



## Adherence to hand hygiene in a nephrology service

Adesão à higienização das mãos em um serviço de nefrologia

Cumplimiento de higiene de manos en un servicio de nefrología

Ivonizete Pires Ribeiro<sup>1</sup>, Elizana Carvalho Oliveira<sup>1</sup>, Ana Maria Ribeiro dos Santos<sup>1,2</sup>, Adélia Dalva da Silva Oliveira<sup>1</sup>, Herica Emília Félix de Carvalho<sup>3</sup>

### How to cite this article:

Ribeiro IP, Oliveira EC, Santos AMR, Oliveira ADS, Carvalho HEF. Adherence to hand hygiene in a nephrology service. Rev Pre Infec e Saúde [Internet]. 2020;6:9310. Available from: <http://www.ojs.ufpi.br/index.php/nupcis/article/view/> DOI: <https://doi.org/10.26694/repis.v6i0.9310>

<sup>1</sup> University Center UNINOVAFAPI, Nursing Department, Teresina, Piauí, Brazil.

<sup>2</sup> Federal University of Piauí, Nursing Department, Teresina, Piauí, Brazil.

<sup>3</sup> College of Nursing of Ribeirão Preto, University of São Paulo, Fundamental Nursing Department, Ribeirão Preto, São Paulo, Brazil.

### ABSTRACT

**Objective:** To evaluate adherence to hand hygiene in a nephrology service. **Method:** Descriptive study, performed in a public hospital in Teresina, Piauí, Brazil. Adherence percentage to five moments of hand hygiene was collected in a database of Center for Patient Safety in the period from March to April 2019. **Results:** Adherence rate varied in all the periods analyzed, reached 25% of adherence, and there were almost no stabilization periods. By relating the variation of adherence rate with the activities performed in the same period, it may be inferred that the greatest number of professionals who participated in educational activities on hand hygiene influenced in the increased adherence rate. **Conclusion:** The adherence was low; therefore, it is necessary that educational interventions be constant and not punctual so that hand hygiene becomes routine inherent in care.

### DESCRIPTORS

Patient Safety; Hand Hygiene; Nephrology; Renal Dialysis.

### Corresponding author:

Ivonizete Pires Ribeiro  
Address: Rua Vitorino Orthiges Fernandes,  
6123, Uruguai  
CEP 64073-505 – Teresina, PI, Brazil  
Telephone: +55 (86) 2106-0700  
E-mail: [ivonizeteribeiro@gmail.com](mailto:ivonizeteribeiro@gmail.com)

Submitted: 2019-08-24

Accepted: 2020-01-30

Published: 2020-04-01

## INTRODUCTION

Approximately 42.7 million of patients, in the whole world, suffer from disabling adverse effects or die as a result of failures during care in health services, pointing out patient safety as a global and public health issue.<sup>1</sup>

Considering this, it is necessary that patient safety be a goal instituted and incorporated by all the professionals of health staff so that they perform their activities free of adverse events in care provided in health care.<sup>2</sup>

Patient safety is defined as the act of avoiding, preventing or improving to the maximum adverse events or damage caused during hospital care, regardless care sector.<sup>3</sup>

Among patient safety measures, of promotion of health care, Hand Hygiene (HH) is a simple measure that ensure the quality of care and the protection against various diseases, against health care-associated infections, including for health professionals.<sup>4</sup>

HH is a spontaneous and personal action; therefore, the awareness of each professional is necessary for the exercise of care practices.<sup>5</sup> In this sense, HH must be incorporated in all the actions of permanent education, both reinforcing the concepts, reciprocity and executing technique. For HH technique, an alcoholic product, or water and liquid soap can be routinely used in case of visible hand dirtiness.<sup>6</sup>

For an effective HH, the applied technique and the duration of procedure are essential. Moreover, before initiating the technique, the removal of adornments (bracelets, rings and watches) is required because they can be microorganism reservoirs and make it difficult to remove the hand dirtiness.<sup>6</sup>

The global goal of HH is still a challenge in health institutions. Changes in organizations and in professional actions should be reviewed, especially given the need for performance of good practices that aim at patient safety and the quality in health services, and HH is one of its main points.<sup>7</sup>

Training strategies that can clarify and strengthen health professional conduct regarding indications, recommendations and situations/moments in which HH should be performed, as well as concerning the choice of type to be taken and the products to be used, should be prioritized and planned with permanent actions in health care institutions.<sup>8</sup>

By considering that HH protocol must be implemented in the hospital as a whole, the literature presents data about adherence to HH in a general way, so there is the necessity in obtaining more specific sectorial data and identifying what strategies used for such sectors increase adherence to HH. In order to fill this gap, the current study aim to evaluate adherence to HH by health professionals in a nephrology service at a public hospital.

