

## Implementation of Biosimilar MABs in Oncology - Role of Pharmacy

### Introduction

Oncology pharmacy teams are key to ensuring the safe, successful and timely adoption of biosimilar monoclonal antibodies (MABs).

The British Oncology Pharmacy Association's (BOPA) position is that biosimilar monoclonal antibodies (MABs) are therapeutically equivalent to the originator molecules (1) and can and should be used for all commissioned indications, provided pharmacovigilance safeguards are in place, e.g. branded prescribing.

BOPA's full position statement is enclosed in appendix 1.

Collaboration is the key to the success of implementation of biosimilar MABs in oncology; there are many key stakeholders, Cancer Vanguard, NHS England, National Pharmaceutical Procurement Groups, notwithstanding clinicians and patients who must all work together. Oncology pharmacy teams are ideally placed to work with all stakeholders to facilitate adoption of biosimilar MABs into the NHS.

This document describes the evidence, recommendations and practical considerations for adoption of biosimilar MABs.

### Background

Biosimilar MABs are biological medicines that are developed to be highly similar to an existing biological medicine. They undergo comprehensive regulatory approval to demonstrate comparability to an existing biological medicine. Like all biological medicines they are subject to pharmacovigilance monitoring, e.g. batch number tracking and must be prescribed by brand name.

The European Medicines Agency (EMA) defines a biosimilar as '*a biological medicinal product that contains a version of the active substance of an already authorised original biological medicinal product (reference medicinal product) (2). Similarity to the reference medicinal product in terms of quality characteristics, biological activity, safety and efficacy based on a comprehensive comparability exercise needs to be established*'. The focus of development of biosimilars is to establish similarity to the reference medicinal product and to meet the same quality standards as reference products.

Smaller sized biosimilar medicines that have less complex biological structures compared with monoclonal antibodies have already been introduced into oncology and haematology practice as supportive therapies for cancer patients. For example granulocyte colony stimulating factors (GCSFs) and erythropoietins (EPOs). The first biosimilar monoclonal antibodies to be widely introduced in the UK were biosimilars of infliximab (Remicade®) used for treatment of several autoimmune inflammatory diseases, including rheumatoid arthritis, Crohn's disease, and ankylosing spondylitis.

In 2017 the first biosimilar monoclonal antibodies to be used for the treatment of cancer(s) will be introduced in the UK; firstly intravenous (IV) biosimilar rituximab(s) for haematological malignancies then IV biosimilar trastuzumab(s) for breast cancers. It is anticipated that over the next decade many more biosimilar MABs will be introduced into clinical practice. These two products represent considerable medicines expenditure in the UK, exceeding £300 Million per annum (3). There is considerable interest in the NHS in ensuring their successful early adoption to gain significant savings and support the introduction of new and innovative cancer medicines.

## Role of Oncology Pharmacists

Oncology pharmacists (which include pharmacists working in haemato-oncology) have a key role in ensuring both the successful introduction and optimum on-going use of biosimilar MABs in cancer treatment. Oncology pharmacists can help commissioners to achieve their goals for implementation and uptake of biosimilar MABs by supporting clinicians and patients in making the decision to use biosimilar MABs. The Oncology pharmacy team provide an interface between the commissioners and clinicians.

Oncology pharmacists will contribute to:

- Medicine optimisation of biosimilars
- Supporting the commissioning of biosimilars
- Ensuring local clinicians are engaged and informed
- Ensuring patients are appropriately educated and informed
- Ensuring any pharmacovigilance processes are followed e.g. monitoring
- Managing the process of switching both initially and in future
- Ensuring optimisation of prescribing, e.g. working with hospital e-prescribing leads to ensure biosimilar rituximab(s) and trastuzumab(s) can be rapidly adopted into the electronic chemotherapy prescribing systems

Whilst oncology pharmacy teams can undertake these tasks, medicines optimisation involves all disciplines so NHS staff will need to work together to achieve optimum use of biosimilar MABs in cancer treatment. Similarly all staff involved in prescribing, dispensing and administration will have responsibilities for pharmacovigilance of Biosimilar MABs.

