

THE BRITISH NATIONAL FORMULARY — MEMOIRS OF A FORMER CHAIRMAN

By Owen. L. Wade, MD, FRCP

To commemorate his appointment to the Joint Formulary Committee of the British National Formulary 40 years ago this month, Professor Owen Wade gives a personal account of how the BNF, as we know it today, was created



The Joint Formulary Committee at the launch of the first edition of BNF No.1 1981, on 9 February 1981. Back row (from left): Dr Peter Greenfield (DHSS), Dr John Griffin (Medicines Division, DHSS), Dr Mervyn Goodman (GP, BMA), John Balmford (community pharmacist, PSGB), Dr George Tudhope (consultant, BMA), Colin Hitchings (hospital pharmacist, PSGB). Front row: Dr Frank Wells (joint secretary JFC, BMA), Ronald Brown (executive editor), Professor Owen Wade (chairman JFC), John Kerr (deputy chairman JFC, PSGB), Stephen Jolly (joint secretary JFC, PSGB). Not present: Dr George Mitchell (academic, BMA) and Dr Brian Wills (chief pharmacist, DHSS).

The British National Formulary (or the BNF), is published by the British Medical Association and the Royal Pharmaceutical Society of Great Britain. Its aim is to help doctors to prescribe drugs rationally, effectively and economically. To understand its origin it is necessary to review briefly the development of medical practice in Britain.

In 1518, the physicians detached themselves from the grocers and apothecaries and Dr Thomas Linacre, physician to Henry VIII founded the Royal College of Physicians of London. A century later, in 1617, the apothecaries who practised medicine and compounded and sold medicines, left the Grocers Company and established the Apothecaries Society. Within the society, relationships between those who diagnosed and treated patients and those who compounded and sold medicines were sometimes strained, and in 1841 the chemists and druggists set themselves apart by creating the Pharmaceutical Society of Great Britain. In 1831, the British Medical Association (BMA), had been formed to represent the views of medical practitioners, but membership was not compulsory for doc-

tors. It was later to play an important part in the creation of the BNF.

A major development in the practice of medicine was the creation by Act of Parliament in 1858 of the General Medical Council to supervise medical education and the standards for qualification of registered medical practitioners. In 1864 this newly created council was authorised to prepare the British Pharmacopoeia, which for the first time in the United Kingdom laid down legally enforced standards for the quality of individual drugs used in medicines.

There were, of course, many lotions, mixtures, ointments, enemas and pills in common use, and over the next 70 years many formularies and pharmacopoeias were published for the convenience of both pharmacists and doctors. Probably the most famous of these was Martindale's The Extra

Pharmacopoeia. William Martindale was a pharmacist at 10 Cavendish Street, close to the then increasingly fashionable Harley Street in London. His book was to become a massive authoritative volume which has been published for many years by the Royal Pharmaceutical Society of Great Britain (Martindale the complete drug reference).

The National Health Insurance Act (NHI) was passed by the Liberal government in 1911. The Act had a difficult passage under the guidance of Lloyd George who was much disliked by the medical profession. Under the Act, a doctor was paid an annual fee of seven shillings for each patient on his "panel", one shilling of which was to cover the cost of any medicines he prescribed. Before the Act, it had been usual for doctors either to dispense and compound medicines themselves or to have an arrangement with a local pharmacist who would be familiar with the elaborate and often complicated mixtures that doctors, in those days, so often prescribed for their patients. But when the Act came into force the prescriptions had to be written on NHI prescription forms, which the patient could take to any pharmacy. So increasingly, some uniformity of prescribing was needed and

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this was implemented by the production of small formularies by the local panel committees that represented the NHI doctors. In the Birmingham University library we have one of these early formularies from Liverpool. It is dated 1913 and contains 31 preparations, which include five gargarismata (gargles), one pulvere (powder), three lotions and 19 misturae. The pharmacological activity of many of these preparations is limited, but I think this was true of many of the medicaments of those times.

After the 1914–18 war, many local formularies were produced but, often, similar preparations might have different titles in different formularies and sometimes a preparation with a title such as “Linctus pro Tussi” (cough linctus) would contain different ingredients depending on the formulary used. To handle this problem local panel committees joined together to produce formularies to serve all NHI doctors in a town or a larger area. I have a North of England Formulary that served doctors working for 17 local panel committees and a Midland Conjoint Formulary that was used by doctors in Birmingham, Coventry and Wolverhampton. In 1927, the BMA and the Retail Pharmacists Association took this a step further and published a National Health Insurance Formulary for use by all National Health Insurance doctors throughout the United Kingdom. It contains 295 monographs and, at the beginning of the book, there is information about the amounts that are usually prescribed and the frequency of rescribing. Although the NHI scheme was created for the treatment of insured working people, these preparations were widely used for other patients.