## METHOD

Descriptive study, based on secondary data, performed in a public hospital in Teresina, Piauí, Brazil. The study consisted of all the professional observation records in relation to five moments of Hand Hygiene (HH) in the nephrology clinic, from December 2017 to April 2019. The information about the five moments of HH is collected by means of an instrument recommended by Brazilian Health Regulatory Agency<sup>9</sup> and placed in the database of Center for Patient Safety every month. This instrument is applied, routinely, by a nursing professional of each hospital sector, and, in average, ten professionals are observed per week, it may be in the morning or afternoon shift at any time in their care activities.

To collect data, all the professional observation records on HH were used. With the records in hands, the percentage of adherence to HH was calculated in nephrology service. To organize the data collected, Microsoft Excel software, XP version (Microsoft Corp., USA) was used, and the data were presented in a graph by means of percentages. The data collection was performed in the period from March to April 2019.

The ethical aspects arranged in Resolution 466/12 of Brazilian National Health Council were assured. The research project was approved under opinion No. 3,147,707.

## RESULTS

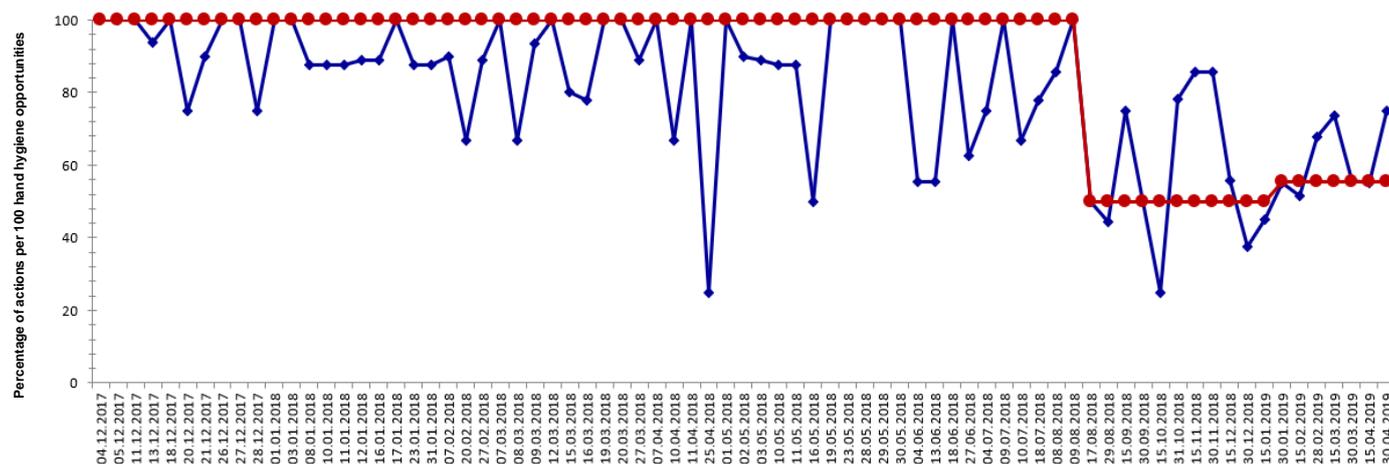
Adherence to Hand Hygiene (HH) in nephrology service had variations based on measures adopted to reach proper practices. It was observed that in December 2017, rates of adherence to HH were above 70% in the five performed observations, reaching, at some times, 100% of adherence. In January 2018, this rate reached stabilization in the period between days 8 and 16, with adherence rate above 80%. In February, adherence rate was below 70%. In March, adherence rate, which was 65%, rose to 100%; next, it somewhat stabilized, got greater than 70% and, at the end of the month, reached 100% again (Graph 1).

In April 2018, the rate went into decline, first with 90%, after 70% and, lastly, 25%, the lowest

adherence rate observed in the period analyzed, repeated in September. In May, the rate increased and reached 100%, subsequently presented a slight decline and reached 90%, decreased a little more and reached 50% and, next, rose and reached 100% by the end of the month. In the beginning of June, adherence rate was 55%, rose to 100% and, at the end of the month, reached 60%. In July, adherence rate began with 100% and dropped to 65% (Graph 1).