## Medicines Optimisation

In order to maximise the benefits of biosimilars, patients and clinicians may need to be reassured about their safety and therapeutic equivalence to the originator product. As part of the medicines optimisation process, they should also understand the benefits to the wider NHS.

The National Institute for Clinical Excellence (NICE) medicines optimisation guidelines encourage the development of local process and policies to support the managed introduction of biosimilar MABs into care pathways (4). NICE recommend the identification of clinical champions to take the lead in introducing biosimilars, oncology pharmacists should be these clinical champions alongside consultant haematologists, breast oncologists and specialist nurses.

## Financial Benefit of biosimilars

The savings achieved by rapid adoption of biosimilar MABs represent an opportunity to safeguard NHS budgets. They can help create headroom to ensure that new cancer medicines are affordable and can be funded, thus benefiting patients and clinicians.

The NHS is under considerable financial pressure at a time when there are exciting developments in oncology/haematology medicines, e.g. immuno-oncology products that have the potential to benefit a great number of cancer patients if they can be funded. Oncology pharmacists are ideally placed to bridge the gap between commissioners and clinicians and ensure the maximum financial benefits of rituximab and trastuzumab biosimilars are achieved.

Rapidly realising potential savings will ease pressure on cancer medicines budgets so that commissioners can continue funding new cancer medicines as they are approved by NICE, SMC and the AWMSG.

Potential future changes to the NICE process may mean that not all NICE approved therapies will be funded in a timely fashion (5). In October 2016 NICE and NHS England consulted on changes to the arrangements for evaluating and funding drugs which looked at adding affordability to the NICE decision making process in certain circumstances.

The price discount from originator molecules is unknown, but experience in other therapeutic areas, (rheumatology) suggests that prices would start in the region of a 30% discount from originator NHS price (but final price will be subject to contract negotiations.) This equates to savings of at least £90m on drug costs to the NHS healthcare system.

The National Pharmaceutical Market Strategy Group (PSMG) has a key role in biosimilars in general, not just in cancer. PSMG will lead the contracting/pricing negotiations for the NHS and will work with manufacturers to ensure there is a sustainable competitive market. Oncology pharmacy teams will need to link with PSMG to inform the pre-implementation discussions on factors that impact on pharmacy in practice, e.g. pack sizes, product stability, added value offerings etc.

A final point to consider is that the manufacturers of originator molecules will have the opportunity to lower price and enter the contracting/pricing negotiations alongside biosimilars products.

### Commissioning of Biosimilars

The NHS England document 'What is a Biosimilar Medicine?' (6) outlines the commissioner's current position on biosimilars, '*NHS England supports the appropriate use of biosimilars which will drive greater competition to release cost efficiencies to support the treatment of an increasing number of patients and the uptake of new and innovative medicines.*'

It is predicted that use of biosimilar rituximab will be quickly recommended by NHS England following marketing of biosimilar rituximab products. Commissioning pathways are unclear in rest of the UK, however the SMC states that '*the managed introduction of biosimilar medicines into clinical practice in NHS Scotland is desirable*' (7) and NHS Scotland is supportive of the use of biosimilar medicines (8).

The view of the commissioner is likely to be that biosimilar rituximab and trastuzumab are therapeutically the same as the originator molecule and providers should use the most cost effective approved product (which could include the originator molecule).

It is likely that commissioners will recommend that all new patients are started on intravenous biosimilar MAB and funding for originator molecules could be withdrawn for new patients unless the clinician and patient decide that a biosimilar is not suitable.

There are certain patient groups, for example clinical trial patients and paediatric patients where further understanding is needed, should biosimilars be used instead of the originator product in these groups, or can biosimilars be used instead of the originator product in these groups?

