.4 1 0.7 0.5 0.5
Effect of rejection on turnover time=
$\exp(-f \cdot \text{Perceived rejection})$
Units: Dmnl
Effect of work engagement on turnover=
WITH LOOKUP (Ratio of accumulated to normal accumulated screened caregivers,
$([(0,-0.25788)-(2,3)],(0,1), (0.5,1.1), (1,1.2), (1.5,1.7), (1.8,1.9), (2,2)))$
Units: Dmnl
Effect of workload on approaching=
$\min(1, 1/\text{Workload})$
Units: Dmnl
Eligible caregiver=
GET XLS DATA('Data.xlsx' , 'Data' , 'A' , 'X2')
Units: Person/Month
Experienced ratio=
$\text{Experienced screeners}/(\text{New Screeners}+\text{Experienced screeners})$
Units: Dmnl
Experienced screeners=
INTEG (Gaining experience-Turnover, experienced screeners0)
Units: Person
experienced screeners0= 3
Units: Person [0,3,1]
f=0
Units: Dmnl
Gaining experience=
New Screeners/T

Units: Person/Month
Goal-oriented hiring switch= 0
Units: Dmnl [0,1,1]
Hiring data=
GET XLS DATA('Data.xlsx' , 'Data' , 'A' , 'f2')
Units: Person/Month
Hiring intervention=
STEP (1, 25)
Units: Dmnl
Hiring new screeners=
Data Switch*Hiring data+ (1-Data Switch)*((Turnover switch*Turnover+"Goal-oriented hiring switch"*Indicated hiring /Time to hire)*Hiring intervention + Hiring data*(1-Hiring intervention))
Units: Person/Month
Indicated hiring=
max (0,Desired staff-Total staff)
Units: Person
Initial approach rate= 0.7
Units: Dmnl
Intervention Switch= 0
Units: Dmnl [0,1,1]
Intervention T=
STEP (-3, 25)
Units: Month
New Screeners=
INTEG (Hiring new screeners-Gaining experience, new screeners0)
Units: Person
new screeners0= 0
Units: Person [0,3,1]

Normal accumulated screened caregivers=600
Units: Person
On average, the PMAD team screen 114 caregivers per month. Over 6 months, they screen around 600.
Normal desired staff= 3
Units: Person
Normal fraction approached= 0.7
Units: Dmnl
Normal fraction screened= 0.9
Units: Dmnl
Normal time to turnover=24
Units: Month [0.5,100,5]
PE=7.133
Units: Person/Hour/Person [0.5,5,0.1]
Perceived approach rate=
SMOOTH (Ratio of approached to desired approach, Time to perceive rate , Initial approach rate)
Units: Dmnl
Perceived performance=
$W_a \cdot \text{Perceived approach rate} + W_s \cdot \text{Perceived screen rate}$
Units: Dmnl
Perceived rejection=
SMOOTH(Rejection rate, Time to perceive rejection)
Units: Dmnl
Perceived screen rate=
SMOOTH(Ratio of screened to desired screened, Time to perceive rate , Normal fraction screened)
Units: Dmnl
Performance feedback switch= 0
Units: Dmnl [0,1,1]

PN=2.753
Units: Person/Hour/Person
Productivity gain=0.5
Units: Person/Hour/Person
Productivity intervention=
STEP (Productivity gain, 25)
Units: Person/Hour/Person
Productivity of experienced screeners=
PE*Work intensity*Effect of burnout on productivity *(1-Productivity switch) + (PE+ Productivity intervention) *Work intensity*Effect of burnout on productivity *Productivity switch
Units: Person/Hour/Person
Productivity of new screeners=
PN*Work intensity*Effect of burnout on productivity * (1-Productivity switch) +(PN+Productivity intervention)*Work intensity*Effect of burnout on productivity*Productivity switch
Units: Person/Hour/Person
Productivity switch=0
Units: Dmnl [0,1,1]
Ratio of accumulated to normal accumulated screened caregivers=
Recorded screened caregivers /Normal accumulated screened caregivers
Units: Dmnl
Ratio of approached to desired approach=
Approached/Desired approaching
Units: Dmnl
Ratio of screened to desired screened=
Screened/Desired screened
Units: Dmnl
Recorded screened caregivers=
INTEG (Recording screened caregivers-Writing off the screened records,0)
Units: Person

Recording screened caregivers=
Work engagement switch*Work engagement intervention *Screened
Units: Person/Month
Rejection rate=
1-Screened/Approached
Units: Dmnl
Retention gain=6
Units: Month
Screened=
Normal fraction screened*Approached*Effect of experience on screening
Units: Person/Month
T=8.171+Intervention T*Intervention Switch
Units: Month
Time to experience burnout= 1
Units: Month
Time to hire= 1
Units: Month [0.1,10,0.5]
Time to perceive rate= 1
Units: Month [0.1,12,0.2]
Time to perceive rejection= 2
Units: Month
Time to turnover=
(1-Commitment switch) *Normal time to turnover*Effect of burnout on turnover time *Effect of rejection on turnover time*Effect of work engagement on turnover + Commitment switch*(Normal time to turnover + Committed hiring intervention) * Effect of burnout on turnover time*Effect of rejection on turnover time*Effect of work engagement on turnover
Units: Month [0.1,20,0.5]
Time to write off=6

Units: Month
Total capacity for approaching=
Capacity of experienced screeners+Capacity of new screeners
Units: Person/Month
Total staff=
Experienced screeners+New Screeners
Units: Person
Turnover=
Experienced screeners/Time to turnover
Units: Person/Month
Turnover switch= 0
Units: Dmnl [0,1,1]
Wa= 1
Units: Dmnl [0,1,0.1]
Work engagement intervention=
STEP (1, 25)
Units: Dmnl
Work engagement switch=0
Units: Dmnl [0,1,1]
Work intensity=
$1+3/(1+\exp(a*\text{Perceived performance}-3))$
Units: Dmnl
This function varies between 1 and 4. When the performance is at it maximum (2), it is 1. When performance is very low, it is near 4. The reason for this range is that the percentage approached changes between 0.19 and 0.7, so it can be tripled.
Working hours per month=160
Units: Hour/Month
Workload=
Eligible caregive/Total capacity for approaching
Units: Dmnl

Writing off the screened records=
Recorded screened caregivers/Time to write off
Units: Person/Month
Ws= 1
Units: Dmnl [0,1,0.1]