UGC FARMACIA GRANADA

DI-050

21st Congress of eahp european association of hospital pharmacists making the difference in medication

COMPARATIVE STUDY OF QUALITY INDICATORS OF PRESCRIPTION AT HOSPITALS IN A PUBLIC HEALTHCARE SYSTEM

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OBJETIVES & BACKGROUND

Our Public Healthcare System have developed some quality indicators (QIs) based on the selection of drugs that support better evidence of efficiency in areas of prescribing where more deviations were detected in the past.

To describe the variability of prescription QIs in a public healthcare system, and its evolution per year.

METHODS

Descriptive retrospective observational study. Variability of QIs in hospitals with more than 500 beds from 2012 to 2015 was measured.
The unit of measure was defined daily doses (DDD) using QIs based on the rational use of medicines criteria.

QIs included:

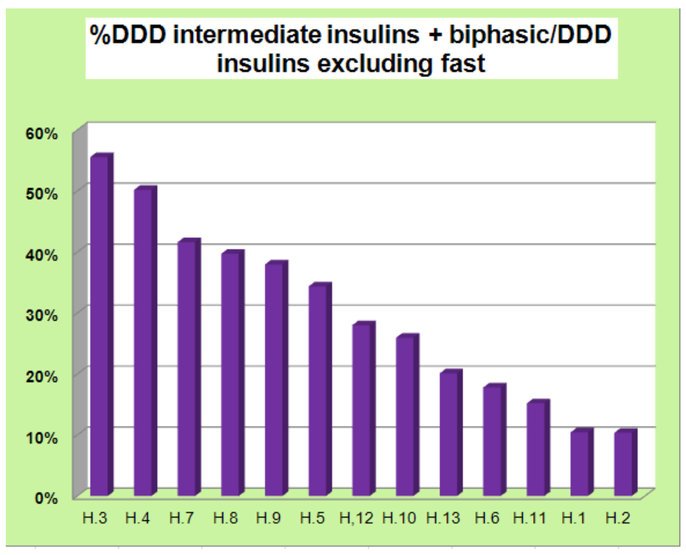
- QI1→ %omeprazole DDD/DDD proton pump inhibitors (PPIs).
- QI2→ %DDD gliclazide+glipizide+glimepiride/DDD antidiabetic excluding insulin and metformin.
- QI3→ %DDD intermediate insulins + biphasic/DDD insulins excluding fast.
- QI4→ %DDD simvastatin/DDD lipid lowering drugs.
- QI5→ %DDD ACE inhibitors/DDD renin-angiotensin-aldosterone-system inhibitors.
- QI6→ %DDD SSRIs/DDD second generation antidepressants.
- QI7→ %DDD citalopram + fluoxetine + sertraline/DDD SSRIs.
- QI8→ %DDD alendronic/DDD fracture prevention drugs.

The coefficient of variation allows comparing variability in QIs between hospitals during the study period.

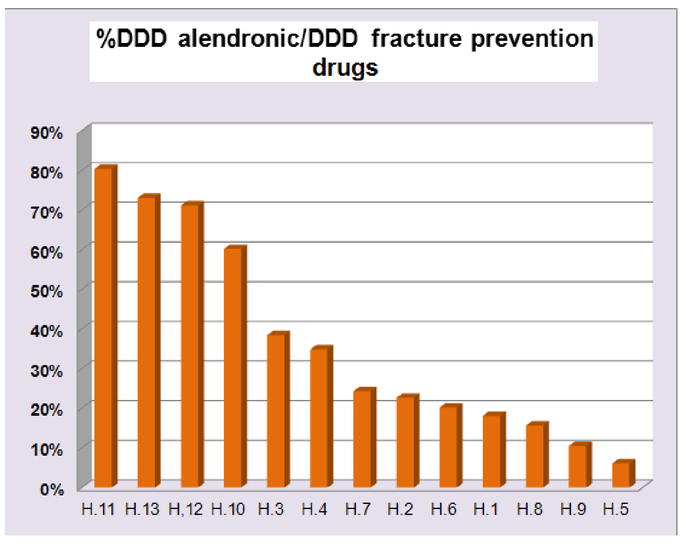
RESULTS

- 13 hospitals were studied. Data obtained are reported in Table.
- There is a high variability in prescription QI between studied hospitals which increases over the years, especially in diabetes and drugs for hip fracture prevention.
- In groups of PPIs and antidepressants variability is smaller.