Given that the decision to prescribe a biosimilar medicine rests with the clinician in consultation with the patient, ensuring the adoption of biosimilars for all new patients will require the co-operation of clinicians. In practice there should not be any barriers to new patients starting on biosimilars as they are classed as therapeutically equivalent by the regulators when licensed (1). However patients will need to be given reassurance and education so that they understand the change (see comments on page 4).

A commissioning strategy is already in place to incentivise hospitals in England to switch patients established on originator rituximab and trastuzumab. NHS England published the Hospital Medicines Optimisation CQUIN scheme GE3 (9) which rewards Trusts who achieve high levels of biosimilar prescribing. The CQUIN acknowledges that pharmacist time may need to be funded and discusses how this could be achieved.

## Interchangeability and Substitution

Interchangeability of biosimilars is debated in the literature with different countries' regulatory bodies (10,11,12) adopting different positions; definitions of interchangeability also differ in different countries (13). Interchangeability in the UK context refers to pharmacy being able to automatically substitute any biosimilar product for the originator or another biosimilar without informing the prescriber as the expected clinical outcome is the same. **In the UK, both and NHS England and NHS Scotland have recommended that biosimilars are prescribed by brand name and hence are not interchangeable and cannot be automatically substituted - but they can be switched.** NHS Scotland recommends switching be part of clinician-led management programme that has appropriate monitoring in place (8).

## Reassuring Clinicians and Patients

The question of 'can patients safely be switched?' has caused uncertainty for some clinicians who note that the evidence base for biosimilars is not the same as for the originator molecule. These concerns should be respected and clinicians must be included in discussions on local adoption of biosimilars.

Oncology pharmacists should have a detailed understanding of the evidence for biosimilars to be able to assure both clinicians and patients that choosing biosimilars is the right option. As biosimilars have an essentially similar molecular structure to the originator, the regulatory evidence focuses on assuring that similarity. The more 'similar' a biosimilar is to the originator molecule the lower the need for clinical evidence of similar therapeutic effect. The regulatory process ensures that biosimilars are therapeutically the same as the originator molecule, (quality, safety and effectiveness) at the time of licensing (2). The designation 'biosimilar' is a regulatory term, not a scientific term.

One key point for discussion with clinicians is that the originator biological molecules have already changed due to the natural effect of molecular drift in the reference product following changes in manufacturing processes (12). This means that the reference biological on the market today, e.g. MabThera<sup>®</sup>, could be considered as biosimilar to the original product which underwent clinical trials. NICE state that 'A biosimilar and its reference product is essentially the same biological substance but, just like the reference medicine, the biosimilar has a degree of natural variability' (1). The key message here is that any differences do not affect safety or effectiveness, but are rather the nature of the production of biologic medicines. The same pharmacovigilance processes that need to be introduced for biosimilars need to be in place for existing biologic medicines, e.g. Mabthera<sup>®</sup> (rituximab) should now be prescribed by brand name.

Patients concerns are likely to be simpler, patients will want assurance that biosimilar will not be any less effective in treating their cancer than originator and it is just as safe with no additional adverse effects.

BOPA recommends NHS stakeholders work together to provide National Patient Information Leaflets (PILs) on Biosimilars to avoid duplication of effort and ensure a consistent message is given to patients.

## Safety

The evidence so far suggests biological medicines in general are safe and well tolerated, with the main concern being the potential for immunogenicity (12). They act extracellularly with systemic side effects due to the concentration and pharmacologic effects. At present there appears to be no scientific evidence for any possible clinical adverse effects caused by switching from originator to biosimilar and that adverse reactions are more likely to be batch related and not product related(12). However this is an area of uncertainty for many clinicians, reassurance from on-going pharmacovigilance monitoring is therefore needed.

The fact that there have not been any safety concerns following changes to manufacturing process of originator molecules provides reassurance that biosimilar MABs are safe and effective. However pharmaceutical companies should be encouraged to publish information on the batch to batch similarities of biological products to increase our understanding of the safety of changes to both originator molecules and in time biosimilars. The clinical community would benefit from more open data from manufacturers; BOPA will be encouraging such a move to greater transparency.