Many of the larger hospitals, whether funded by voluntary contributions by the public or run by local authorities, had their own pharmacopoeias. I have a copy of the University College Hospital, London, Pharmacopoeia of 1939. It contains 214 monographs. All the titles of these monographs are in Latin and the doses are in the grains and minims of the apothecaries system (see Panel 1). There are a number of elegant and elaborate mixtures which seem now to have little pharmacological value; several contain evil tasting constituents such as valerian and asafoetida. This pharmacopoeia contains 51 monographs for tablettae, but the only chemotherapeutic remedy is Tablettae Sulphanilamidi. A preparation of raw liver, Extractum Hepatis Liquidum, is included for the treatment of pernicious anaemia as is Injectio Insulinum for diabetes.

When I pick up the small, well-worn black book which I carried in the pocket of my white coat for five or six years and turn over its pages I cannot help thinking how great the changes in medical practice in my lifetime have been.

THE NATIONAL WAR FORMULARY

When war came in 1939 it was important to exercise the strictest economy in prescribing. Even if the drugs were available, the demands on manpower, materials and transport for packing and distribution were

greatly limited and the Minister of Health appointed a small committee to prepare the National War Formulary (NWF). This formulary contained, according to its introduction, “a selection of medicaments sufficient in range to meet the ordinary requirements of therapeutics for doctors in the community and in hospital”. The titles were in Latin and the doses in the apothecaries system. In retrospect the formulary contained, I thought, an inappropriate number of tonics, cough mixtures and aperients. It also included three enemata but, for the life of me, I find it difficult to think that Enema Fellis Bovini (bovine bile enema) was needed for the war effort. The NWF did however, contain three important sulpha drugs, sulphanilamide, sulphathiazol and sulphapyridine — this last the drug used to treat Churchill when he had pneumonia in North Africa in 1943.

THE BRITISH NATIONAL FORMULARY

When the National Health Service (NHS) was created in 1948, the Pharmaceutical Society of Great Britain and the British Medical Association, which had both been associated with the production of the NWF, decided to produce a formulary for use throughout the NHS. A Joint Formulary Committee (JFC) under the chairmanship of Professor Edward Wayne of Glasgow was appointed and the first edition of the National Formulary was published in 1949. New editions followed at three yearly intervals. In 1957, in its 4th edition, it became the British National Formulary. In the early editions a useful section of “Notes for prescribers” preceded the “Formulary” itself, which was presented with Latin titles for the monograph arranged according to their pharmaceutical form in alphabetical order: applications (dermatological preparations), auristellae (ear drops), cataplasma (poultices), haustus (draughts) and, further on, injectiones, misturae and tablettae etc. This was a time of exciting developments,

with the arrival of new penicillins, chloramphenicol, streptomycin and isoniazide — how wonderful it was to be able to treat tuberculosis effectively! And there were many others: corticosteroids, antihistamines, the first anti-thyroid drugs and chlorpromazine for psychiatric illness.

I went to Queens University, Belfast, in 1957 to a chair of pharmacology and therapeutics. Dr H. J. Cronhelm, a member of my department, had been for many years the only member of the JFC from Northern Ireland, and when he retired in 1963, I was appointed in his place. When I joined the committee, the chairman was Professor Andrew Wilson of Liverpool. It was then an enormous committee with 38 members (doctors and pharmacists). Most of the doctors were general practitioners and a lot of the work for medical members fell on the few who were in academic life: Professor Andrew Wilson, Professor Graham Wilson of Sheffield, Professor Alastair MacGregor of Aberdeen, Dr Roy Goulding of Guy's Hospital, London, and me. The committee had already made a decision in 1960 to publish the BNF in two forms: one edition in the traditional format with preparations arranged pharmaceutically and an alternative edition with preparations grouped pharmacologically (eg, drugs acting on the alimentary system, drugs acting on the cardiovascular system, etc) with appropriate notes and advice on prescribing at the beginning of each group. English was replacing Latin and the old apothecaries' system of grains and minims was being replaced slowly with what some members called the “new-fangled” metric system.