	% omeprazole DDD/DDD proton pump inhibitors				%DDD gliclazide+glipizide+glimepiride/DDD antidiabetic excluding insulin and metformin				%DDD intermediate insulins + biphasic/DDD insulins excluding fast				%DDD simvastatin/DDD lipid lowering drugs			
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
ANDALUCIA	**81,71%**	**82,43%**	**83,05%**	**83,18%**	**21,39%**	**20,49%**	**17,00%**	**17,13%**	**29,64%**	**31,90%**	**31,59%**	**29,05%**	**30,74%**	**33,11%**	**35,96%**	**35,90%**
H.1	88,72%	88,48%	88,06%	86,71%	23,91%	26,36%	25,43%	22,77%	15,42%	17,80%	10,57%	10,43%	33,21%	32,01%	31,32%	31,30%
H.2	77,13%	77,24%	74,30%	74,45%	13,34%	15,07%	12,72%	14,36%	14,34%	18,19%	13,68%	10,36%	29,75%	31,61%	28,35%	36,18%
H.3	83,13%	81,26%	78,45%	80,13%	25,11%	39,35%	37,78%	34,89%	41,82%	59,01%	65,64%	55,57%	42,29%	38,36%	41,45%	44,55%
H.4	90,11%	89,80%	90,15%	89,24%	25,46%	41,78%	39,12%	38,27%	53,93%	53,57%	52,63%	50,20%	46,01%	46,40%	53,28%	51,20%
H.5	81,23%	82,53%	81,17%	77,62%	37,99%	26,36%	23,64%	14,60%	45,26%	34,43%	27,95%	34,36%	20,71%	21,13%	23,59%	25,18%
H.6	83,05%	84,84%	86,14%	86,28%	16,38%	3,10%	4,76%	5,82%	29,90%	27,56%	19,35%	17,79%	23,27%	25,14%	25,69%	29,71%
H.7	84,01%	85,19%	88,17%	88,71%	14,93%	11,86%	9,38%	3,74%	43,31%	46,17%	46,43%	41,62%	31,47%	39,58%	44,81%	40,74%
H.8	75,27%	79,55%	84,36%	84,58%	42,17%	35,29%	27,85%	19,22%	40,90%	45,41%	48,22%	39,72%	23,45%	27,78%	38,37%	37,43%
H.9	82,40%	83,35%	85,24%	86,17%	22,10%	22,37%	22,19%	21,10%	38,65%	42,63%	42,16%	37,37%	28,63%	31,29%	28,22%	30,33%
H.10	80,87%	82,29%	80,55%	81,76%	23,44%	22,03%	18,77%	19,86%	37,84%	29,93%	21,37%	25,94%	21,60%	23,61%	18,89%	17,83%
H.11	76,23%	78,65%	79,80%	76,49%	18,09%	14,33%	9,85%	3,28%	19,59%	13,54%	16,42%	15,20%	29,69%	27,47%	28,19%	29,30%
H,12	75,73%	80,77%	79,08%	81,22%	27,60%	30,76%	23,56%	20,69%	32,89%	33,35%	32,91%	28,00%	23,34%	21,83%	25,59%	25,14%
H.13	84,59%	87,45%	85,11%	82,81%	14,05%	24,51%	10,18%	5,10%	13,94%	19,08%	16,23%	20,10%	32,75%	33,88%	34,33%	35,00%
MAX	90,11%	89,80%	90,15%	89%	42,17%	41,78%	39,12%	38%	53,93%	59,01%	65,64%	56%	46,01%	46,40%	53,28%	51%
MIN	75,27%	77,24%	74,30%	74%	13,34%	3,10%	4,76%	6%	14,34%	17,80%	10,57%	10%	20,71%	21,13%	18,89%	25%
MEAN	83,05%	83,35%	85,10%	83%	23,91%	26,36%	22,92%	19%	40,30%	42,63%	35,06%	36%	29,75%	31,61%	30,14%	36%
COEFFICIENT OF VARIATI	5,77	4,61	5,46	5,68	37,54	41,98	52,95	55,47	39,95	40,47	55,27	49,68	26,03	24,23	29,59	26,39
OBJETIVES	>74-90%	> 76-90%	> 76-90%	> 79-90%	>20-54%	> 10-40%	> 10-40%	> 10-40%	>23-50%	> 10-40%	> 10-40%	> 13-40%	>27-45%	> 20-45%	> 20-45%	> 28-45%