After July 2018, adherence rates could not reach, at any moment, 100% of adherence, so the median dropped to 50%. In August, the rate reached 45%; in September, rose to 75% and declined again and reached 25%. In October and November, the rate went up again, reaching 80 and 85%, respectively. In December, it fell in half, reaching 40%. In January and February 2019, the rate increased and got around 50 and 55%, respectively (Graph 1).

**Graph 1** – Percentage of adherence to hand hygiene in nephrology service (12/2017–04/2019). Teresina, Piauí, 2019.



Among HH educational activities of nephrology service in the period analyzed, there are: hand hygiene goals, lectures on hand hygiene, meeting on hand

hygiene, hand hygiene and hand hygiene educational practice (Table 1).

**Table 1** – Hand Hygiene Educational Activities of Nephrology Service – HGV. Teresina, Piauí, 2019.

Activity	Day	No. of participants out of a total of 70 in the sector
Hand hygiene goals	01.24.2018	17
Lectures on hand hygiene	01.30.2018	13
Meeting on hand hygiene	03.08.2018	7
Hand hygiene	03.07.2018	5
Hand hygiene	05.28.2018	4
Hand hygiene	05.23.2018	2
Meeting on hand hygiene	09.21.2018	9
Hand hygiene educational practice	11.08.2018	14
Hand hygiene educational practice	11.07.2018	7
Hand hygiene educational practice	11.05.2018	10
<b>Total</b>	<b>12 days</b>	<b>88</b>

## DISCUSSION

Supervising adherence to Hand Hygiene (HH) prevents the transmission of pathogens and, above all, the incidence of health care-associated infections. The practice is considered a simple and important measure in reducing the mortality among patients.<sup>10</sup>

Rate of adherence to HH in nephrology service varied in all the periods analyzed, reached 25% of adherence, and there were almost no stabilization periods of this rate. The instability and low rate of adherence to HH signal problems that should be investigated in order that, subsequently, strategies to increase rate of adherence to HH to be implemented.

By relating the variation of adherence rate with the activities performed at the same period, it was highlighted that, in January 2018, rate of adherence to HH was above 80%, and the activities performed in this month obtained the greatest number of participating professionals. It may be inferred that the greatest number of professionals that participated in the educational activities on HH influenced in the increased HH rate. While this relation can be observed with the data displayed here, it is worth mentioning that other issues may, also, have influenced in this increase.

National<sup>11-12</sup> and international<sup>13-14</sup> studies present variations between adherence rates reported to HH by health professionals, but different factors can be related to low adherence. Among them, the following are highlighted: institutions with limited

resources, overcrowded, with inappropriate or no spatial division between beds; physical structure, which includes sinks outside the recommended standard; use of gloves; skill, attitude and motivation; relevance referred by health professional for risk of not being in accordance with the recommendations for HH, in addition to training received and the time spent for it.<sup>11-12</sup>

Studies point out, moreover, factors referring to inadequate flux of patient care due to overcrowding, workload, stress, performance of actions with high risk of cross-transmission of pathogens, lack of knowledge about HH protocol, lack of positive example from their superiors, bad habits, simple forgetfulness, irritation and dryness of the skin caused by successive use of products.<sup>15-16</sup>

In this study, it is also observed that as from August 2018, adherence rates cannot reach, at any time, 100%, and the educational activities were reinforced in these months, especially in November of the said year, and this reflected in the increased adherence to HH.

The technical procedure in itself of HH is easy to understand and reproduce; however, it was verified, through observation, that health professionals do not perform the technique or do not perform it correctly as the protocol recommends. The low adherence to HH before the educational activities may not be directly related to theoretical knowledge, but to the incorporation of this non-habit in the daily

practice. It is observed that during the activities of stimulus to HH, the increased adherence often occurs, and then it returns to baseline levels generally six months after the activities. This reflects an adversity not only structural but also of awareness and professional ethics.<sup>17</sup>

It is observed that rate of adherence to HH increases after the educational activities; however, the stimuli provoked repetition of their actions only in the period of interventions, and the reduction occurred in the later period. This happened although the strategies have been innovative and well-built by the group of professionals at the hospital, especially those in nephrology itself.