In the tradition of the old NWF, the BNF contained a selection of medicaments and much of the committee's time was spent in deciding which drugs and preparations were to be included. The GP members were mostly elderly and conservative in their views and, although they accepted the introduction of important and effective new drugs, they resented any deletions. Discus-

Panel 1: Examples of mixtures in the 1939 University College Hospital Pharmacopoeia

Mistura Cbloralis et Bromidi Opiata (synonym: *Mother's Mixture*)

<i>Potassii Bromidum</i>	25 grains
<i>Cbloralis Hydras</i>	25 grains
<i>Tinctura Opii</i>	7½ minims
<i>Liquor Extractum Liquoricum</i>	15 minims
<i>Aqua Chloroformi</i>	ad ½ fluid oz
Mitte 12 oz, Sig. ½ fluid oz tds	

Mistura Salini Aperiens (synonym: *Mistura Alba*)

<i>Magnesii Sulphas</i>	60 grains
<i>Magnesii Carbonas</i>	10 grains
<i>Aqua Menthae Piperatae Distillata</i>	ad ½ fluid oz
Mitte 6 oz, Sig. ½ fluid oz nocte	

In the above prescriptions:

1 grain = 0.0648g, 1 minim = 0.06ml approx, 1 fluid oz = 28.41ml

Panel 2: The Joint Formulary Committee 1978–86

Chairman O. L. Wade

From the PSGB

J. P. Kerr (deputy chairman)
J. E. Balmford
C. R. Hitchings

From the BMA

Dr M. Goodman
Dr. M. Mitchell
Dr. R. Tudhope

From the DHSS

B. A. Wills
Dr P. R. Greenfield, retired 1982
Dr R. H. Smith, from 1982
Dr J. P. Griffin, retired 1985
Dr G. Jones, from 1985

sions were often prolonged and sometimes heated. There were still a lot of traditional tonics and mixtures in the formulary and I remember vividly, old Dr Walter Leak, from Lee in Staffordshire, fighting a strong rear-guard action to prevent us deleting any of them. Professor Wilson was extremely patient, and skilled at calming tempers and I learnt a lot on how to handle difficult meetings by watching him.

The usual procedure was for one of the members of the Committee, usually one of the academic members, to be asked to present a draft of one of the sections of the formulary and this was then discussed and modified. It was a slow and tedious business. The meetings were held in a large and gloomy committee room at BMA House in Tavistock Square. They started at 10 am and seldom finished before 4 or 5 pm.

In those days I used to leave Belfast at about 6 pm, travel to Larne by train, board the *SS Princess Margaret* to Stranraer and pick up the night sleeper to London. After the meetings I travelled to Liverpool and slept overnight to arrive home for breakfast. There were times when the weather was atrocious and the sea crossing heavy, but I never missed a meeting. One night when I got to Liverpool it was so stormy that I went straight down to my berth and to sleep before we left harbour. When the steward, who had worked on the boat when she was a hospital ship in the war, woke me with tea the next morning I commented on how well I had slept, only to be told that we were still in Liverpool!

CONCERN ABOUT THE FUTURE OF THE BNF

When Professor Wilson retired in 1971, Dr John Bishop Harman became chairman. He reduced the size of the JFC. New, younger members were appointed and the meetings became shorter but more productive. This was a time when the pharmaceutical industry in England, Europe and North America was marketing a flood of new drugs and preparations (eg, antihistamines, hypnotics, antibiotics etc). We tried to help doctors by including an appropriate selection of these medicaments. Our selection was necessarily rather arbitrary and we had considerable difficulty with new drugs. Our policy was to include only those for which there was good evidence of efficacy, and this meant that we were sometimes very late at including in the formulary a really useful drug.

By the mid-1970s it was clear that the use of the BNF, with its new editions every three years, was declining. Instead, doctors used the Monthly Index of Medical Specialities (MIMS) which was produced by Haymarket Publishing. MIMS was on the desk of every practitioner and in the pocket of every house officer and 80 per cent of prescribing was being done from it. By 1975 the Medicines Commission, of which I was a member, was becoming concerned that the prescribing practice of doctors was being unduly influenced by the pharmaceutical industry and the commission and the Department of Health and Social Services (DHSS) made it clear that a new BNF was needed, which would:

- No longer be selective but give information to doctors about all available medicines
- Give information about the price of medicines
- Be a handbook that would fit into a coat pocket and be easy to use
- Provide up to date information

The discussions between the DHSS, the BMA and the Pharmaceutical Society were led by Dr Bishop Harman. They started in 1975 and continued for the next three years. This was worrying, because as discussions went on, the 1976 edition of the BNF was growing more out of date. It was realised that the production of a new formulary of the type wanted by the DHSS would take a lot of time and effort. Furthermore, by the time it was available it might not even be used, because doctors would have grown accustomed to using other information sources. At this stage however, Dr Edward Harris, the Deputy Chief Medical Officer at the DHSS, stepped in and gave a firm assurance to the two organisations that if they produced a new BNF that met the specifications outlined above, the DHSS would purchase it and distribute it to all doctors and pharmacists in the NHS. Few know of the debt that we owe to Dr Bishop Harman and Dr Harris — without that firm decision, the BNF would have died.