	%DDD ACE inhibitors/DDD renin-angiotensin-aldosterone-system inhibitors				DDD SSRIs/DDD second generation antidepressants				%DDD citalopram + fluoxetine + sertraline/DDD SSRIs				%DDD alendronic/DDD fracture prevention drugs			
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
ANDALUCIA	**44,94%**	**46,72%**	**48,19%**	**48,13%**	**64,23%**	**61,95%**	**59,14%**	**58,02%**	**62,56%**	**62,10%**	**63,25%**	**63,91%**	**47,56%**	**46,52%**	**52,08%**	**21,85%**
H.1	45,76%	44,43%	46,11%	47,88%	66,06%	63,61%	58,79%	57,90%	50,35%	50,75%	50,33%	54,51%	51,90%	37,83%	38,19%	18,10%
H.2	48,22%	49,33%	53,63%	56,49%	66,80%	63,21%	57,03%	54,93%	52,97%	52,81%	55,15%	55,89%	36,59%	37,86%	49,66%	22,66%
H.3	46,01%	44,86%	51,04%	51,68%	67,21%	64,36%	63,14%	64,41%	67,60%	68,20%	68,48%	65,97%	61,85%	60,24%	64,68%	38,46%
H.4	44,32%	51,53%	53,76%	61,21%	62,83%	60,87%	58,38%	60,23%	74,94%	76,50%	75,38%	78,43%	60,30%	62,35%	64,03%	34,85%
H.5	31,21%	32,73%	31,68%	33,00%	61,77%	57,83%	53,33%	53,86%	51,14%	52,06%	53,75%	53,55%	30,15%	22,89%	25,77%	6,09%
H.6	31,71%	29,61%	25,82%	26,63%	68,56%	67,57%	61,66%	58,85%	71,43%	68,03%	65,81%	64,67%	51,80%	56,35%	56,97%	20,17%
H.7	40,75%	54,20%	52,77%	50,30%	61,55%	58,38%	56,91%	55,68%	63,06%	60,60%	62,18%	60,14%	42,62%	48,41%	58,04%	24,31%
H.8	37,38%	38,47%	45,20%	43,40%	64,49%	66,30%	65,12%	64,75%	57,56%	54,39%	58,93%	63,01%	56,57%	56,77%	60,67%	15,67%
H.9	41,59%	49,90%	48,73%	43,22%	68,73%	69,83%	63,98%	63,93%	73,41%	71,22%	68,97%	70,83%	51,09%	46,77%	47,35%	10,52%
H.10	41,32%	48,13%	55,75%	48,34%	59,70%	57,28%	56,37%	55,05%	50,61%	54,75%	56,84%	58,70%	45,22%	36,92%	34,60%	60,22%
H.11	47,52%	48,39%	54,23%	57,65%	59,23%	56,59%	54,78%	53,93%	64,72%	61,07%	61,35%	62,48%	40,80%	27,49%	25,59%	80,43%
H,12	58,09%	56,42%	57,58%	57,50%	59,90%	58,46%	52,17%	52,81%	52,90%	55,75%	57,80%	61,78%	57,05%	53,67%	71,72%	71,15%
H.13	53,21%	56,22%	50,91%	47,03%	65,31%	66,33%	64,56%	62,35%	44,82%	44,58%	46,39%	44,55%	67,72%	57,30%	62,87%	73,09%
MAX	48,22%	54,20%	59,76%	61%	68,73%	69,83%	65,12%	65%	74,94%	76,50%	75,38%	78%	61,85%	62,35%	64,68%	80%
MIN	31,21%	29,61%	25,82%	27%	61,55%	57,83%	53,33%	54%	50,35%	50,75%	50,33%	54%	30,15%	22,89%	25,59%	6%
MEAN	41,59%	44,86%	49,89%	48%	66,06%	63,61%	59,39%	59%	63,06%	60,60%	60,56%	63%	51,80%	48,41%	49,66%	23%
COEFFICIENT OF VARIATI	17,47	18,1	20,23	20,6	5,3	7.25	7,41	7.55	16.81	15,65	13,51	13,75	21,45	27,68	30,27	70,63
OBJETIVES	>38-61%	> 38-58%	> 38-58%	> 45-58%	>65-80%	> 60-80%	> 60-80%	> 60-75%	>44-60%	> 45-72%	> 45-72%	> 53-72%	>53-68%	> 36-70%	> 36-70%	> 15-32%



CONCLUSIONS

In therapeutic groups where new drugs have been incorporated (diabetes and fracture prevention), the uncertainty and confusion degree in the management of these drugs increases.

To reduce clinical variability among different hospitals and improve the quality of prescription it would be necessary to design and implement new strategies