Biosimilar rituximab and trastuzumab are likely to be used in combination with chemotherapy so the identification of differences in potential immunogenic reactions, e.g. infusion related reactions, may not be straightforward.

Oncology pharmacy teams are key to ensuring pharmacovigilance monitoring is in place, pharmacy has an essential role in encouraging all practitioners to be responsible for pharmacovigilance. Adverse events must be reported in line with organisational policy and the MHRA Yellow Card Scheme. All biosimilars must be prescribed by brand and batch numbers have to be tracked. The manufacturers' recommendations for infusion rates and monitoring for biosimilars should be followed in the first instance and data on alternative infusion strategies, e.g. unlicensed rapid rituximab infusion may not be transferable (this is discussed in more detail below). One consideration when designing pharmacovigilance strategies is the ability to collect outcomes, i.e. response data, as this may be something that in the longer term is of interest.

### **Capacity Implications of Biosimilars**

Switching is likely to be relatively straightforward for standard IV infusional use of rituximab and trastuzumab. In the absence of evidence, BOPA would encourage following the manufacturers' recommendations for administration rates for each biosimilar product.

Capacity challenges will be presented for providers who have adopted a 'rapid rituximab' infusion schedule as in the first instance biosimilars rituximab infusions should follow SmPC recommendations. Rapid rituximab infusion is 'off-label', so hospitals will have to repeat the same internal governance processes used to make a decision to adopt rapid infusion administration for biosimilar rituximab.

Initially the biosimilars SmPC guidance(s) on administration rates should followed as if the patients were treatment naïve when switching, i.e. use administration rates recommended for cycle 1, 2 etc. when patients are switched. This means patients established on trastuzumab who have had their IV infusion times shortened after the first two cycles will need additional chair time after switching. It may be that patients can be switched and stay on the same infusion rate, but BOPA would recommend that this is only done after close monitoring and clinical audit to ensure it does not cause any additional safety concerns.

Oncology pharmacists can help with reviewing the capacity impact of switching and finding solutions to this issue. Commissioners are likely to recommend the least expensive option is chosen. It is vital that commissioners understand and can calculate costs for the differences in preparation time, administration time and the impact on service capacity and include these costs when making decisions.

There will be additional significant service capacity implications where subcutaneous (SC) formulations have been adopted that commissioners must consider before making any recommendation to use biosimilars in place of SC preparations. BOPA recommends that a full review of the additional chemotherapy service capacity and cost of staffing to provide this capacity must be undertaken as part of considering switching from SC to an IV biosimilar. In addition the impact on patient experience of change in administration route and duration must be considered.

## Pharmacy Managed Introduction/Switching Program

Oncology pharmacists have the potential to make the transition to rituximab and trastuzumab biosimilars successful and timely. There will be pressure from commissioners to ensure rapid uptake of biosimilar rituximab as commissioners will want to maximise savings.

Switching is not likely to be mandated by commissioners as ultimately the decision to switch rests with the prescribing clinician and the patient. However individual service providers may wish to switch, both initially and in future when more biosimilar products are available and local NHS contracts change.

Undertaking a switch program to a biosimilar MAB poses some challenges in practice not least of which is patient education. Pharmacists have an important role in ensuring patients are educated, informed and involved in the decision to switch.

- Oncology pharmacists are able to talk to patients about their treatment and advise them on the use of biosimilars.
- Oncology pharmacists could prepare patient information leaflets (PILs) for patients and coordinate the dissemination of the information. Ideally PILs will be produced once, nationally, and shared.
- Oncology pharmacists can help patients recognise that the clinical evidence for biosimilar rituximab means there is little or no difference from the originator product and that there is extensive NHS guidance and experience on the use of biosimilars.
- Good practice could include the pharmacy team identifying all patients and then supporting oncology and haematology consultants to bring patients into clinic to discuss switching to biosimilar rituximab. (see case study below)

### **Case Study One: Biosimilar Switch (adapted from a rheumatology model)** (see acknowledgements)

The pharmacy team identified all patients on originator molecule Infliximab (Remicade) through the electronic prescribing system. Patients were contacted about potentially switching;

**either** via a letter that explained why the change in the treatment was happening and inviting the patient in to clinic to discuss.