THE NEW BNF

In 1978, I was appointed chairman of a new, smaller JFC. There were nine members, three from the BMA, three from the Pharmaceutical Society and three from the

DHSS (see Panel 2), and two secretaries. We met for the first time in February 1979. We appointed the late Ron Brown as the executive editor of the BNF. This was a splendid appointment because Mr Brown had worked for the British Pharmacopoeia and Martindale's Extra Pharmacopoeia for many years and he brought with him a wealth of experience and knowledge. He was supported by Ainley Wade as general editor of the BNF — no relative of mine, but nice to have another Wade around.

The task ahead of us was daunting. The main content of the book was to be monographs of every pharmaceutical preparation on the market in the United Kingdom arranged according to their use (gastro-intestinal, cardiovascular, respiratory etc). Each of these sections was to be preceded by notes on the use of the drugs and for each section, we chose an author and two referees to prepare these notes. The author was to produce a draft of the notes which were to be commented on and, if necessary, modified by the referees. The final decision on what was to be published was to be made by the committee. It was a great advantage that I or my colleagues knew personally most of the authors and referees that we asked to help in this work.

The preparation of the monographs presented us with many problems. There was always a great deal of information available for every preparation; our difficulty was to select the information that a doctor would need to make an appropriate choice for the treatment of his or her patient. As we were to produce a handbook we needed to confine the information to the minimum. Here I was able to help. Dr Linda Beeley at the Queen Elizabeth Hospital, Birmingham, had been working with a group of computer experts to find how computers and visual display units could help doctors with their prescribing. They had devised a system that allowed a doctor to call up information on any drug he or she needed to prescribe. Not only information about the preparations available and their doses, but also information about possible side effects and any precautions needed if the patient suffered from, say, renal or hepatic disease, or was already taking other medicines. Michael Drury, professor of general practice at Birmingham, and I had already drawn extensively on this information and were impressed with its value.

With help from Dr Beeley, I prepared a draft of the section of all the monographs which we intended to include in the section on cardiovascular drugs. Mrs Jean Bourne and Mrs Anne Stephenson, two secretaries in my department, drafted out a typescript of the monographs in such a form that they were not too crowded and were easy to read. I presented this draft to the committee and it was examined and modified in the light of their comments and then Mr Brown and his colleagues produced a mock up which showed convincingly that the information could be printed in a clear and accessible form. After that it was just hard work. Everything had to be checked and rechecked and then checked again.

We gave great care to the guidance on prescribing at the beginning of the book. Besides sections on prescription writing, prescribing for children and prescribing for the elderly, which had been included in previous editions, there were notes and tables about prescribing in liver disease and in renal impairment. The sections on Controlled Drugs, drug dependence and the emergency treatment of poisoning were redrafted.

At the end of the book the chapter "Vaccines, the prevention of disease, and vaccination programmes for children" was enlarged and a chapter on drugs used in anaesthesia was added. Another innovation were three useful appendices:

- Drug interactions (Appendix 1)
- Intravenous additives (Appendix 2)
- Borderline substances (Appendix 3)

Appendix 3 contained details of gluten free and other foods needed in certain diseases, products for stoma care, obliterating creams for disfiguring scars or deformities and certain skin and scalp cleansing agents.

It was all ready for the printers by December 1980. The print was set by computer, making it easy to modify entries and make alterations, additions or deletions as required, in subsequent editions. The first edition of the new BNF rolled off the press, bound in ultramarine cloth and was distributed throughout the NHS in February 1981, exactly two years after our first meeting.

THE RECEPTION OF THE NEW BNF

The initial reception of the new version of the BNF from the media was unenthusiastic and from the pharmaceutical industry, hostile and unpleasant. The media's response did not surprise me. Journalists who were familiar with commonly prescribed proprietary cough mixtures or indigestion remedies used in their homes were amazed that most of them, if they appeared at all (those advertised to the public are not included in the BNF), appeared in small print, an indication that in the opinion of the committee they were of dubious value.