Daily HH practice and personal belief have more influence in adherence to HH when compared to knowledge about precautionary and infection control attitudes. However, there are various reasons that negatively impact adherence, such as lack of inputs, skin damage, forgetfulness and lack of knowledge, skepticism and lack of examples from colleagues and leaders, among others.<sup>18</sup>

In this perspective, Brazilian Ministry of Health instituted actions of risk management and the five moments as essential for HH, since the incorporation of these components is critical to control health care-associated infections, given the need of adherence to HH as measure that prevents cross-transmission of microorganisms.<sup>6</sup>

It is considered that the incentive for permanent education on infection control in health institutions should be assumed by Committee of Hospital Infection Control looking for alternatives for promotion of efficient and lasting changes. Nevertheless, under another perception, adherence to HH is a voluntary and individual action that depends on the decision of each professional.<sup>19</sup>

In this logic, rate of adherence to HH is influenced, among other factors, by the peculiar complexity of each professional who performs the care. Thus, there was the increased adherence when the strategies were incorporated, more precisely after

the performance of procedures, and this can be explained by the professional concern about not exposing himself to risk of acquiring the disease.<sup>20</sup>

Adequate infrastructure and multidisciplinary and multimodal educational approaches are necessary to increase health professional adherence to HH. In this sense, bringing Service of Hospital Infection Control and Center for Patient Safety closer to health professionals can be an important strategy to form partnerships that develop learning and effectuation of HH practices in order to ensure the quality of care provided in health care, as well as promote patient safety. In this context, there is a need for nurse to appropriate his educational role as essential resource to promote and prevent health care-associated infections.

The main limitation of this study is the non-inclusion of other hospital sectors. Nevertheless, the objective of the study was present adherence to HH in a nephrology service and how the service intervened to promote such adherence. So, studies that present reality and how to intervene to provide a change in this reality are essential to motivate, guide and help in elaborating strategies for prevention of health care-associated infections.

The contributions of this study to public health refer to data of national and international importance. Adherence to HH is a challenge in health services because it presents various factors that compromise its efficacy (structural, logistical, professional, attitudinal). The presented data reflect similar conditions verified in broader studies, but this study innovates when addressing a single clinic and what interventions were performed, and how it reflected in HH adherence graph.

## CONCLUSION

Rate of adherence to Hand Hygiene (HH) was low, and, mainly, it neither followed a pattern nor stabilized. It was, also, observed that greater participation of health professionals in educational activities influenced in increased rate of adherence to

HH. Therefore, it is necessary that the educational interventions be constant and not punctual so that HH becomes routine inherent in care and not a practice based on institutional manuals and protocols. It is worth noting that besides educational interventions, other interventions are necessary such as supply of

inputs, of adequate infrastructure; HH visual incentives (on alcohol gel dispensers, sinks); feedback on percentage of adherence to HH monthly and by professional category and constant assessments on the intervention used and its efficiency in that sector.

## RESUMO

**Objetivo:** Avaliar a adesão à higienização das mãos em um serviço de nefrologia. **Método:** Pesquisa descritiva, realizada em um hospital público em Teresina, Piauí, Brasil. O percentual de adesão aos cinco momentos de higienização das mãos foi coletado no banco de dados do Núcleo de Segurança do Paciente no período de março a abril de 2019. **Resultados:** A taxa de adesão variou em todos os períodos analisados, chegou a 25% de adesão, e quase não houve períodos de estabilização. Ao relacionar a variação da taxa de adesão com as atividades realizadas no mesmo período, pode-se inferir que o número maior de profissionais que participaram das atividades educativas sobre higienização das mãos influenciou no aumento da taxa de adesão. **Conclusão:** A adesão foi baixa, portanto é necessário que as intervenções educacionais sejam constantes e não pontuais para que a higienização das mãos se torne rotina inerente ao cuidado.

## DESCRITORES

Segurança do Paciente; Higiene das Mãos; Nefrologia; Diálise Renal.

## RESUMEN

**Objetivo:** evaluar la adherencia a la higiene de manos en un servicio de nefrología. **Método:** Investigación descriptiva, realizada en un hospital público de Teresina, Piauí, Brasil. El porcentaje de adherencia a los cinco momentos de higiene de manos se recopiló en la base de datos del Centro de Seguridad del Paciente de marzo a abril de 2019. **Resultados:** La tasa de adherencia varió en todos los períodos analizados, alcanzó un 25% de adherencia y casi no hubo períodos de estabilización. Al relacionar la variación en la tasa de adherencia con las actividades realizadas en el mismo período, se puede inferir que el mayor número de profesionales que participaron en las actividades educativas sobre higiene de manos influyeron en el aumento de la tasa de adherencia. **Conclusión:** La adherencia fue baja, por lo tanto, es necesario que las intervenciones educativas sean constantes y no puntuales de modo que la higiene de las manos se convierta en una rutina inherente a la atención.