**or** the pharmacist, nurse or consultant discussed the change with the patient at the next treatment appointment.

Consultant clinic time is limited, having a pharmacist come into clinic to support the consultant in discussions with the patient can facilitate successful switch.

The key to a successful switch programme is to ensure that patients are involved in their treatment decisions and switching should follow the principles of shared decision making. Patients should be involved in the decision to switch and understand why it is being done and why it is important. Patients who are initially reluctant to switch should have their wishes respected but a successful consultation with a pharmacist can help explore the reasons for reluctance and provide assurance as needed. Fear of not getting the best medicine and concerns over efficacy are often a factor, patients may worry that because the biosimilar MABs is cheaper it is not as effective.

Collecting feedback from patient experience of a switch program would help to ensure that a patient centred approach has been taken and provide intelligence to inform future programmes.

Undertaking this work has resource implications for oncology pharmacy, the NHS England CQUIN acknowledges that pharmacist time may need to be funded and discusses how this could be achieved.

## Practical Considerations: Electronic Prescribing Systems

Electronic prescribing of cancer medicines is now well established in the UK, so any new cancer medicine will need to be prescribed via the electronic chemotherapy prescribing system. A separate drug file will be needed on the chemotherapy prescribing system to ensure prescribing is undertaken by brand name. Hospitals will need to agree a strategy for adding or changing approved protocols and regimens on the electronic system to include the biosimilar in place of originator molecule in every regimen. Pharmacy teams will need time to implement these changes as the work in setting up and changing electronic prescribing systems is not inconsiderable; therefore early planning and preparation is recommended. This will also apply for future switches between biosimilars following contract changes.

### **Case Study Two: Changing Electronic Prescribing Systems to Accommodate Biosimilar Rituximab**

The system manager has reviewed the time and work needed to change the Network ChemoCare® to allow prescribing by brand for biosimilar rituximab when it is introduced. There are currently approximately 20 separate regimens that contained rituximab. The steps needed are:

1. Create new drug file for the biosimilar brand (approx. 60 to 90mins), have this verified and released, (approx. 60 to 90mins). Total time 3 hours or 180 minutes.
2. Decision on how the brand will be introduced is needed before changing protocols as can:
  - a. **either** create duplicated version of every protocol with new brand, so both are available
  - b. **or** substitute the new drug file for the existing drug file in each protocol.
3. Option **a.** takes 60 minutes (can copy the existing protocol) option **b.** takes 15 minutes.
4. Major factor is time needed for new or amended protocol to be verified and released, this takes 30 minutes but rate limiting step is availability of clinician/pharmacist to release (up to 2 weeks). A potential problem with option b is that the amended protocol is unavailable whilst awaiting release so this could affect clinical practice.
5. Therefore total time estimated for 20rituximab containing regimens is:
  - a. To create duplicate protocols =  $180 + (60 + 30) * 20 = 1,980$  minutes or 33 hours.
  - b. To substitute in current protocol =  $180 + (15 + 30) * 20 = 1,080$  minutes or 18 hours.

We can see that there is a need for considerable amount of pharmacy time\* needed to set up just one brand of biosimilar plus time needed for on-going maintenances of regimens and of course this work needs to be repeated for each brand.

\*Note other electronic prescribing systems, e.g. ARIA® may take varying amounts of time, and varying local configurations of the ChemoCare® system may mean this example is an underestimate of time needed, so local benchmarking of time to change electronic prescribing systems is recommended.