There was harsh criticism from the Association of the British Pharmaceutical Industry (ABPI) and from many pharmaceutical companies that the new BNF was inaccurate, inadequate and unbalanced. This criticism was unjust. It was based on a misconception that the BNF must meet the requirements demanded by the Medicines Commission of pharmaceutical companies when they produced data sheets about the new medicines that they intended to market. These requirements were to ensure that the firm included in its data sheet full information about the product as agreed with the licensing authority.

But the BNF was not marketing drugs. It does not have to meet requirements of a licensing body. It is entitled to include in its monograph only such information as is thought to be needed by doctors in making their decisions about prescribing. It can express preferences. It can list some products in small print. It is not bound to accept

Panel 3: The main additions to the BNF (1981–86)

1982	Sections on "Prescribing in pregnancy" and "Prescribing during breast feeding" were added to the guidance to prescribers
1984	For the first time a Dental Practitioners' Formulary was published with the BNF
1985	Appendix 4, "Cautionary and advisory labels for dispensed medicines", and "Information on the emergency supply of prescription only medicines" were added
1986	Yellow cards for reports on adverse reactions to drugs were added

the idea that because a product has a licence it is necessarily desirable for widespread use.

Another reason the drug companies did not like (and possibly still do not) the BNF is that in the notes for prescribers, groups of preparations such as antihistamines or thiazide diuretics are often discussed together. This implies that there is little difference between the various preparations — and this is anathema to companies that spend a great deal of money explaining to doctors that their preparation should be the preparation of choice.

The reception of the new BNF by doctors and pharmacists was very different. In hospitals it was seen in the pockets of all house staff and was well thumbed. General practitioners liked it and increasingly used it instead of MIMS. Pharmacists found it an extremely convenient reference book. And medical students, always a critical audience, spoke well of it and, more important, used it.

FURTHER DEVELOPMENT

A new edition of the BNF was published every six months in accordance with the remit given by the DHSS. In each edition there were usually between 3,000 and 4,000 changes. For example, a new drug might be introduced or a drug might be withdrawn because serious adverse reactions had been reported to the Committee on Safety of Medicines. Some new warnings might be required or some dose schedules might need to be changed. Many of the amendments were of less importance: the shape or colour of tablets might be changed, the introduction of new types of inhaler might occur, minor changes in formulation might take place, the names of drug companies might change or the prices of preparations might be altered.

Every section of the notes for prescribers was revised over each period of two years, often with new authors and different referees. Doctors needed to be able to compare the price of different preparations that were used for similar purposes. This was the case with the many analgesics, diuretics and tranquillisers then available. We gave the basic cost of 20 tablets of each preparation. But this could be misleading if one compared ordinary tablets with slow release tablets. Some doctors wanted us to give the cost of a week's treatment but the problem is that the dosage for different patients may

differ and any arbitrary dose which we gave might be misleading.

Another issue to which we gave much thought was the issue of the BNF to dental surgeons. It is true that dentists only prescribe a limited range of medicines (mainly analgesics and antibiotics) but it was becoming increasingly important for dental surgeons to be well informed about the medicines which were being prescribed to their patients, especially for instance if the patient was receiving anticoagulants, corticosteroids or immunosuppressants. R. A. Cawson of the British Dental Association gave us much help and advice on this problem and in 1984, and every two years since, a combined version of the BNF and the Dental Practitioners' Formulary has been published. Indeed, a number of new and important features were added as the years went by (see Panel 3).

A FINAL PERSONAL COMMENT

The production of the new version of the BNF was a great example of what can be achieved by a small team and it showed how effectively doctors and pharmacists can work together — helping, I hope, to heal a breach between the two professions which in one way or another has existed since 1518 when the physicians separated from the apothecaries.

The members of the JFC met as professionals but as we worked together for eight years we developed deep mutual respect and close personal friendships. We all believed that we were superbly served by the editorial staff, all of them dedicated to the BNF and led first by Mr Brown and Mr Wade and then by Anne Prasad. Everyone believed we were doing something really useful for our two professions and through them for patients. We were happy in our work.

I think it was a typically British achievement to create a Committee to produce a "British" national formulary which is completely independent of any government, is allowed to be completely independent of its founding bodies, the British Medical Association and the Royal Pharmaceutical Society of Great Britain, and is totally independent of the pharmaceutical industry.

It is typically British too that the members of the JFC and the many colleagues and experts who give such valuable advice and guidance are not paid, and are indeed proud to give their services to the BNF.