## DESCRIPTORES

Seguridad del Paciente; Higiene de las Manos; Nefrología; Diálisis Renal.

## REFERENCES

1. World Health Organization Medication without harm-global patient safety challenge on medication safety. 2017. [cited 2019 Sep 22]. Available from: <http://www.who.int/patientsafety/medication-safety/medication-without-harm-brochure/en/>
2. Miranda AP, Carvalho AKO, Lopes AAS, Oliveira VRC, Carvalho PMG, Carvalho HEF. Contribuição da enfermagem à segurança do paciente: revisão integrativa. SANARE [Internet]. 2017 Jun [cited 2019 Jul 02]; 16(1):109-117. Available from: <https://sanare.emnuvens.com.br/sanare/article/view/1101>
3. Rigobello MCG, Carvalho REFL, Cassiani SHB, Galon T, Capucho HC, Deus NN. The climate of patient safety: perception of nursing professionals. Acta paul. Enferm [Internet]. 2012 Jun [cited 2019 Jul 02]; 25(5):728-735. Available from: <http://dx.doi.org/10.1590/S0103-21002012000500013>
4. Brasil. Agência Nacional de Vigilância Sanitária (ANVISA). Manual orienta profissionais de saúde sobre a higiene das mãos. Brasília: Anvisa; 2016. Available from: <http://www.brasil.gov.br/noticias/saude/2016/05/manual-orienta-profissionais-de-saude-sobre-a-higiene-das-maos>
5. Scherer JS, Gleit PM, Negeliskii C, Bueno ALM. Higienização das Mãos: Adesão dos Profissionais Antes e Após Programa de Capacitação. J Health Sci [Internet]. 2017 Jun [cited 2019 Jul 02]; 19(2):126-129. Available from: <http://dx.doi.org/10.17921/2447-8938.2017v19n2p126-129>
6. Brasil. Agência Nacional de Vigilância Sanitária (ANVISA). Medidas de Prevenção de Infecção Relacionada à Assistência à Saúde. Brasília, DF: Anvisa; 2017. Available from: <http://portal.anvisa.gov.br/documents/33852/3507912/Caderno+4+-+Medidas+de+Preven%C3%A7%C3%A3o+de+Infec%C3%A7%C3%A3o+Relacionada+%C3%A0+Assist%C3%A2ncia+%C3%A0+Sa%C3%BAde/a3f23dfb-2c54-4e64-881c-fccf9220c373>
7. Paula DG, Pinto FF, Silva RFA, Paula VG. Estratégias de adesão à higienização das mãos por profissionais de saúde. R Epidemiol Control Infec [Internet]. 2017 Jun [cited 2019 Jul 02]; 7(2):113-121. Available from: <http://dx.doi.org/10.17058/reci.v7i2.7731>
8. Oliveira AC, Pinto SA. Participação do paciente na higienização das mãos entre profissionais de saúde. Rev bras enferm [Internet]. 2018 Jun [cited 2019 Jul 02]; 71(2):280-285. Available from: <http://dx.doi.org/10.1590/0034-7167-2016-0124>