## Multiple versus Single Regimens

One practical challenge that will need to be addressed is that having two similar but different versions of every protocol on the prescribing system presents a risk as it could lead to prescribing errors and confusion over which patients are on biosimilar and which are on originator brand. Therefore from a practical perspective hospitals may wish to explore a switch date where it is agreed that all patients are changed over and only one product is maintained on the prescribing system. For this to happen patients will need to have been informed of the proposed switch and had a chance to discuss the changes; again this is a role oncology pharmacy teams can deliver.

This will involve a considerable amount of work in accessing and changing every patient's chemotherapy plan to change the regimen.

It may be that trying to maintain only one product is too ambitious, as clinicians may not wish to switch existing patients. Therefore a clear understanding of the risks, (e.g. internal risk assessment, of dual products both on the e-system and on the shelf in pharmacy) must be made clear to relevant clinicians and all key stakeholders.

### **Practical Considerations: Providers of Homecare and Ready Made Products**

Any homecare providers should be informed of the benefits of a switch to biosimilar MABs and if necessary the hospital organisation should establish a new Service Level Agreement (SLA) that includes the new protocol, or an addendum to the existing SLA. Liaison with regional procurement specialists is recommended to ensure the homecare service offered is appropriate in terms of service level, quality or choice of provider. It may be an NHS commissioned homecare service is preferable.

Care should be taken for patients being administered biosimilars via homecare services as they may attend hospital appointment less frequently. Therefore processes need to be in place to ensure that adverse event monitoring and reporting are not compromised.

Sourcing of ready prepared products, e.g. to support dose banding can include biosimilars and will need consideration given to practical aspects, such as storage and stability of products as well as ensuring compliance with Quality Assurance Standards (14).

### **Conclusions**

BOPA endorses the use of biosimilar monoclonal antibodies in oncology and haematology settings.

BOPA believes oncology pharmacists are key to ensuring the successful and rapid adoption of rituximab and trastuzumab biosimilars into clinical practice and ensuring pharmacovigilance monitoring is in place, e.g. biosimilars are prescribed by brand and batch numbers are tracked

BOPA recommends that hospital governance groups with responsibility for medicines optimisation discuss how the oncology pharmacy team(s) can support biosimilars introduction in each organisation. Ideally oncology pharmacists in hospitals will lead any project teams looking at switching. For example a working party could be created within hospitals for the implementation of biosimilars. This could include a pharmacist, oncologist, haematologist, senior nurse and directorate manager and would allow the workload to be shared appropriately.

BOPA recommends that commissioners work with their oncology pharmacists who can engage the prescribing clinicians and patients to support the successful implementation of biosimilar MABs. Commissioners must have an appreciation of the practical considerations of switching.



