

Example of How the Algorithm Operates:

The following example illustrates the procedure on a simplified scale:

CANDIDATES:

Suppose there are nine (9) candidates named:

- Emmy Harris
- Justin Hong
- Cynthia Hotham
- Sally Jones
- Lindy Lee
- Steve O'Brien
- Nadira Patel
- Ramesh Singh
- Ben Smith

HOSPITALS:

and three (3) hospitals called:

- The Royal Hospital
- General Hospital
- St George Hospital

The Royal needs to fill **2 positions**,
General needs to fill **3 positions** and
St George needs to fill **4 positions**.

Candidate's Priority Lists (CPL) are:

E. Harris	J. Hong	C. Hotham	S. Jones	L. Lee	S. O'Brien	N. Patel	R. Singh	B. Smith
1 Royal	1 General	1 General	1 Royal	1 Royal	1 General	1 St George	1 St George	1 General
2 General	2 Royal	2	2 St George	2 General	2 St George	2 Royal	2 Royal	2 St George
3 St George	3 St George	3	3	3 St George	3 Royal	3 General	3 General	3

Hospital's Nomination Forms (HNF) are:

Rank	Royal (2 posts)	Rank	General (3 posts)	Rank	St George (4 posts)
1	Harris	1	Patel	1	Patel
2	<u>Patel</u>	2	Hong	2	O'Brien
3	Hong	3	<u>O'Brien</u>	3	Harris
4	Lee	4	Singh	4	<u>Jones</u>
5	Singh	5	Smith	5	Lee
6	Jones	6	Lee	6	Smith
7		7	Hotham	7	
8		8	Harris	8	
9		9		9	

Quota Boundary

Quota Boundary

Quota Boundary

Step 1 - Selects

→ Where Candidate's first preference comes before that of the Hospital's Nomination Form quota boundary

- ✓ Appoints Harris to the Royal
- ✓ Appoints Patel to St George
- ✓ Appoints Hong to General
- ✓ Appoints O'Brien to General

- ✗ Deletes Harris from General & St George
- ✗ Deletes Patel from Royal & General
- ✗ Deletes O'Brien from St George
- ✗ Deletes Hong from the Royal

Rank	Royal (2 posts)
1	Harris ✓
2	<u>Patel</u> ✗
<hr style="border: 1px solid red;"/>	
3	Hong ✗
4	Lee
5	Singh
6	Jones
7	
8	
9	

Quota Boundary

Rank	General (3 posts)
1	Patel ✗
2	Hong ✓
3	<u>O'Brien</u> ✓
<hr style="border: 1px solid red;"/>	
4	Singh
5	Smith
6	Lee
7	Hotham
8	Harris ✗
9	

Quota Boundary

Rank	St George (4 posts)
1	Patel ✓
2	O'Brien ✗
3	Harris ✗
4	<u>Jones</u>
<hr style="border: 1px solid red;"/>	
5	Lee
6	Smith
7	
8	
9	

Quota Boundary

- ↑ Lee steps up into Royal list (i.e. quota boundary moves down one place)
- ↑ Singh steps up into General list (i.e. quota boundary moves down one place)
- ↑ Lee & Smith step up into St George list (i.e. quota boundary moves down two place)

Rank	Royal (2 posts)
1	Harris ✓
2	Patel ✗
3	Hong ✗
4	<u>Lee</u>
<hr style="border: 1px solid red;"/>	
5	Singh
6	Jones
7	
8	
9	

Quota Boundary

Rank	General (3 posts)
1	Patel ✗
2	Hong ✓
3	<u>O'Brien</u> ✓
4	<u>Singh</u>
<hr style="border: 1px solid red;"/>	
5	Smith
6	Lee
7	Hotham
8	Harris
9	

Quota Boundary

Rank	St George (4 posts)
1	Patel ✓
2	O'Brien ✗
3	Harris ✗
4	Jones
5	Lee
6	<u>Smith</u>
<hr style="border: 1px solid red;"/>	
7	
8	
9	

Quota Boundary

Step 2 - Selects

→ **Where Candidate's first preference matches Hospital's revised list (revised quota boundary)**

✓ Appoints Lee to the Royal

✗ Deletes Lee from Hospital General & St George

- **Royal's quota is now full**

Royal had a quota of 2 positions and picked up 2 of their first 4 ranked candidates. The candidates were matched were ranked at positions 1 and 4. Candidates ranked 2 (Patel) and 3 (Hong) were matched to hospitals which appeared higher on their Candidate's Priority Lists. Royal went down to the 4th ranked candidate on their HNF to fill their 2 positions, making their hospital's final quota boundary **Four (4)**. Any candidate now ranked below 4 would not be matched to Royal.