9. World Health Organization (WHO). Hand hygiene technical reference manual: to be used by health-care workers, trainers and observers of hand hygiene practices. Geneva: WHO; 2009. Available from: [http://apps.who.int/iris/bitstream/10665/44196/1/9789241598606\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/44196/1/9789241598606_eng.pdf)
10. Oliveira AC, Paula AO. Intervenções para elevar a adesão dos profissionais de saúde à higiene de mãos: revisão integrativa. *Rev Eletr Enf* [Internet]. 2013 Jun [cited 2019 Jul 02]; 15(4):1052-60. Available from: <http://dx.doi.org/10.5216/ree.v15i4.21323>
11. Bathke J, Cunico PA, Maziero ECS, Cauduro FLF, Sarquis LMM, Cruz EDA. Infraestrutura e adesão à higienização das mãos: desafios à segurança do paciente. *Rev. Gaúcha Enferm* [Internet]. 2013 Jun [cited 2019 Jul 02]; 34(2):78-85. Available from: <http://dx.doi.org/10.1590/S1983-14472013000200010>
12. Zottele C, Magnago TSBS, Dullius AIS, Kolankiewicz ACB, Ongaro JD. Hand hygiene compliance of healthcare professionals in an emergency department. *Rev. esc. enferm. USP* [Internet]. 2017 Jun [cited 2019 Jul 02]; 51(1):1-8. Available from: <http://dx.doi.org/10.1590/s1980-220x2016027303242>
13. Tyagi M, Hanson C, Schellenberg J, Chamarty S, Singh S. Hand hygiene in hospitals: an observational study in hospitals from two southern states of India. *BMC Public Health* [Internet]. 2018 [cited 2019 Jul 02]; 18(1):1-9. Available from: <https://doi.org/10.1186/s12889-018-6219-6>
14. Ceriale C, Vencia F, Nante N, Sancasciani S. Hand hygiene compliance in an Italian hospital: Emma Ceriale, *Europ J Public Health* [Internet]. 2016 Jun [cited 2019 Jul 02]; 26(1):1-10. Available from: <https://doi.org/10.1093/eurpub/ckw174.009>
15. Souza LM, Ramos MF, Becker ESS, Meirelles LCS, Monteiro SAO. Adesão dos profissionais de terapia intensiva aos cinco momentos da higienização das mãos. *Rev. Gaúcha Enferm* [Internet]. 2015 Jun [cited 2019 Jul 02]; 36(4):21-28. Available from: <http://dx.doi.org/10.1590/1983-1447.2015.04.49090>
16. Luciano MNF, Nascimento BB, Nunes EM, Oliveira LFM, Davim RMB, Alves ÉSRC. Adesão à higienização das mãos por profissionais da saúde em uma unidade de terapia intensiva. *Rev. enferm. UFPE online* [Internet]. 2017 Jun [cited 2013 Jul]; 11(10):3764-3770. Disponível em: <http://dx.doi.org/10.5205/reuol.12834-30982-1-SM.1110201709>
17. Karen Patricia Pena Trannin, Cássia Regina Vancini Campanharo, Maria Carolina Barbosa Teixeira Lopes, Meiry Fernanda Pinto Okuno, Ruth Ester Assayag Batista TRANNIN, K. P. P. et al. Adesão à higiene das mãos: intervenção e avaliação. *Cogitare Enferm* [Internet]. 2016 Jun [cited 2019 Jul 02]; 21(2):1-9. Available from: <http://ojs.c3sl.ufpr.br/ojs2/index.php/cogitare/>
18. Abreu RNDC, Melo CPL, Rodrigues AMU, Ferreira RC. Saberes dos discentes de enfermagem sobre segurança do paciente: ênfase na higienização das mãos. *REC* [Internet]. 2017 Jun [cited 2019 Jul 02]; 5(2):193-200. Available from: <http://dx.doi.org/10.17267/2317-3378rec.v5i2.985>
19. Barbosa FS. Higienização das mãos: Monitoração da adesão dos profissionais de saúde numa instituição pública da rede estadual do Rio de Janeiro: um desafio à administração do serviço de controle de infecção hospitalar. *Braz. J. Hea. Rev* [Internet]. 2019 Jun [cited 2019 Jul 02]; 2(2):1313-1322. Available from: <http://brazilianjournals.com/index.php/BJHR/article/view/1350/1222>
20. Oliveira AC, Paula AO, Gama CS, Oliveira JR, Rodrigues CD. Adesão à higienização das mãos entre técnicos de enfermagem em um hospital universitário. *Rev enferm UERJ* [Internet]. 2016 Jun [cited 2019 Jul 02]; 24(2):1-6. Available from: <http://dx.doi.org/10.12957/reuerj.2016.9945>

#### COLLABORATIONS

IPR, ECO, AMRS, ADSO and HEFC: substantial contributions to work conception or design; to data collecting, analysis and interpretation; to writing the article or to its critical review; and to the final version to be published. All the authors agree and take responsibility for the content of this manuscript version to be published.

#### ACKNOWLEDGMENTS

Does not apply.

#### AVAILABILITY OF DATA

Does not apply.

#### FUDING SOURCE

Does not apply.

#### CONFLICTS OF INTEREST

There are no conflicts of interest to declare.