## References

1. National Institute for Health and Care Excellence: NICE's biosimilars position statement, 2015. Available at <https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/NICE-technology-appraisals/biosimilars-statement.pdf> Last accessed 28.11.16
2. European Medicines Agency (EMA) Guidance on biosimilar medicines, 23 October 2014. Available at [http://www.ema.europa.eu/docs/en\\_GB/document\\_library/Scientific\\_guideline/2014/10/WC500176768.pdf](http://www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2014/10/WC500176768.pdf) Last accessed 28.11.16
3. Date on File. NHS England Specialised Commissioning. December 2016.
4. National Institute for Health and Care Excellence: Medicines optimisation: key therapeutic topics. Feb 2016. Available at <https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-advice/Key-therapeutic-topics/medicines-optimisation-ktt-feb-16.pdf> Last accessed 28.11.16
5. 'National Institute for Health and Care Excellence (NICE) and NHS England Proposals for changes to the arrangements for evaluating and funding drugs and other health technologies appraised through NICE's technology appraisal and highly specialised technologies programmes' Version number: 1 First published: 13 October 2016. [https://www.nice.org.uk/Media/Default/About/what-we-do/our-programmes/technology-appraisals/NICE\\_NHSE\\_TA\\_and\\_HST\\_consultation\\_document.pdf](https://www.nice.org.uk/Media/Default/About/what-we-do/our-programmes/technology-appraisals/NICE_NHSE_TA_and_HST_consultation_document.pdf)
6. NHS England. What is a Biosimilar Medicine? 24 Sept 2015. Available at <https://www.england.nhs.uk/wp-content/uploads/2015/09/biosimilar-guide.pdf> Last accessed 28.11.16
7. Scottish Medicines Consortium (SMC) Policy statement Biosimilars :Available at [https://www.scottishmedicines.org.uk/About\\_SMC/Policy\\_statements/Biosimilar\\_Medicines](https://www.scottishmedicines.org.uk/About_SMC/Policy_statements/Biosimilar_Medicines) Last accessed 28.11.16
8. Healthcare Improvement Scotland. Biosimilar Medicines: A National Prescribing Framework. 19th May 2015. Available at [http://www.healthcareimprovementscotland.org/our\\_work/technologies\\_and\\_medicines/programme\\_resources/biosimilar\\_medicines\\_framework.aspx](http://www.healthcareimprovementscotland.org/our_work/technologies_and_medicines/programme_resources/biosimilar_medicines_framework.aspx) Last accessed 28.11.16
9. NHS England 2017 – 2019 Prescribed Services CQUIN Schemes: GE3: Hospital Medicines Optimisation Available at <https://www.england.nhs.uk/nhs-standard-contract/cquin/pres-cquin-17-19/> Last accessed 28.11.16
10. Daller J. Biosimilars: A consideration of the regulations in the United States and European union. Regulatory Toxicology and Pharmacology 76 (2016) 199e208
11. Renwick M J, Smolina K, Gladstone E J, Weymann D, G Morgan S G. Postmarket policy considerations for biosimilar oncology drugs. Lancet Oncol 2016; 17: e31–38
12. Schellekens H, Smolen J S, Dicato M, M Rifk R M. Drug safety 3 -Safety and efficacy of biosimilars in oncology, Lancet Oncology 2016; 17: e502–09
13. Taberbero, J, Vyas, M, Giuliani, R, Arnold, D, Cardoso, F, Casali, PG, et al. Biosimilars: a position paper of the European Society for Medical Oncology. ESMO Open, 1(6), e000142 (2017). Accessed January 31, 2017. <https://doi.org/10.1136/esmooopen-2016-000142>.
14. NHS Pharmaceutical Quality Assurance Committee 2016 with British Oncology Pharmacy Association. Guidance On Managing The Sourcing And Supply Of Ready-To-Administer Chemotherapy Doses For The NHS A 'How to' Guide. Edition 1A December 2016.

## Acknowledgements

**Martin Sheppard**, Biologics Lead Pharmacist at Southend University Hospital NHS Foundation Trust for advice on how to make a success of switch programmes (case study 1)

**Mark Bousfield**, Chemocare Systems Manager at Newcastle Hospitals NHS Foundation Trust, for advice on set up and changing electronic prescribing systems (case study 2)