- Singh loses first preference (St George)

[Singh missed out on his first preference (St George) as the hospital did not rank him on their HNF.]

- Jones loses first preference (Royal)

[Jones missed out on her first preference (Royal) as the hospital did not rank her highly enough on their HNF; their HNF final quota boundary was 4 and she was ranked at 6.]

^Justin Hong actually wanted to go to the Royal Hospital but thought he would have a better chance of getting into General Hospital so ranked them higher on his CPL, he did not use the match to its full advantage as he would have got matched to Royal Hospital if he had put them as a higher preference.

It is wise for candidates to be realistic when ranking hospitals; although you may aim high and take a chance by putting a certain hospital as your first preference it is advisable that you do include, on your CPL, a hospital that you have realistic chance of matching with. Carefully check each hospital's selection criteria before you submit your CPL.

Rank	Royal (2 posts)
1	Harris ✓
2	Patel ✗
3	Hong ✗
4	Lee ✓ (Quota Full)
5	Singh
6	Jones
7	
8	
9	

FINAL Quota Boundary

Rank	General (3 posts)
4	Patel ✗
2	Hong ✓
3	O'Brien ✓
4	Singh
5	Smith
6	Lee
7	Hotham
8	Harris
9	

Rank	St George (4 posts)
1	Patel ✓
2	O'Brien ✗
3	Harris ✗
4	Jones ✓
5	Lee ✗
6	Smith
7	
8	
9	

Final Step

- Singh also loses second preference

[Singh missed out on his second preference (Royal) as the hospital did not rank him highly enough on their HNF; their HNF final quota boundary was 4 and he was ranked at 5.]

✓ Appoints Singh to next available preference (General)

- **General's quota is now full**

General picked up 3 of their first 4 candidates who were ranked at positions 2, 3 and 4. Candidate ranked at position 1 (Patel) was matched to hospitals which was higher on her CPL. General went down to the 4th ranked candidate on their HNF to fill their 3 positions, making their hospital's final quota boundary **Four (4)**. Any candidate now ranked below 4 would not be matched to General.

✓ Appoints Jones to next available preference (St George)

- Smith loses first preference (General)

[Smith missed out on his first preference (General) as the hospital did not rank him highly enough on their HNF, their HNF final quota boundary was 4 and he was ranked at 5.]

- Hotham loses first and only preference (General) and is now an unmatched candidate

[Cynthia Hotham was convinced that General Hospital would rank her as a candidate, and that she would be matched there. Although General Hospital did rank her she fell below their HNF final quota boundary, which was 4, she was ranked at 7 on their HNF. Cynthia Hotham should have considered ranking more hospitals, which may have prevented her being unmatched.]

✓ Appoints Smith to next available preference (St George)

- St George has exhausted all preferences and only filled 3 positions, St George now have one unmatched position.

[Hospital should consider ranking as many candidates as possible to fill their quota. Hospitals should not rank candidates they deem unsuitable.]

Rank	Royal (2 posts)
1	Harris ✓
2	Patel ✗
3	Hong ✗
4	Lee ✓ (2 Matched Candidates - Quota Full)
5	Singh
6	Jones
7	
8	
9	

FINAL Quota Boundary

Rank	General (3 posts)
4	Patel ✗
2	Hong ✓
3	O'Brien ✓
4	Singh ✓ (3 Matched Candidates - Quota Full)
5	Smith
6	Lee
7	Hotham
8	Harris
9	

FINAL Quota Boundary

Rank	St George (4 posts)
1	Patel ✓
2	O'Brien ✗
3	Harris ✗
4	Jones ✓
5	Lee ✗
6	Smith ✓ (HNF exhausted, quota not filled)
7	UNMATCHED POSITION
8	
9	

Final Allocation:

Positions Available	Hospital		
	Royal	General	St George
1	Harris	Hong	Patel
2	Lee	O'Brien	Jones
3		Singh	Smith
4			<i>Unmatched position</i>

Selection completed

Candidate's Priority Lists (CPL) are:

E. Harris	J. Hong	C. Hotham	S. Jones	L. Lee	S. O'Brien	N. Patel	R. Singh	B. Smith
1 Royal ✓	1 General ✓	1 General	1 Royal	1 Royal ✓	1 General ✓	1 St George ✓	1 St George	1 General
2 General	2 Royal	2	2 St George ✓	2 General	2 St George	2 Royal	2 Royal	2 St George ✓
3 St George	3 St George	3	3	3 St George	3 Royal	3 General	3 General ✓	3