**Appendix One: BOPA Biosimilar Monoclonal Antibodies (MABs) Position Statement:**

1. BOPA believes oncology pharmacy teams are key to ensuring the safe, successful and rapid adoption of rituximab and trastuzumab biosimilars (the first two oncology biosimilars MABs to market).
2. NICE and SMC have confirmed that their decisions on the originator molecules, apply to relevant licensed biosimilar monoclonal antibody products which subsequently appear on the market (1,7).
3. BOPA's position is that biosimilar monoclonal antibodies (MABs) are therapeutically equivalent to the originator molecules (4) and can and should be used for all commissioned indications, provided pharmacovigilance safeguards are in place, e.g. branded prescribing.
4. BOPA acknowledges that biosimilar MABS cannot be automatically substituted (2,10,13). However switching from originator to biosimilar (or biosimilar to biosimilar) is acceptable and can be recommended as part of a medicines optimisation strategy.
5. BOPA believes oncology pharmacy teams are key to ensuring pharmacovigilance monitoring is in place to ensuring all biosimilars are prescribed by brand and batch numbers are tracked.
6. BOPA believes biological medicines in general are safe and well tolerated, with the potential for immunogenicity the main safety concern and that adverse reactions are likely to be batch related and not product related (12). Biosimilar MABs will be black triangle drugs so all adverse events must be reported in line with organisational policy and the MHRA Yellow Card Scheme.
7. BOPA believes oncology pharmacy teams have a key role in helping clinicians initiate or switch patients to biosimilar MABs, either by directly supporting clinicians when seeing patients in clinic or indirectly by counselling patients in pharmacy, on wards or chemotherapy day units.
8. BOPA recommends that NHS stakeholders work together to provide National Patient Information Leaflets on biosimilars to avoid duplication and ensure a consistent message is given to patients. BOPA believes all patients should be given appropriate information on biosimilar MABS and have the opportunity for discussion with a member of the pharmacy team, who can assure them starting on or switching to a biosimilar MAB will not impact on the outcome of their cancer treatment.
9. Switching must be undertaken with the involvement of pharmacy to ensure patients and prescribers are involved in deciding to switch and any concerns about the efficacy and safety as result of switching are addressed by discussion with patients on the benefits and evidence of biosimilars.
10. BOPA believes all patients switched from originator to biosimilar, or between biosimilars, should be monitored and that the biosimilars SmPC guidance on administration rates should be followed. This will ensure that the evidence base for safe switching is increased.
11. BOPA acknowledges that the NHS is encouraging competition in the oncology biosimilar MABS market and that products that have been through NHS procurement pathways and found to deliver best value to the NHS should be used.
12. BOPA believes that the savings achieved by rapid adoption of biosimilar MABs are an opportunity to safeguard NHS budgets and create headroom to ensure that new innovative cancer medicines are affordable. Thus benefiting patients and clinicians as well as significantly reducing NHS expenditure.
13. BOPA acknowledges that in future switching between biosimilars following NHS contract awards may be necessary **but** the significant amount of pharmacy time needed to manage the switch must be accounted for in the contracting/commissioning process. This includes changing e-prescribing systems for each different brand and encouraging clinician /patient acceptance and engagement.

## Document Control

<b>Title</b>		<b>Biosimilar MABs Implimentation Guidelines &amp; BOPA Position Statement 04.02.17 V1.0</b>	
<b>Original Author</b>		Steve Williamson	
<b>Owner</b>		BOPA Committee	
<b>Change History</b>			
<b>Draft</b>	<b>Date</b>	<b>Contributor</b>	<b>Summary of Change</b>
0.1	01/12/16	N/A	1st Draft
0.2	12/12/16	BOPA committee	Position statement as a separate document, committee comments – for consultation
1.0	05.02.17	BOPA membership BOPA Committee	Many changes as a result of comments received via consultation with BOPA members and key stakeholders. Proof read by committee members

## Information Reader Box

<b>Proposed Target Audience</b>	Oncology and Haematology Pharmacists, Provider Trust Chief Pharmacists (including NHS England, NHS Scotland, NHS Wales and NHS Northern Ireland) Oncologists and Haematologists, NHS Commissioning Pharmacists, NHS procurement Specialists, PSMG, UKONS, BSH and other key stakeholders, NHS England Specialised Commissioning including Chemotherapy and Medicines Optimisation CRG's, Manufacturers of Biosimilars and Originator Molecules.
<b>Proposed Circulation List</b>	BOPA Members, Chief Pharmaceutical Officers for each home country, NHS Commissioning and Procurement Pharmacists, NHS Specialist Pharmacy Service Groups, Provider Trust Chief Pharmacists, Chemotherapy and Medicines Optimisation CRG's.
<b>Contact details</b>	Steve Williamson, Consultant Cancer Pharmacist Northumbria Healthcare/ NHS England Pharmacy, North Tyneside Hospital, Rake Lane, North Shields, Tyne and Wear, NE29 8NH, <a href="mailto:steve.williamson@nhct.nhs.uk">steve.williamson@nhct.nhs.uk</a>